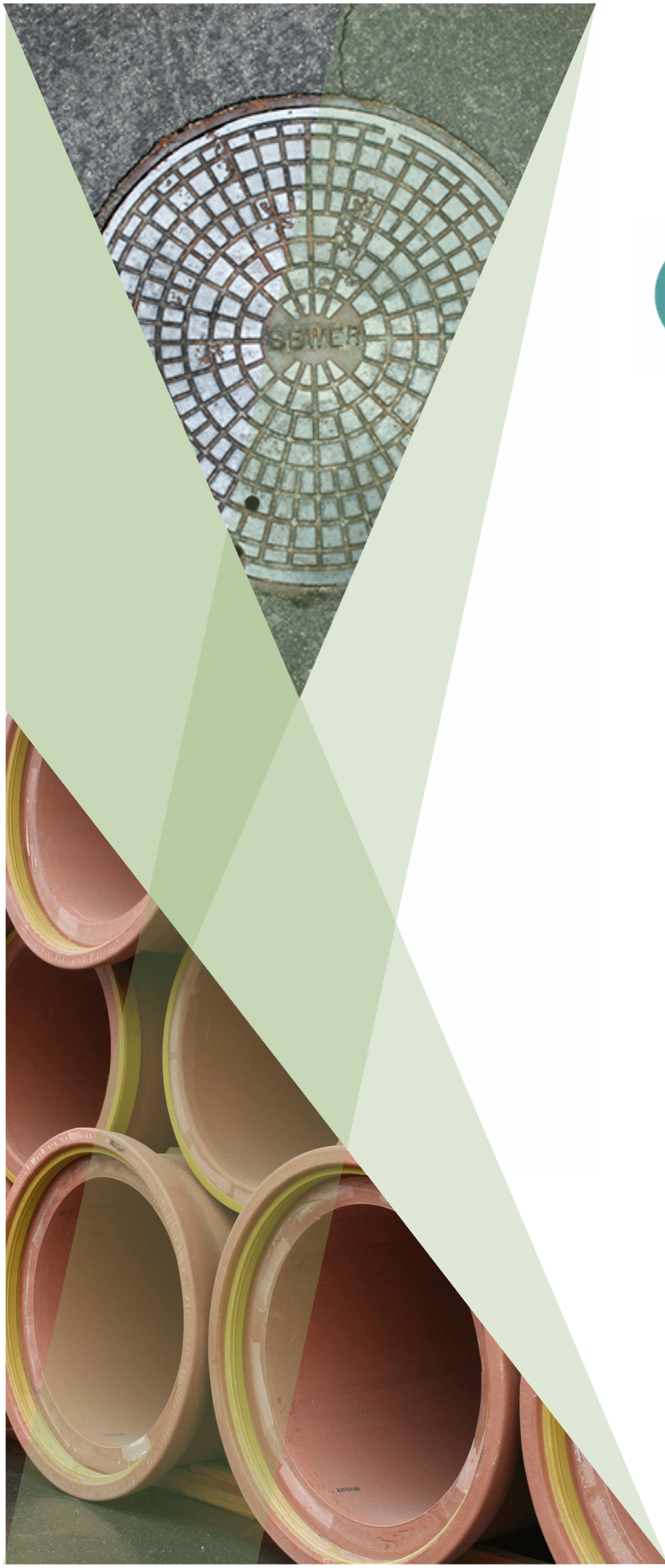


SEWER ANALYSIS REPORT

SNUG HARBOR

NEWPORT BEACH, CA

PREPARED FOR:
BACK BAY BARRELS, LLC

PREPARED BY:
FUSCOE ENGINEERING, INC.
15535 SAND CANYON, SUITE 100
IRVINE, CA 92618
(949) 474-1960

PROJECT MANAGER:
ORIANA SLASOR, P.E.

DATE PREPARED: JANUARY 2025
UPDATED APRIL 2, 2025

JOB NUMBER 4206-001-01

full circle thinking®

Table of Contents

1.0 INTRODUCTION

1.1 PURPOSE OF STUDY

The purpose of this report is to analyze the applicable Costa Mesa Sanitary District (CMSD) sewer systems for the existing and proposed conditions for the proposed Snug Harbor project. In addition, this report would include any sewer upgrades that would be required to accommodate additional wastewater flows associated with the proposed project development.

1.2 SITE DESCRIPTION

The project site is located at a 15.4 acre portion of the Newport Beach Golf Course easterly of the intersection of Irvine Avenue and Mesa Drive. The site includes three holes of the golf course, a driving range, pro shop, clubhouse, sports bar, and an at-grade parking lot. The Orange County Flood Control District (OCFCD) Santa Ana-Delhi Channel and Irvine Avenue border the northerly boundary of the property. Mesa Drive borders the southerly boundary. A Vicinity Map is shown as Figure 1 below.

The proposed project development will consist of demolition and removals of existing buildings, parking lot, golf course, and onsite infrastructure. The project will construct a surf park which will include a wave lagoon, a clubhouse building, pools, spa, athlete lodging, and parking with solar-powered canopies. Project Information is incorporated into the architect's site plan, which is included in this report as Appendix 1.

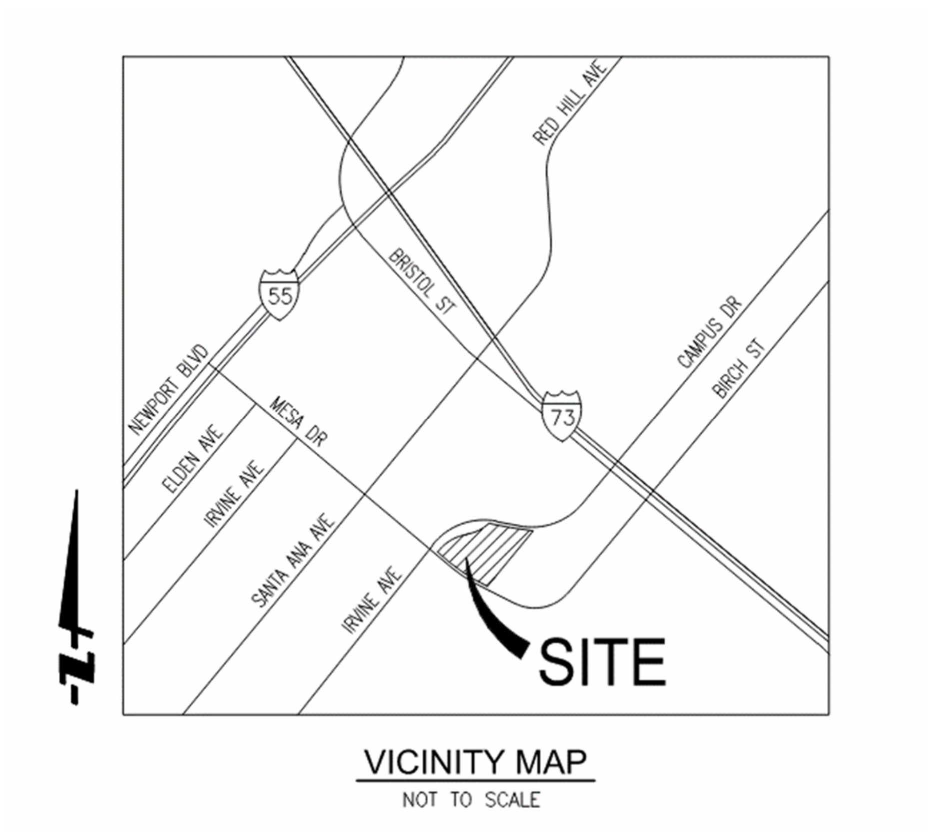


Figure 1

1.3 EXISTING SITE & SEWER FACILITIES

The following is a description of existing development and public sewer facilities surrounding the project site. See also Appendix 2 for Public Sewer Exhibits, and Appendix 3 for sewer as-built plans.

- The existing buildings consist of approximately 8,500 square feet of existing commercial uses that support the golf course. These uses include a pro shop, clubhouse and sports bar. Based on our review, an existing 6-inch diameter sewer lateral servicing this building appears to connect to the 12-inch CMSD sewer main in Mesa Drive, east of Irvine Avenue. The following paragraphs describe the discharge pattern of the CMSD sewer system.

- The existing 12-inch CMSD sewer main in Mesa Drive, discussed above, drains westerly toward Irvine Avenue. The sewer combines with other mains in Irvine Avenue, and the sewer discharges, via a 21-inch sewer main, into the Tustin/Irvine Pump Station.

- From the Tustin/Irvine Avenue (Irvine Avenue) Pump Station, the sewer is discharged via a force main, westerly on Mesa Drive, eventually to the Eldon Avenue Pump Station.

- From the Eldon Avenue Pump Station, the wastewater is discharged westerly via a force main to Fair Drive, and then continues via gravity toward Fairview Road.

- The wastewater from the project site ultimately drains to the Orange County Sanitation District (OCSD) sewer treatment facility, located in Fountain Valley.

1.4 PROPOSED DEVELOPMENT

As mentioned previously, the project will include demolishing the existing buildings. A total of 8,500 square feet of existing retail space will be eliminated.

The project will construct a surf park which will include a wave lagoon, a clubhouse building, pools, spa, athlete lodging, and parking with solar-power canopies.

The clubhouse building will consist of 68,478 (gross) square feet. There will be 20 units of athlete accommodations, each with their own restroom. There will be a 738 square foot restroom building. Additionally, there will be 9 outdoor showers for the guests.

It is estimated that the existing 6-inch sewer lateral in Mesa Drive that currently serves the property will be either removed or abandoned, and a new sewer lateral estimated to be up to 12-inch diameter will be installed, to connect to the existing 12-inch sewer main in Mesa Drive, east of Irvine Avenue.

The architect's site development plan set, along with email correspondence, are included in Appendix 1 of this report.

2.0 METHODOLOGY AND EXISTING SEWER FLOWS

Costa Mesa Sanitary District (CMSD) has provided design criteria for its public sewer systems, which is based on Los Angeles County coefficients. A copy of this criteria is included in Appendix 4.

Based on CMSD Sewer Specifications, maximum peak depths for sewer pipes with diameters greater or equal to 21″ shall not exceed ¾ full. Pipe diameters less than 21″ shall not exceed ½ full. A table of this criteria is shown below, and an excerpt of the CMSD Sewer Specifications is included in Appendix 4.

Pipe Capacity - Pipelines shall be designed to carry estimated peak flow as follows:

18" or smaller - flowing 1/2 full
21" or larger - flowing 3/4 full

The sewer monitoring investigation was performed by Utility Systems Science & Software (US3), and included obtaining the current wastewater flows in the existing CMSD sewer systems that will be accepting the project flows. The testing locations have been approved by the CMSD, and the testing duration was 2 weeks during the months of September and October 2024, by US3. The timing of the manhole monitoring was as follows:

- #1 MH105877 (12”) (Mesa Drive, East of Irvine Ave): 9/20/24 – 10/7/24
- #2 MH120016 (21”) (Irvine Ave, South of Mesa Drive): 9/3/24 – 9/20/24
- #3 MH119942 (u/s Pump station) (Irvine Ave): 9/3/24 – 9/20/24
- #4 MH104411 (24”) (Fair Drive): 9/3/24 – 9/20/24

The manhole locations are shown on the Public Sewer Exhibits (Appendix 2).

The manholes were monitored using Hach Flo-Dar Flow Meters.

The Flo-Dar methodology used by US3 consists of transmission of a digital Doppler radar beam that interacts with the fluid and reflects back signals at a different frequency than that which was transmitted. The flow-depths were detected by ultrasonic pulse echo. Flowrate was then calculated based on the continuity equation, as follows:

Q = V x A, Where Q = Flow, V = Average Velocity and A = Area.

Table 2.1 presents the results of the existing peak wastewater flowrates that were obtained from the flow monitoring operations, along with the flow-depths and percent-full for the various sewer reaches The US3 sewer monitoring report is included as Appendix 5.

Table 2.1 – Existing Condition Peak Wastewater Flows (Flow Monitoring)

MH #	Street	Peak Flow (gpm)	Pipe Size	Flow Depth (inches)	%-Full
#1	Mesa Drive	113	12"	1.97	16.4%
#2 (MH# 120016)	Irvine Ave/ Mesa Drive	546	21"	5.60	26.7%
#3 (MH# 119942)	Irvine Ave/ Upstream of Irvine/Tustin Pump Station	705	21"	6.46	30.8%
#4 (MH# 104411)	Fair Drive	1505	24"	11.24	46.8%

3.0 RESERVED SEWER CAPACITY & CREDIT FOR EXISTING SITE

During discussions with CMSD staff, Fuscoe was advised that in addition to determining the existing sewer flows, there is a "reserved capacity" of the existing golf course parcels would need to be included in the existing condition analysis. Further, since the existing golf course clubhouse and pro shop will be removed for the construction of the surf park, this amount will be handled as a credit, and subtracted from the reserved capacity.

CMSD advised that there are two areas of reserved capacity, including the project site, and areas northerly, near the airport. The areas are presented in the Service Area Maps 115 and 133 (see Appendix 10). Based on discussions with CMSD staff, the reserve areas should be calculated based on "golf course" factor of 200 gpd/acre, which is also confirmed with the Sewer Master Plan. The total acres of "reserved capacity" is just over 50 acres, and amounts to 10,054 gallons per day (gpd), or 7.0 gallons per minute (gpm) for average daily flows. The calculations and maps are included in Appendix 10.

Following the calculation of the "reserved capacity", the existing site sewer loading was determined, so that it can be credited (subtracted) from the sewer analysis. 2-years of water meter readings were obtained to determine the average monthly water usage for the existing clubhouse and pro shop (Appendix 11). The average monthly water usage was used to determine the average daily water usage of 1.0 gpm. The water usage chart and calculations are included in Appendix 10.

Using the "reserved capacity" of 7.0 gpm, and crediting the existing sewer loading of 1.0 gpm, the net "reserved capacity" is 7 – 1 = 6 gpm for average daily sewer loading. Then, using the peaking factor of 2.5, the peak "reserved" would be 15 gpm. Therefore, 15 gpm will be added to the existing condition flow monitoring results to determine the capacity of the existing sewer system to handle the proposed surf park development. Table 3.1 presents the results of the revised existing condition analysis, with the net "reserved capacity" and available capacity included.

Table 3.1 – Revised Existing Condition Peak Wastewater Flows (w/Reserved capacity)

MH #	Street	Peak Flow (monitoring) (gpm)	Peak Net Reserved Capacity (gpm)	Revised Peak Existing (gpm)	Pipe Size	Peak Flow Depth (inches)	Peak %-Full	Pipe Capacity @ ¾-full (21-24") or ½-full (12") (gpm)	Available Peak Capacity for Proposed Project (gpm)
#1	Mesa Drive	113	15	128	12"	2.09	17.4%	966	838
#2 (MH# 120016)	Irvine Ave/ Mesa Drive	546	15	561	21"	5.68	27.0%	3,144	2,583
#3 (MH# 119942)	Irvine Ave/ Upstream of Irvine/Tustin Pump Station	705	15	720	21"	6.53	31.1%	3,110	2,390
#4 (MH# 104411)	Fair Drive	1505	15	1520	24"	11.31	47.1%	3,071	1,551

4.0 PROPOSED SEWER FLOWS

The proposed project wastewater peak flows were calculated for this project using the following information, from the Site Plan and Project Information (See Appendix 1).

- A 5.06-acre surf pool (Two 5.1 million gallon hydrologically separate lagoons, with each lagoon to be fully drained every 2 years)
- 3 pools and 1 spa
- 68,478 square feet of clubhouse
- 738 square feet of restroom
- 20 athlete rooms/accommodations
- 9 outdoor showers for guests

The total proposed average wastewater flows from the project site were calculated, and the results are as follows:

- Average Lagoon/Pools/Spa Flows = 53,351 GPD
- Average Clubhouse Flows = 6,848 GPD
- Average Flows for Athlete Accommodations = 3,000 GPD
- Average Flows for Restroom Building = 74 GPD
- Average Flows for Outdoor Showers = 486 GPD
- Total Proposed Average Flows = 63,759 GPD
- Total Proposed Average Wastewater Flows = 44.3 GPM

- Using 2.5 Peaking Factor, per Appendix 4:
- **Total Proposed PEAK Wastewater Flows = 111 GPM**

The sewer generation calculations are included as Appendix 6.

The flow-depths in the existing sewer systems were calculated using Flowmaster analyses. The calculations are included in Appendix 7 of this report. The depths and percent-full of the existing sewer reaches with proposed condition wastewater flows is shown on Table 4.1. Also included is the information regarding available capacity in the existing sewer pipe, to accommodate the draining of the lagoon, which is anticipated to take place every two years.

The capacity in the existing CMSD 12-inch sewer main in Mesa Drive would only allow 727 gpm to drain one of the 5.1 million gallon lagoons, which would take about 4.9 days to drain each lagoon. However, the existing Irvine Avenue Pump Station includes capacity that would require an additional ½ day to for a single lagoon to drain, as discussed in the next section.

The lagoons are hydrologically separate. Based on discussions with CMSD staff, it is anticipated that one lagoon would be discharged each year, and will be coordinated with CMSD. CMSD will issue a discharge permit to owner at the time of each instance of lagoon discharge.

Table 4.1 – Sewer with Proposed Flow Conditions

Reach	Street	Pipe Size	Pipe Capacity @ ¾-full (21-24″) or ½-full (12″) (gpm)	REVISED Existing Peak Flow (gpm)	Project Peak Flow (gpm)	Total Proposed Flow in Pipe (gpm)	Proposed Flow Depth (in)	Proposed % Full	Available Capacity in Sewer Pipe (Proposed) (gpm)	Number of days to drain a 5.1million gallon lagoon (every 2 years)
1	Mesa Drive	12″	966	128	111	239	2.85″	23.7%	727	4.9 days
#2 (MH# 120016)	Irvine Ave/ Mesa Drive	21″	3,144	561	111	672	6.23″	29.7%	2,472	1.4 days
#3 (MH# 119942)	Irvine Ave/ Upstream of Irvine/Tustin Pump Station	21″	3,110	720	111	831	7.04	33.5%	2,279	1.6 days
4 (MH# 104411)	Fair Drive	24″	3,071	1520	111	1,631	11.78	49.1%	1,440	2.5 days

5.0 PUMP STATIONS & LAGOON DRAINING

There are two existing pump stations that accept wastewater flows from the project site. The first station is the Irvine Avenue Pump Station (formerly known as the Tustin Avenue Pump Station), located southwest of the Irvine Avenue/Mesa Drive intersection. The second station is the Eldon Avenue Pump Station, located on Eldon Avenue, off of Fair Drive. The locations of the pump stations are included on the public sewer exhibits in Appendix 2.

The pump station capacities have been obtained by the tables in the Sewer Master Plan (Appendix 9). These values are well above the net new flows (existing plus proposed). Therefore, the pump stations are deemed adequate to accept the net peak flows that would be generated by the proposed project (not including the draining of the lagoons, which would be every two years).

The available capacity in the pump station was obtained by subtracting the net total new flows (existing plus net new flows from the proposed development). The results are that the available capacities of the Irvine/Tustin pump is 649 gpm, which would be the maximum discharge from one of the 5.1 million-gallon lagoons during maintenance draining.

Each proposed wave lagoon will need to be drained completely every 2 years. To determine the number of days that will be required to fully drain each lagoon, the total volume of the lagoon, 5,100,000 gallons (one lagoon) was divided by 649 gpm allowed, and converted to days. Based on the volume to be drained and the available capacity of the Irvine/Tustin pump station, the total number of days that will be required to drain each lagoon is about 5.5 days, due to the maximum availability of the pump station. Based on discussions with CMSD, it is anticipated that only one lagoon will be drained each year.

We have reviewed the pump capacity tables of the two pump stations. Based on our review, the additional peak wastewater flow (111 gpm) for the daily functioning of the project would not exceed the flow capacity of the existing pump stations, based on the data in the pump curves. The data is presented in Table 5.1 below.

Table 5.1 – Pump Station Data & Evaluation

Pump Station	Pump Design Flow Capacity (gpm)	Total Flow to Pump Station (Revised Existing & Proposed) (gpm)	Allowable Discharge from Wave Pool Lagoon (Pump Design Capacity – Total Flow to Pump Station) (gpm)	Number of days to drain a 5.1 million gallon lagoon (every 2 years)
Irvine/ Tustin Avenue	1,480	831	649	5.5 days
Eldon Avenue	2,760	1631	1,129	3.1 days

6.0 ALTERNATE DISCHARGE RATES FOR LAGOON DRAINING

In order to determine if the discharge rates could be increased during periods of low flows in the sewer, Fuscoe reviewed the raw monitoring data to determine periods of lower wastewater in the system. It appears that the flows are less during the time between 2am and 7am, which may reduce the overall draining of the lagoon slightly. However, alternating the discharge rates is not expected to have a significant impact on the number of days that a lagoon will be able to drain completely, and the total number of days to drain will be well over 4 ½ days per lagoon.

7.0 CONCLUSIONS

The calculations and results presented in this report demonstrate that the existing CMSD sewer mains will not be adversely impacted by the wastewater flows associated with the proposed project. The project will require replacement of the existing 6-inch sewer lateral in Mesa Drive that currently serves the site, with a larger lateral, up to 12-inch diameter. The existing 6-inch lateral will either be abandoned or removed.

No sewer upgrades to the existing CMSD sewer mains will be required as a result of the proposed development. Further, the maximum flowrate that will be allowed by the existing Irvine Avenue Pump Station, for draining of the lagoon (every 2 years) is 649 gpm, which is estimated to take approximately 5.5 days to fully drain one of the 5.1 million gallon lagoons.

8.0 APPENDICES

Appendix 1 Site Information

Appendix 2 Public Sewer Exhibits

Appendix 3 Sewer Pipeline & Pump Station As-Built Plans

Appendix 4 Design Criteria

Appendix 5 Sewer Monitoring Report

Appendix 6 Sewer Generation Calculations

Appendix 7 Flow Depth Calculations

Appendix 8 Water Loss Evaluation

Appendix 9 Pump Station Evaluation

Appendix 10 Reserved Capacity Areas

Appendix 11 Existing Water Usage

Appendix 1

Site Information

Sue Williams

From: Karen Xiao <kxiao@mve-architects.com>
Sent: Monday, December 23, 2024 10:05 AM
To: Denisse Tadillo
Cc: Greg Attard; Oriana Slasor; Sue Williams; May Kyi; Pieter Berger
Subject: RE: Snug Harbor - Floor Plans

Categories: Filed in TonicDM, 04206-001 Snug Harbor Surf Park

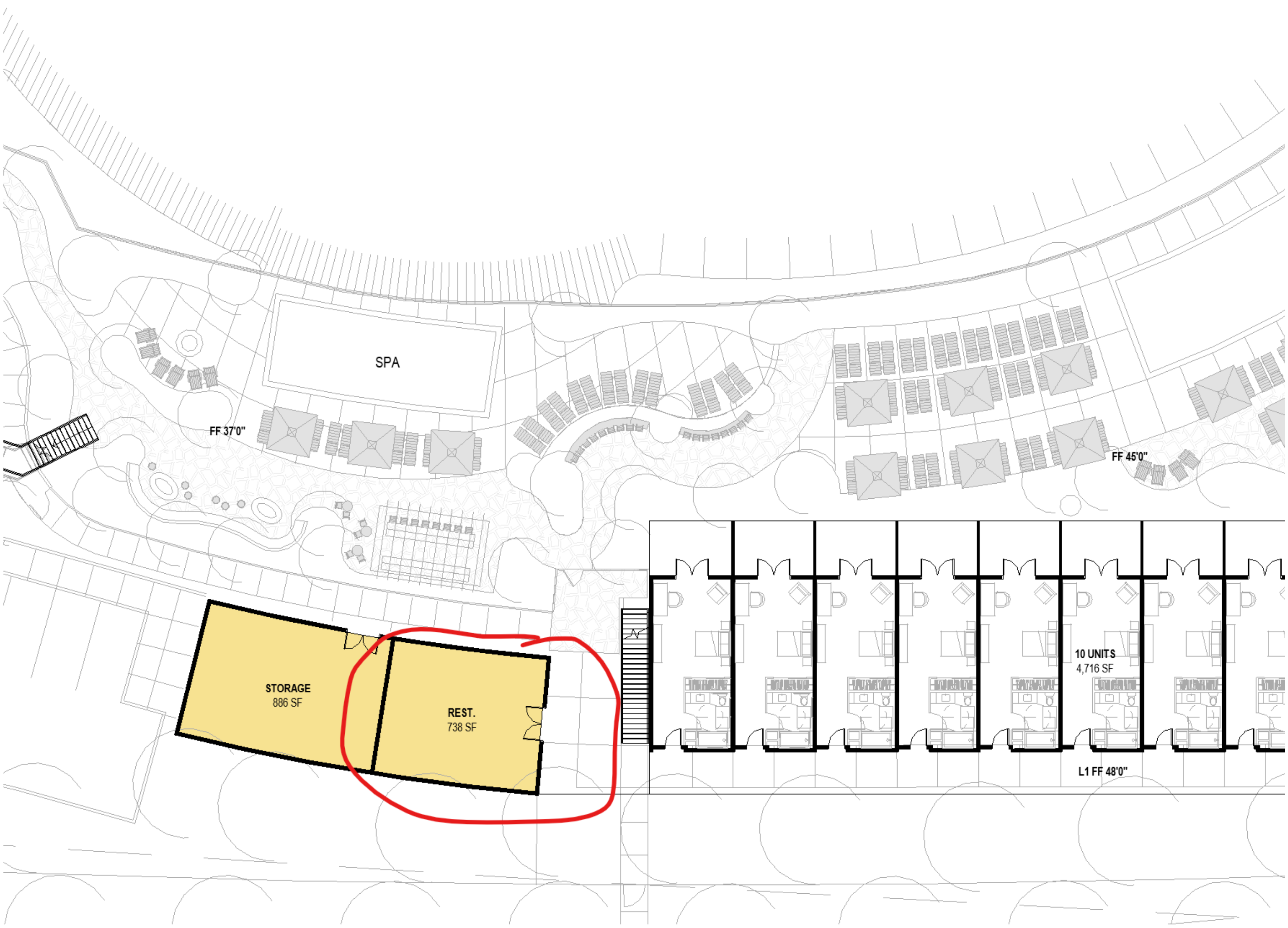
Warning: Unusual sender <kxiao@mve-architects.com>
You don't usually receive emails from this address. Make sure you trust this sender before taking any actions.

Hi Denisse,

Correct. The Clubhouse is 68,478 sf, and the Athlete Accommodations is 11,056 sf.

There are 20 units in Athlete Accommodations, each units own a restroom. And there is a restroom with water closets and sinks in the free-standing building next to the Athlete Accommodations.

738 SF



Thank you,

Karen Xiao
Designer III

MVE + PARTNERS 50

From: Denisse Tadillo <DTadillo@fuscoe.com>
Sent: Monday, December 23, 2024 9:57 AM
To: Karen Xiao <kxiao@mve-architects.com>
Cc: Greg Attard <GAttard@fuscoe.com>; Oriana Slasor <oslasor@fuscoe.com>; Sue Williams <SWilliams@fuscoe.com>; May Kyi <mkyi@fuscoe.com>; Pieter Berger <pberger@mve-architects.com>
Subject: RE: Snug Harbor - Floor Plans

Hi good morning Karen,

Would like to confirm I am reading the areas correctly, could you please confirm the gross areas below. Could you please also confirm the total number of restrooms in the athlete accommodations?
We're tying to understand what the total demand/loading would be for our water studies.

Clubhouse SF = 50,341 + 18,137 = 68,478sf

Athlete Accommodations = 9,432 + 1,624 = 11,056sf

Thank you,

DENISSE TADILLO
Senior Engineer I
DTadillo@fuscoe.com

O (949) 474-1960 | D (805) 746-9644
fuscoe.com
15535 Sand Canyon Ave, Suite 100
Irvine, California 92618

To celebrate the holiday season, our offices will be closed December 25 - January 1st, with a half day on December 24th. Happy holidays!

From: Karen Xiao <kxiao@mve-architects.com>
Sent: Friday, December 20, 2024 10:26 AM
To: Greg Attard <GAttard@fuscoe.com>
Cc: Pieter Berger <pberger@mve-architects.com>
Subject: Snug Harbor - Floor Plans

External sender <kxiao@mve-architects.com>
Make sure you trust this sender before taking any actions.

Hi Greg,

Please see attached PDF for the floor plans. The highlighted areas/rooms are shown on the table "EXCLUDED AREA FROM GENERAL PLAN S.F. – CLUBHOUSE" and "EXCLUDED AREA FROM GENERAL PLAN S.F." which are not required by city for general plan square footage. And there is code reference on sheet A0.1 indicating the required areas. Let me know if you have any question.

Thank you,

Karen Xiao
Designer III

MVE + PARTNERS 50
Irvine | Los Angeles | San Diego | San Francisco | Mexico
T 949.809.3388
www.mve-architects.com

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

SNUG HARBOR

NEWPORT BEACH

SITE DEVELOPMENT REVIEW

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

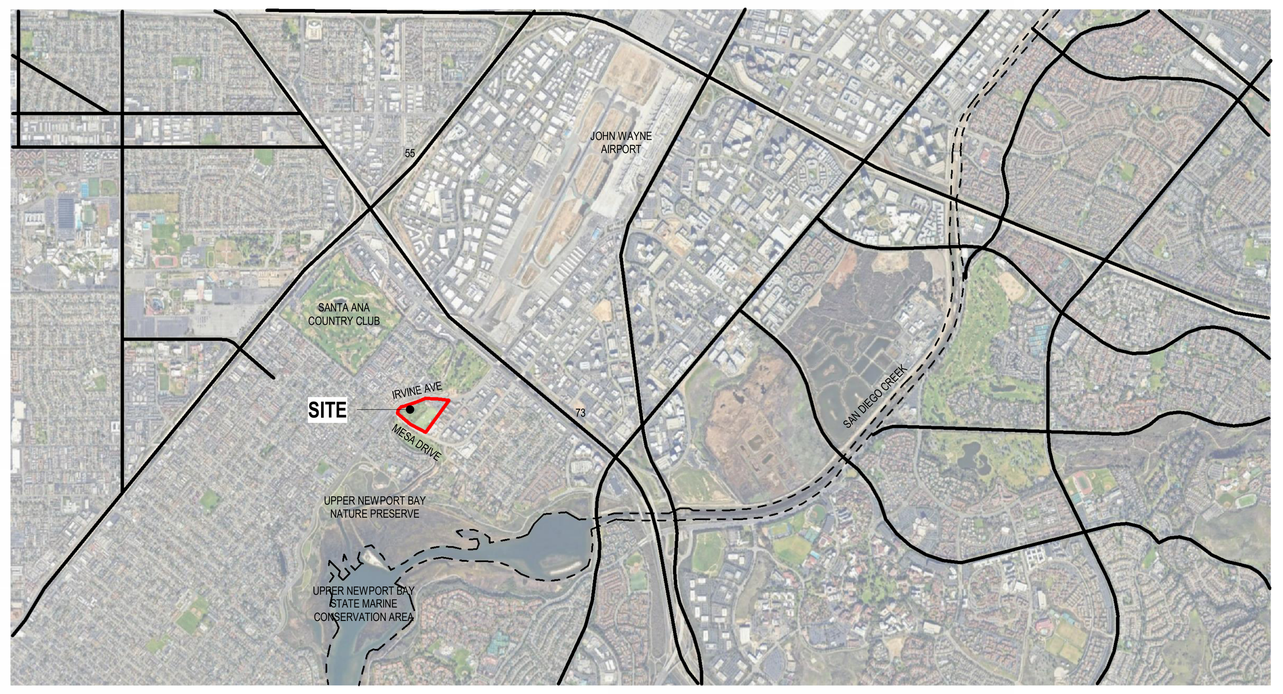
TOTAL GROSS SQUARE FOOTAGE: 79,534 SF

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.

From: Karen Xiao <kxiao@mve-architects.com>
Sent: Monday, December 23, 2024 10:05 AM
To: Denisse Tadillo
Cc: Greg Attard; Oriana Slasor; Sue Williams; May Kyi; Pieter Berger
Subject: RE: Snug Harbor - Floor Plans

Categories: Filed in TonicDM, 04206-001 Snug Harbor Surf Park

Warning: Unusual sender <kxiao@mve-architects.com>
You don't usually receive emails from this address. Make sure you trust this sender before taking any actions.

Hi Denisse,

Correct. The Clubhouse is 68,478 sf, and the Athlete Accommodations is 11,056 sf.

There are 20 units in Athlete Accommodations, each units own a restroom. And there is a restroom with water closets and sinks in the free-standing building next to the Athlete Accommodations.

738 SF

SHEET INDEX

SNUG HARBOR
NEWPORT BEACH, CA 92660

SITE DEVELOPMENT REVIEW

BACK BAY BARRELS, LLC
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IRVINE, CA 92614
PHONE: 949.809.3388

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'**

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

1

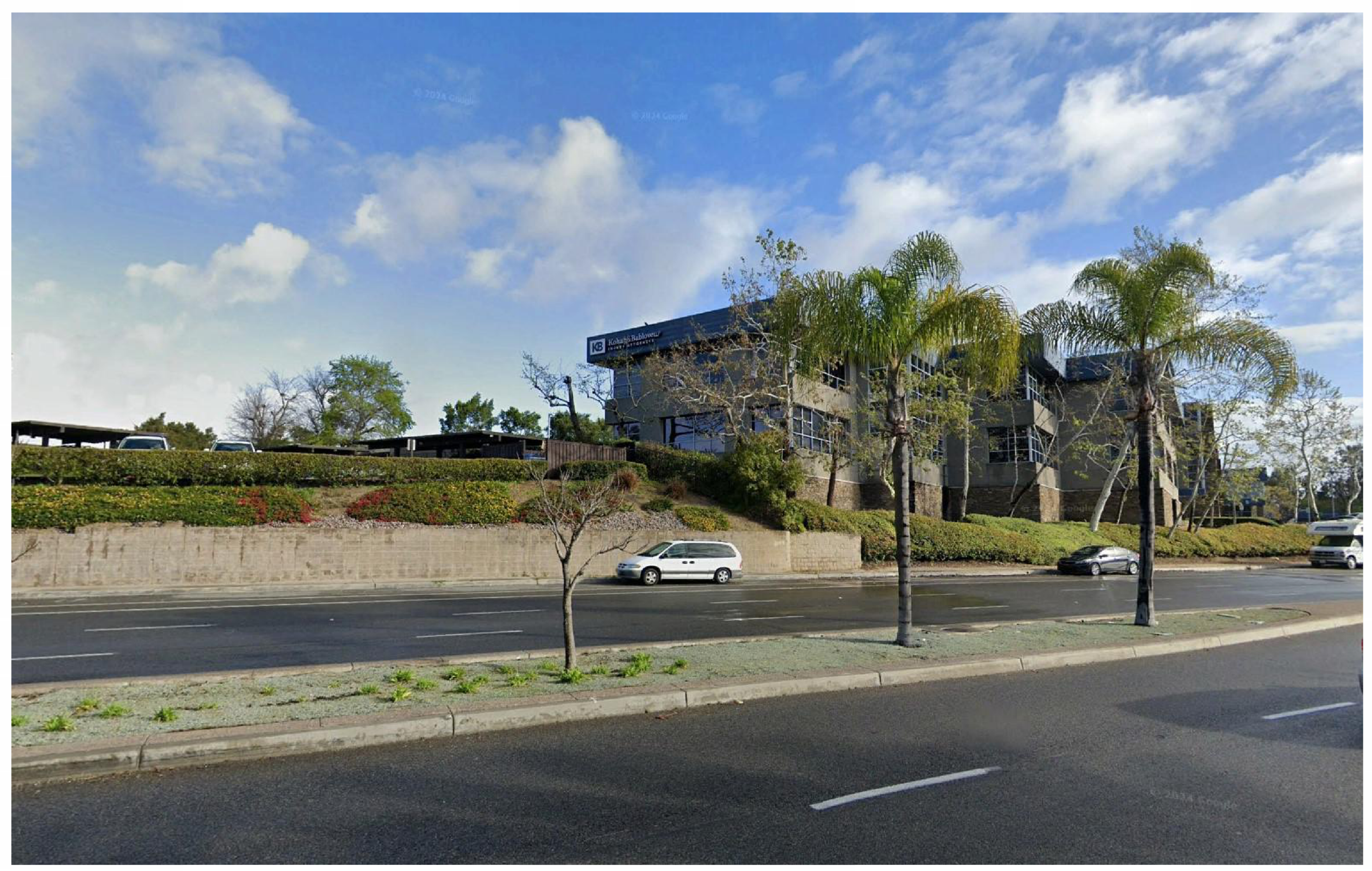
2

3

8

4

7



6

5

SNUG HARBOR
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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

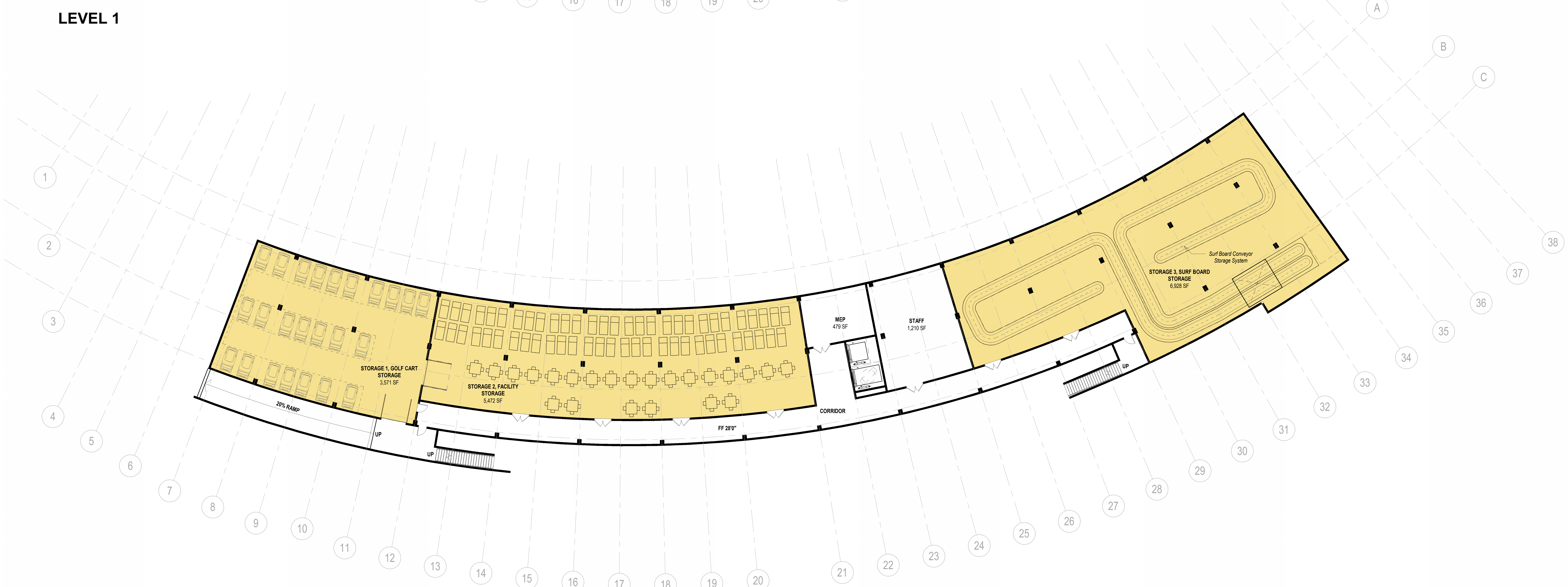
EXCLUDED AREA FROM GENERAL PLAN S.F. - CLUBHOUSE		
LEVEL	PROGRAM	AREA
LEVEL B1	STORAGE 1, GOLF CART STORAGE	3,571 SF
LEVEL B1	STORAGE 2, FACILITY STORAGE	5,472 SF
LEVEL B1	STORAGE 3, SURF BOARD STORAGE	6,928 SF
		15,971 SF
LEVEL 1	BOARD STORAGE	548 SF
LEVEL 1	REST.	1,618 SF
		2,166 SF
		18,137 SF

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
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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		
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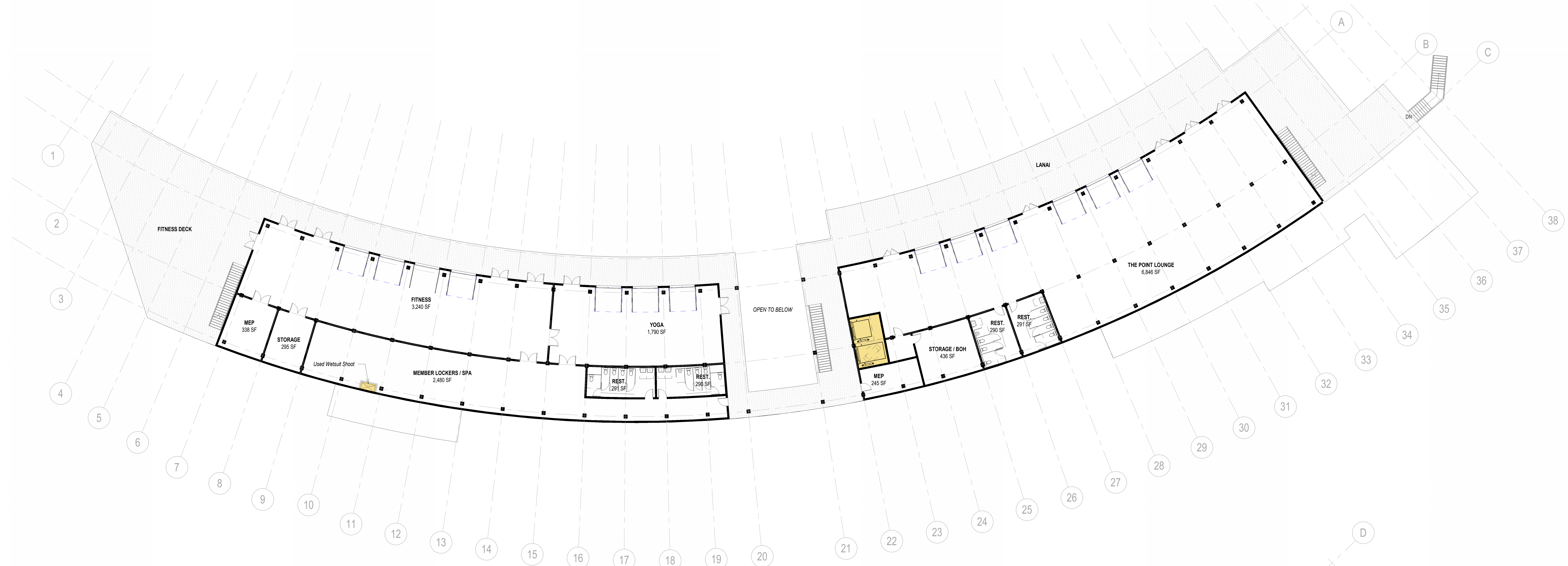
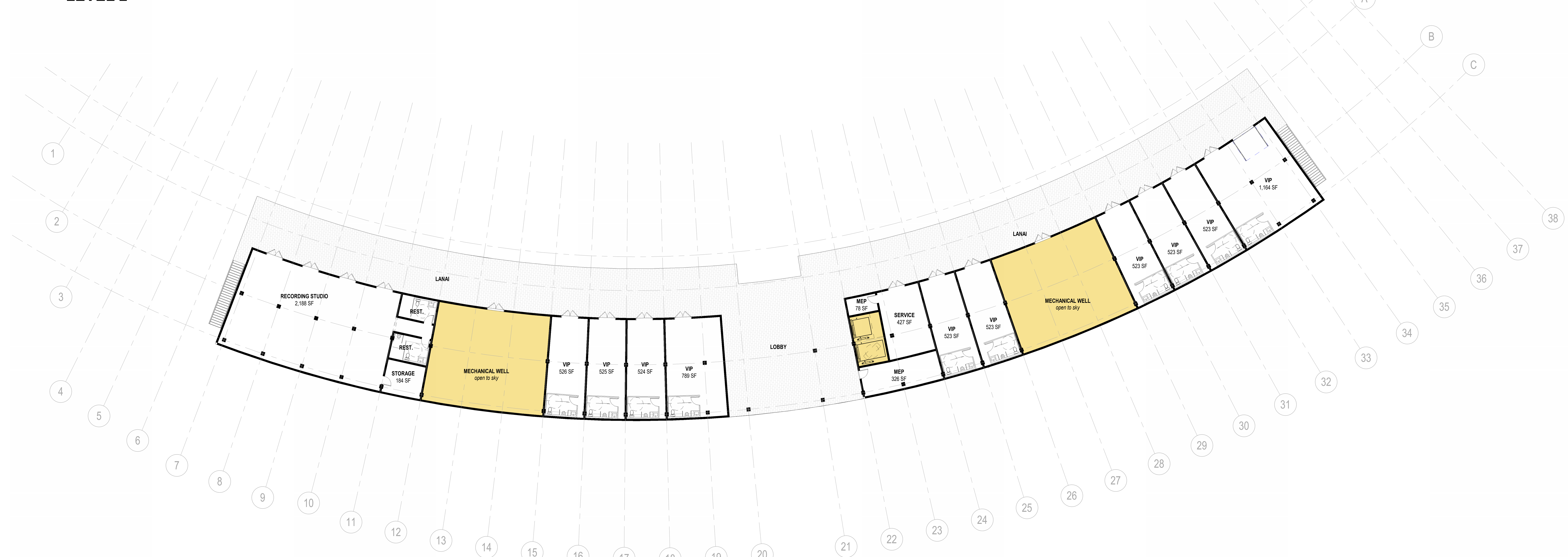


LEVEL 2



LEVEL 3

** 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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A1.2
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
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TOTAL GENERAL PLAN SQUARE FOOTAGE: 59,773 SF

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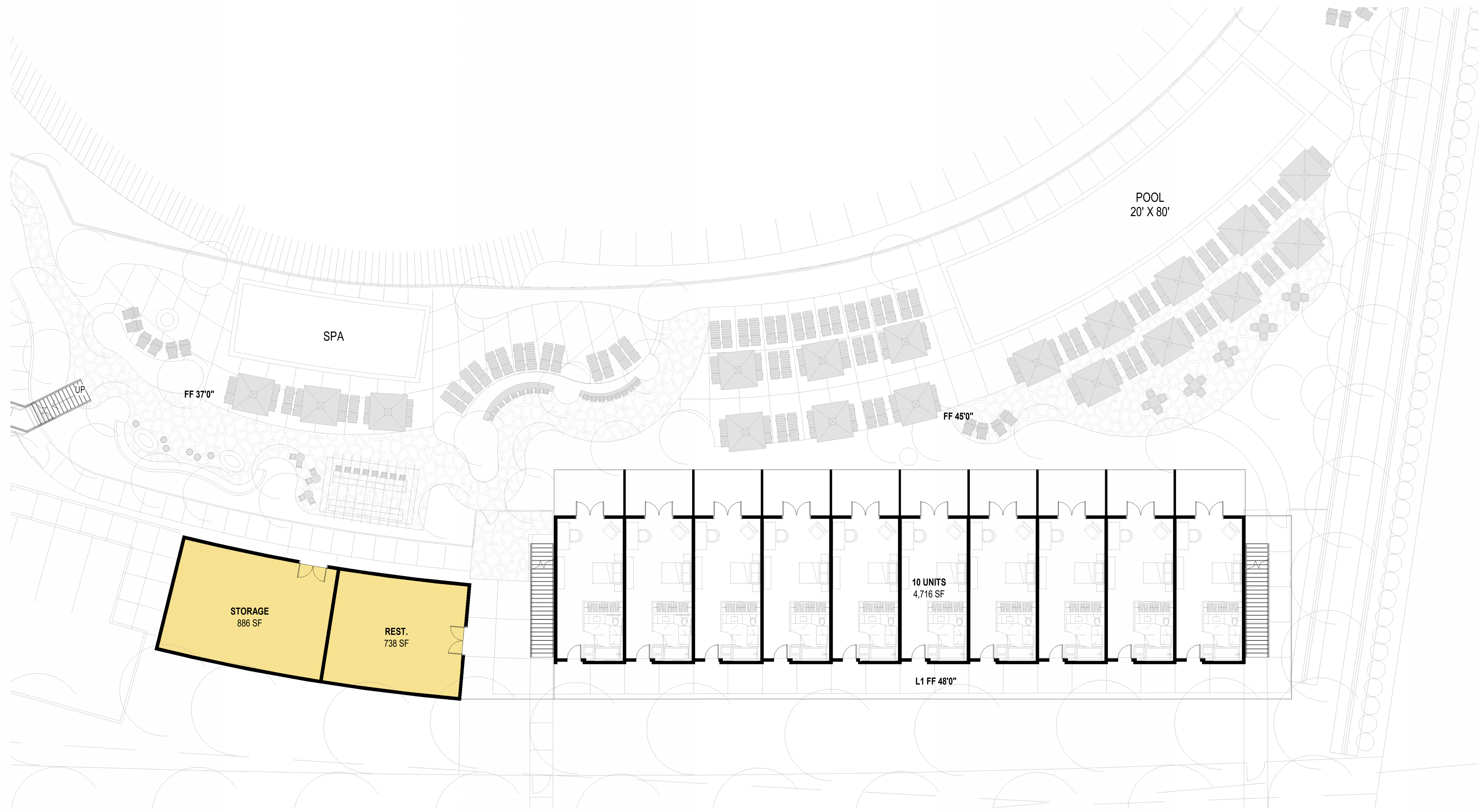
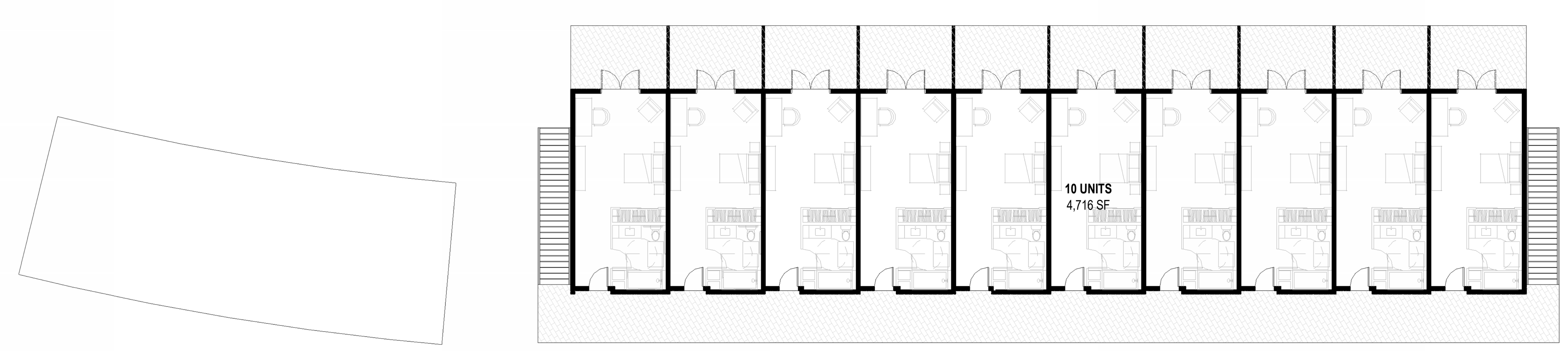


LEVEL 1



LEVEL 2

** 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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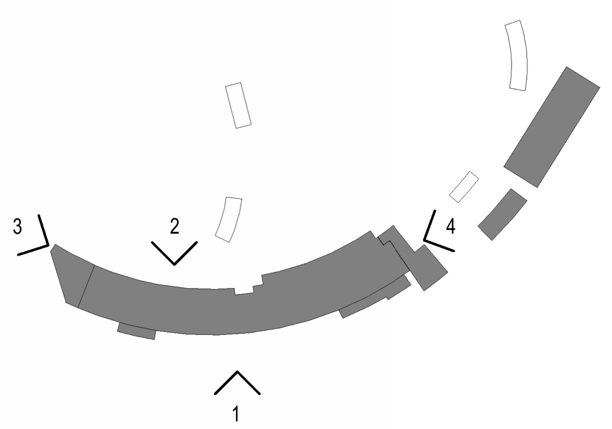
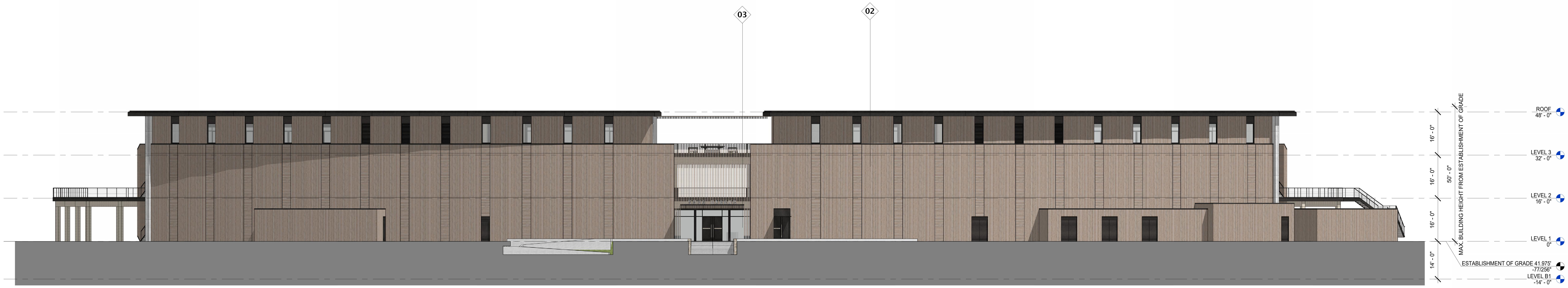
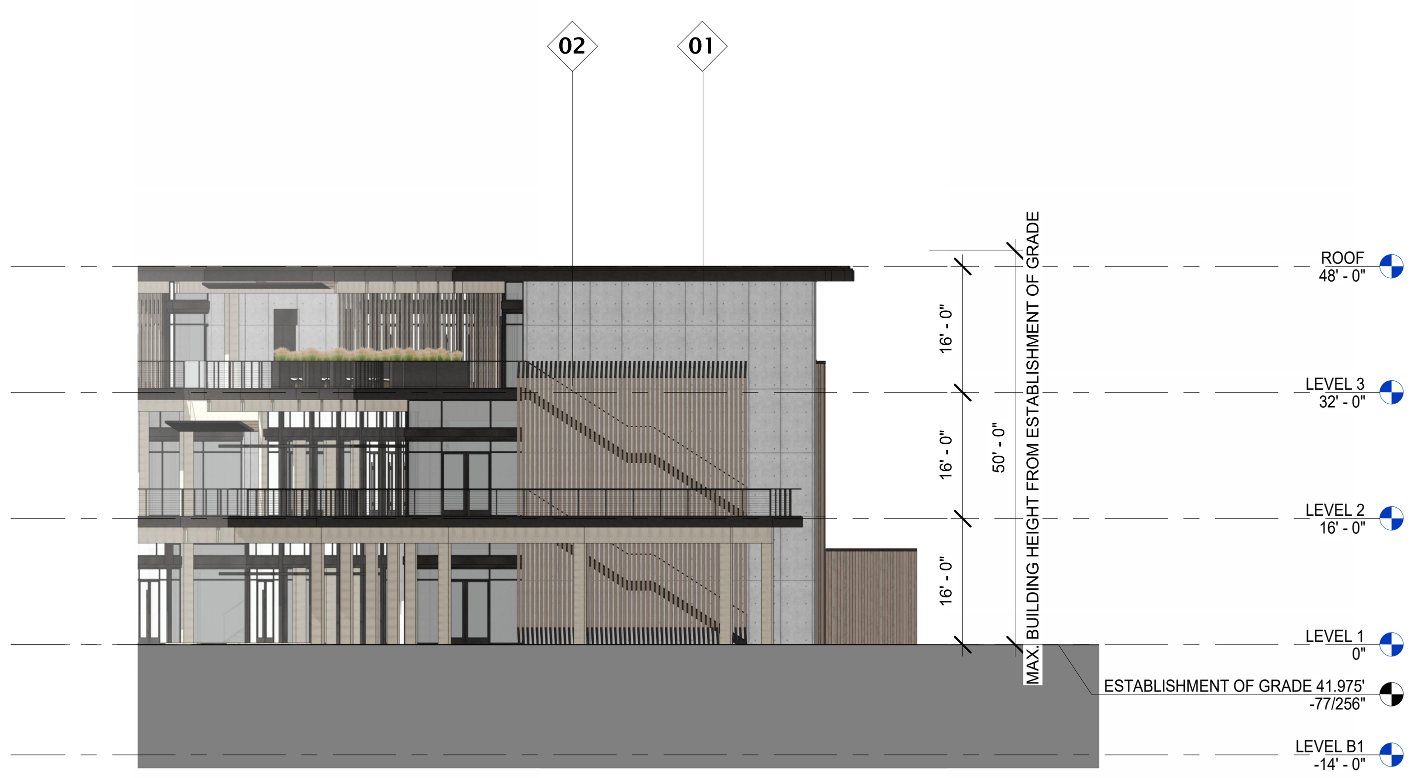


- 01 CONCRETE
- 02 WOOD PANEL
- 03 GLASS STOREFRONT
- 04 GLASS ROLL-UP DOOR
- 05 METAL RAILING
- 06 HEAVY TIMBER COLUMN & BEAM

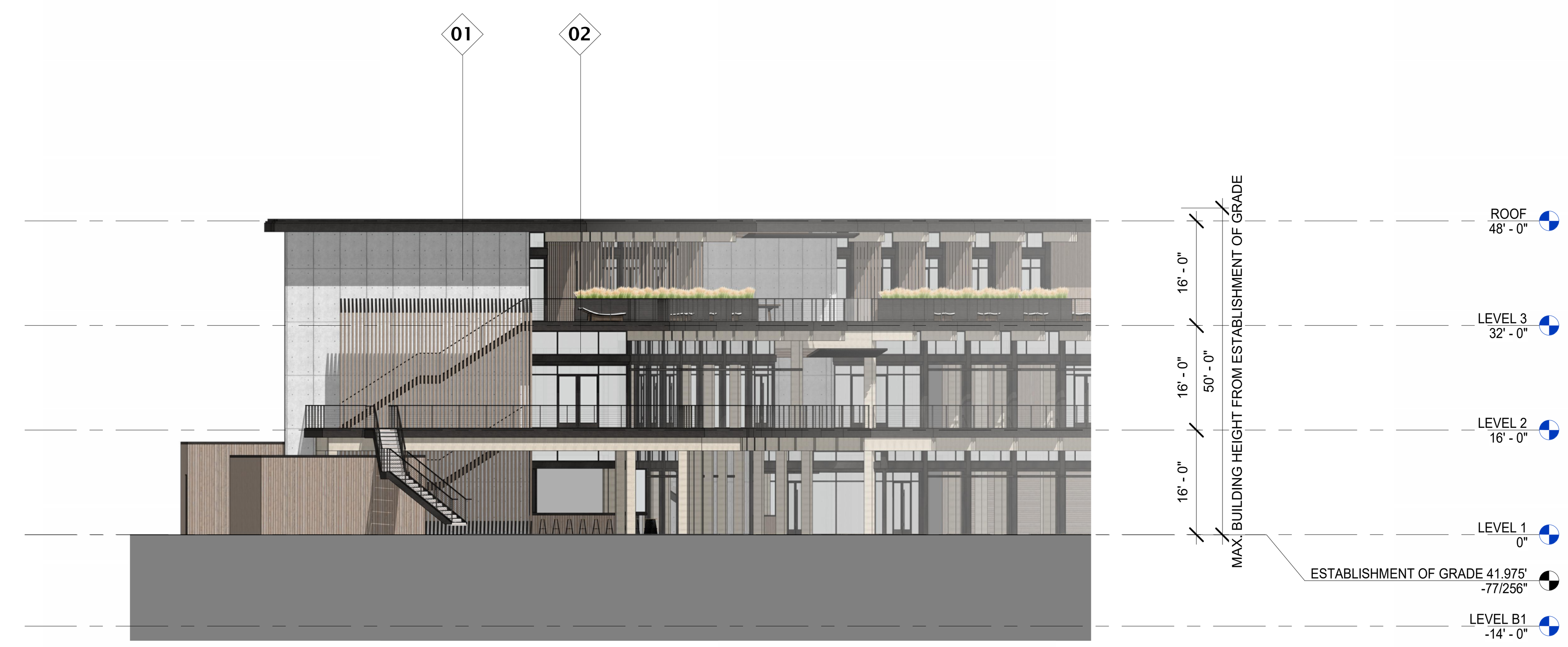


CLUBHOUSE BUILDING ELEVATION - 1

CLUBHOUSE BUILDING ELEVATION - 2



CLUBHOUSE BUILDING ELEVATION - 3



CLUBHOUSE BUILDING ELEVATION - 4

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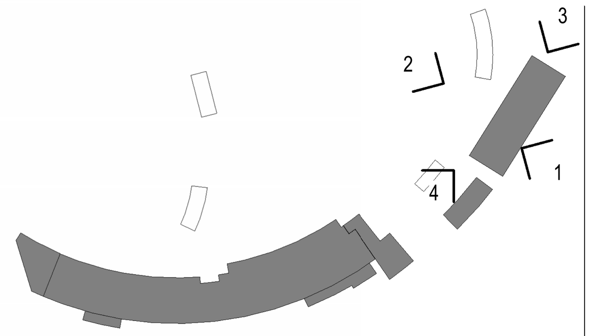


01 CONCRETE

02 WOOD PANEL

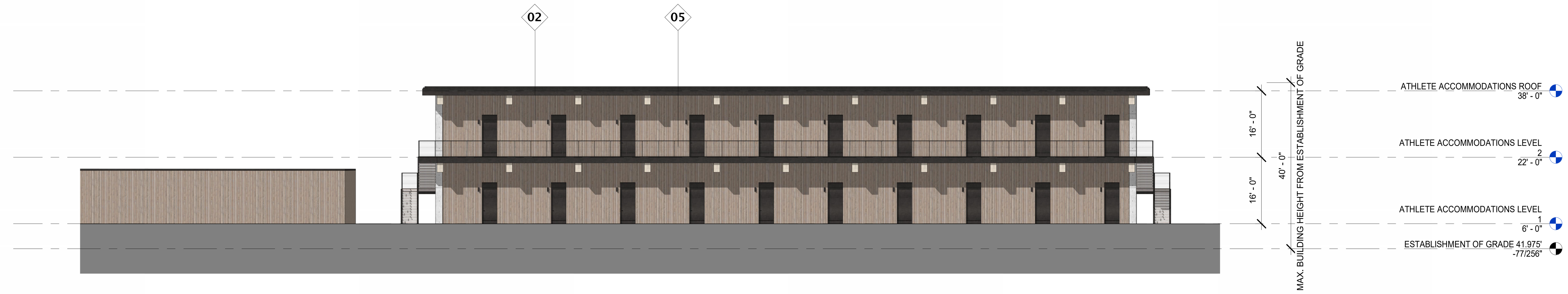
03 GLASS STOREFRONT

04 GLASS ROLL-UP DOOR

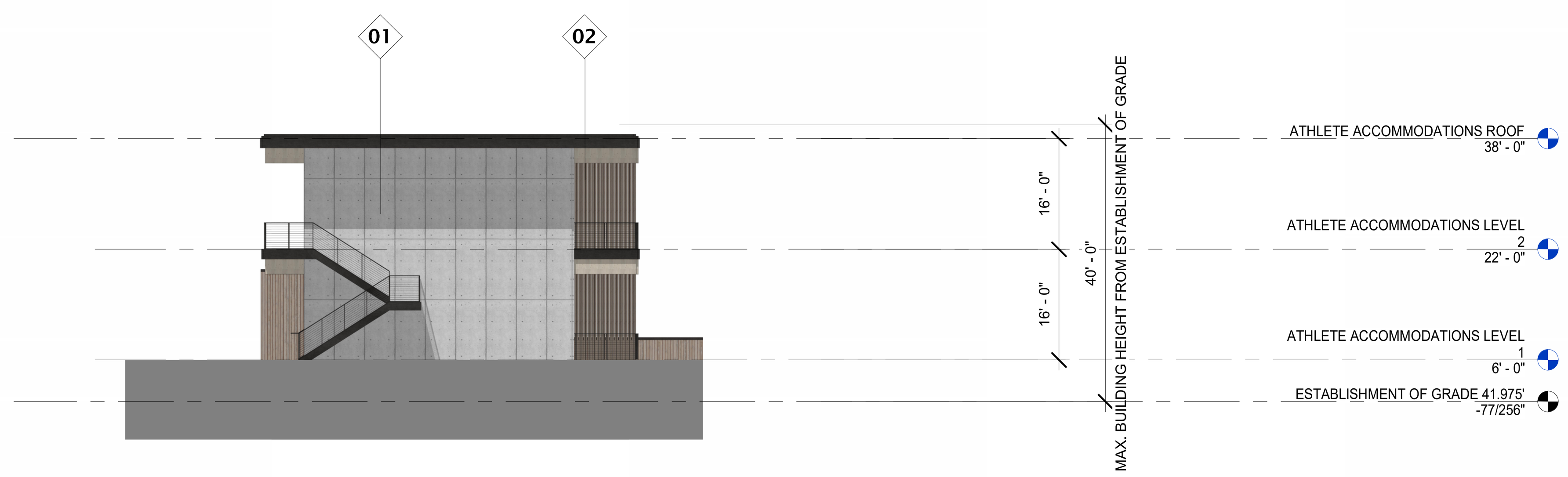
05 METAL RAILING

06 HEAVY TIMBER COLUMN & BEAM

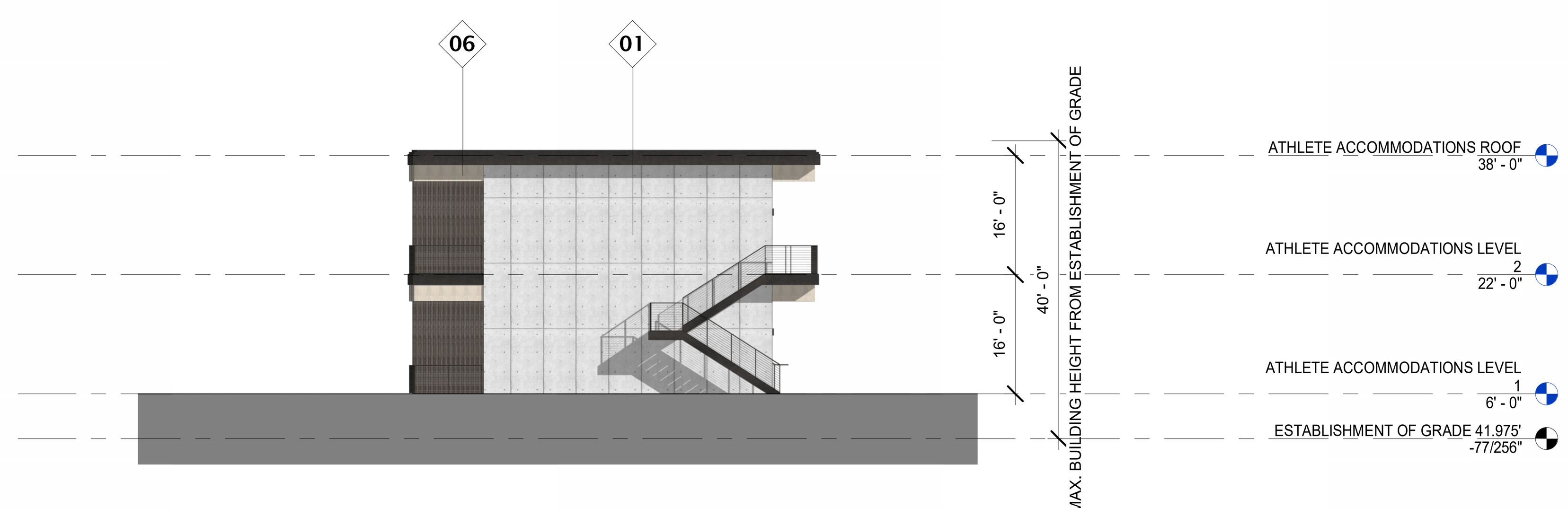
ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 1



ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 2



ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 3



ATHLETE ACCOMMODATIONS BUILDING ELEVATION - 4

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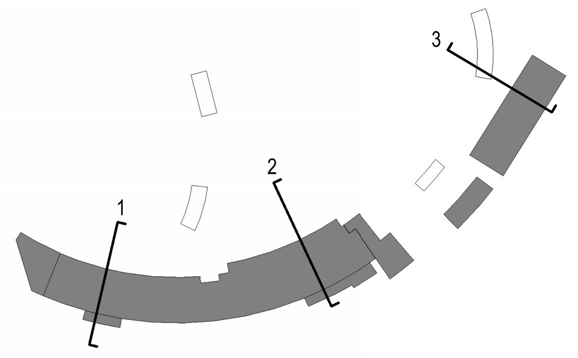
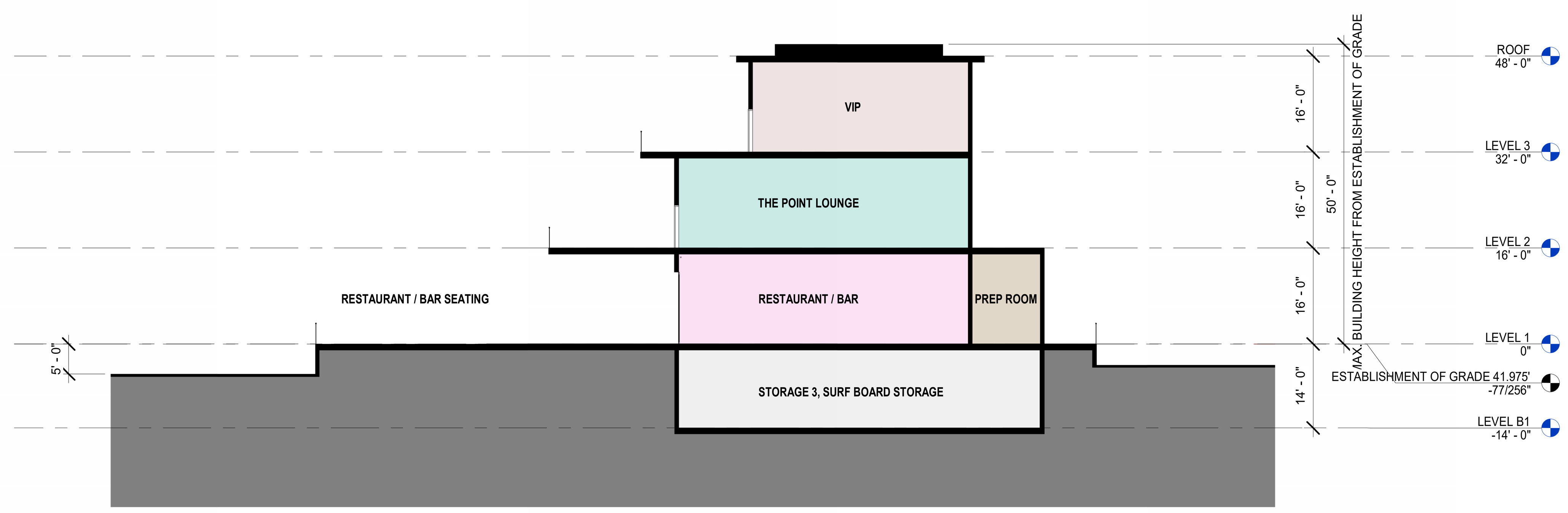
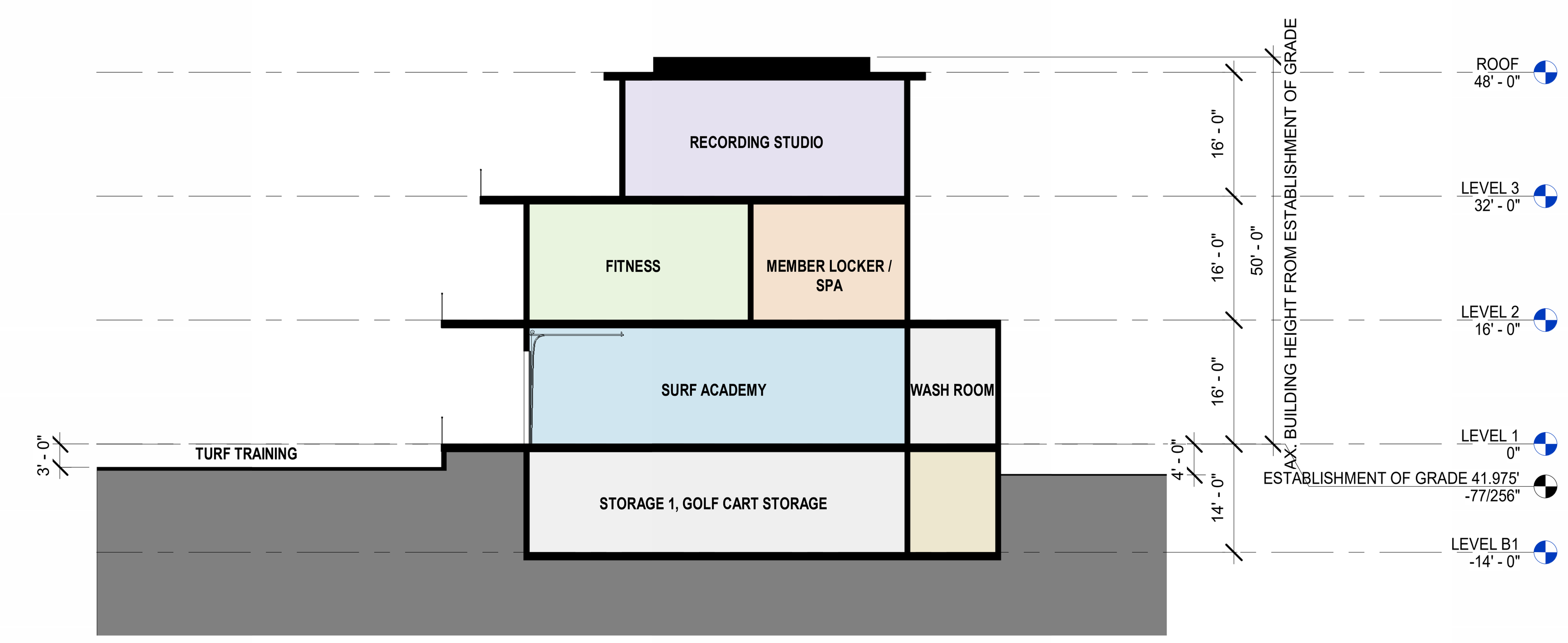
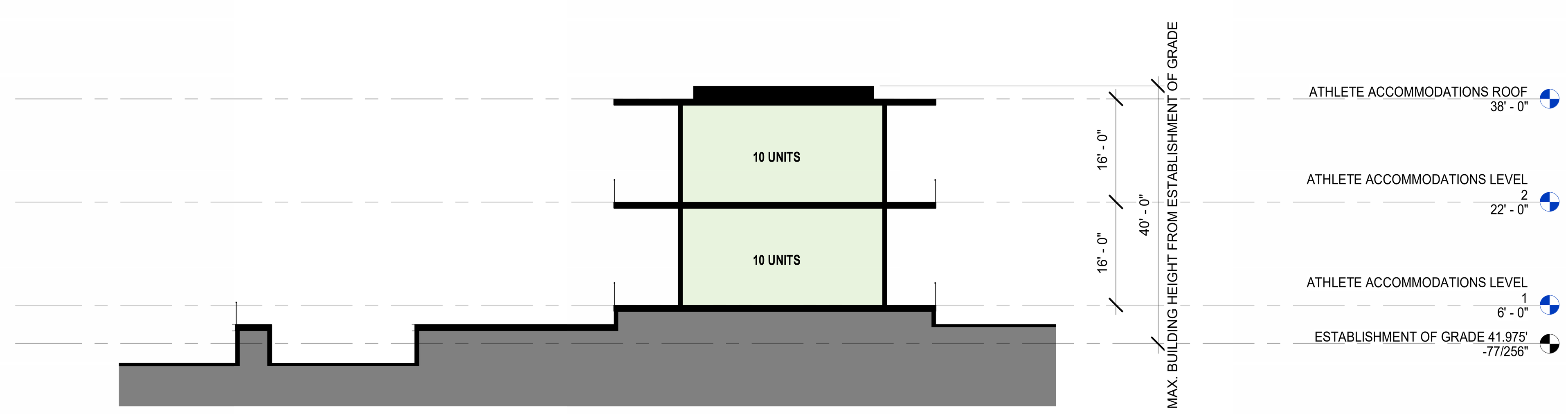




2 CLUBHOUSE BUILDING SECTION - 2



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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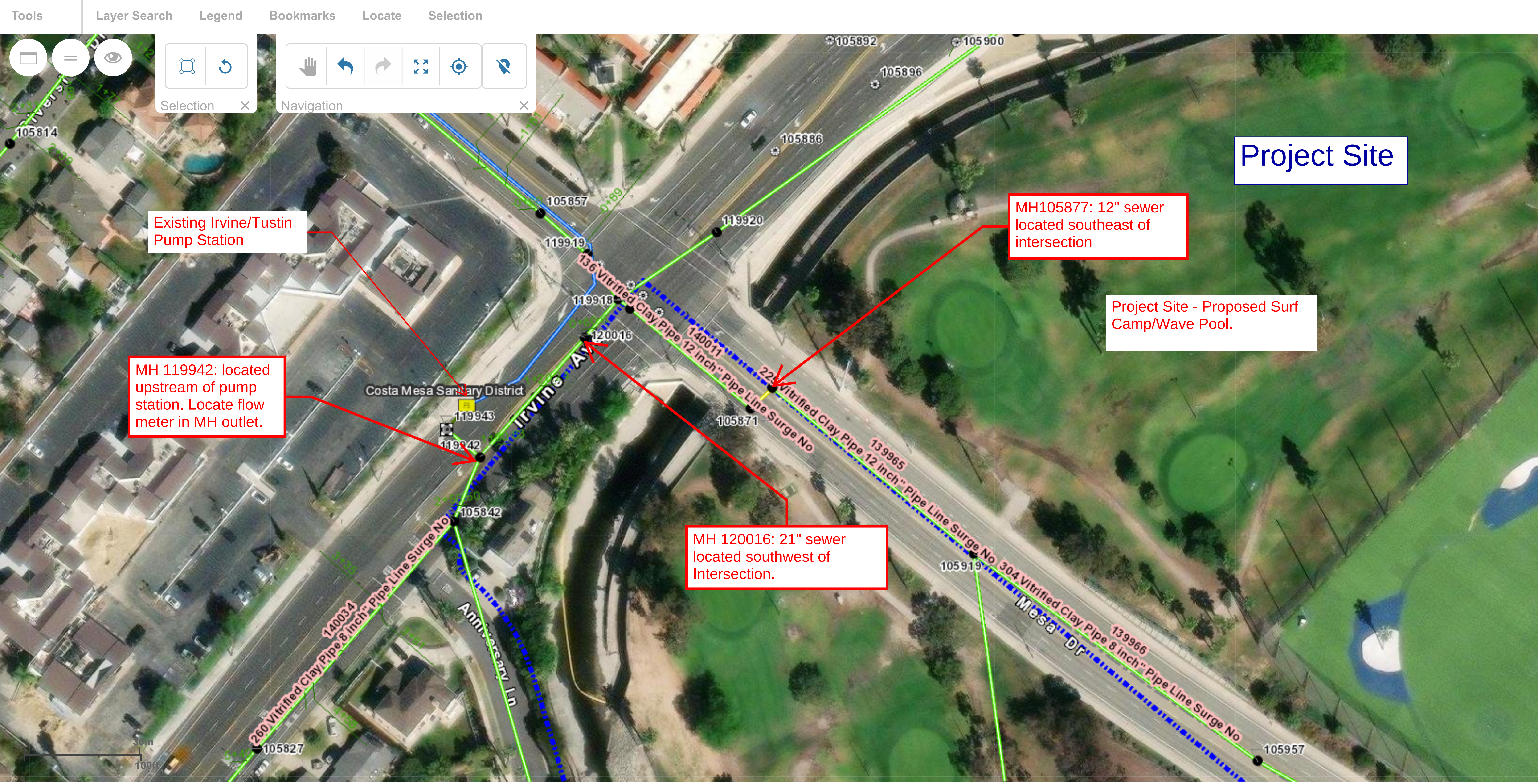
A4.0
BUILDING PERSPECTIVE

12/23/2024

Appendix 2

Public Sewer Exhibits

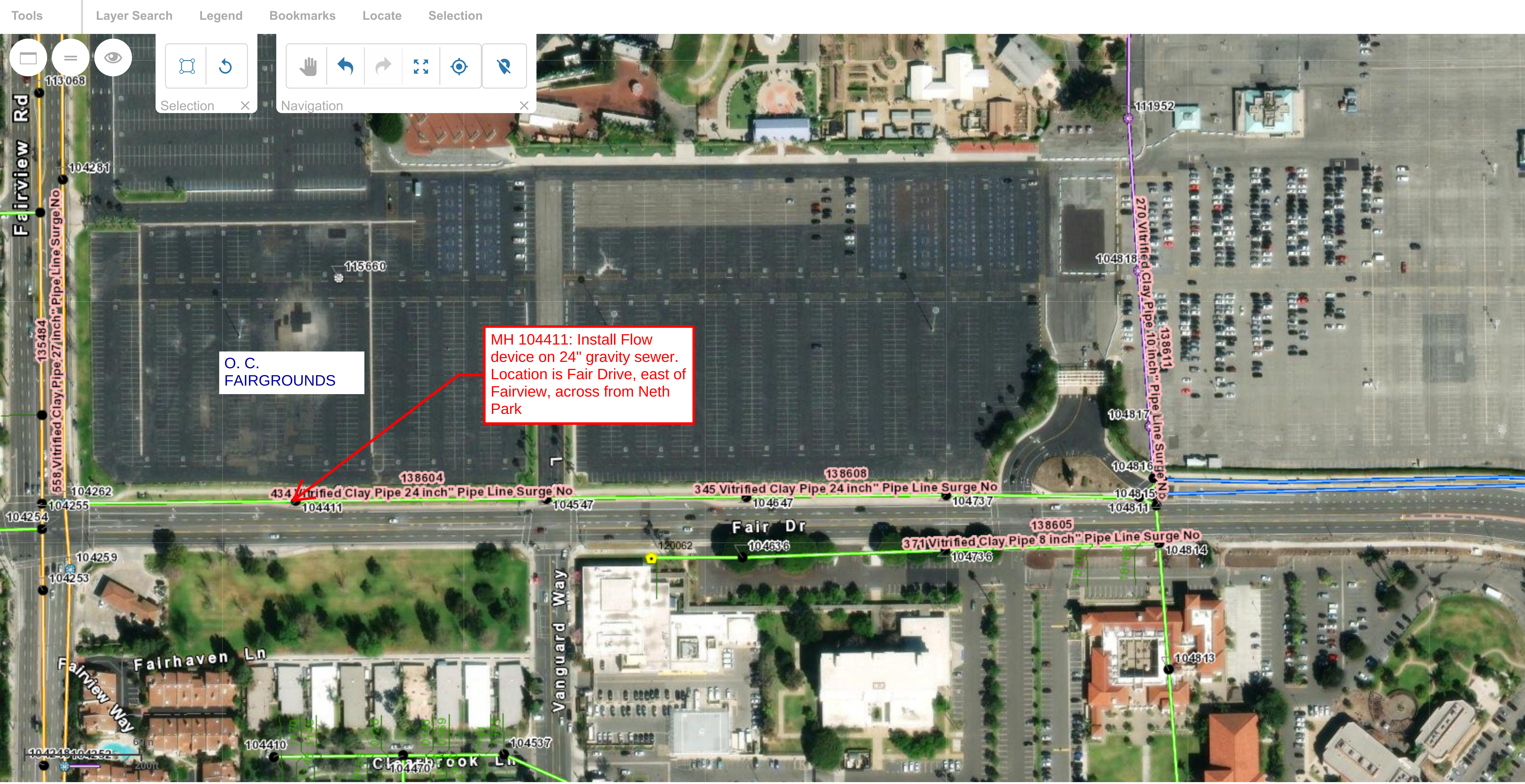
Snug Harbor
CMSD Sewer System
(no scale)



N
(no scale)

Snug Harbor
CMSD Sewer System

MH MONITORING LOCATIONS



N
(no scale)

Snug Harbor
CMSD Sewer System

MH MONITORING
LOCATIONS

Appendix 3.1

Sewer Pipeline As-Built Plans

COSTA MESA SANITARY DISTRICT

PROJECT NO. 1112100-128

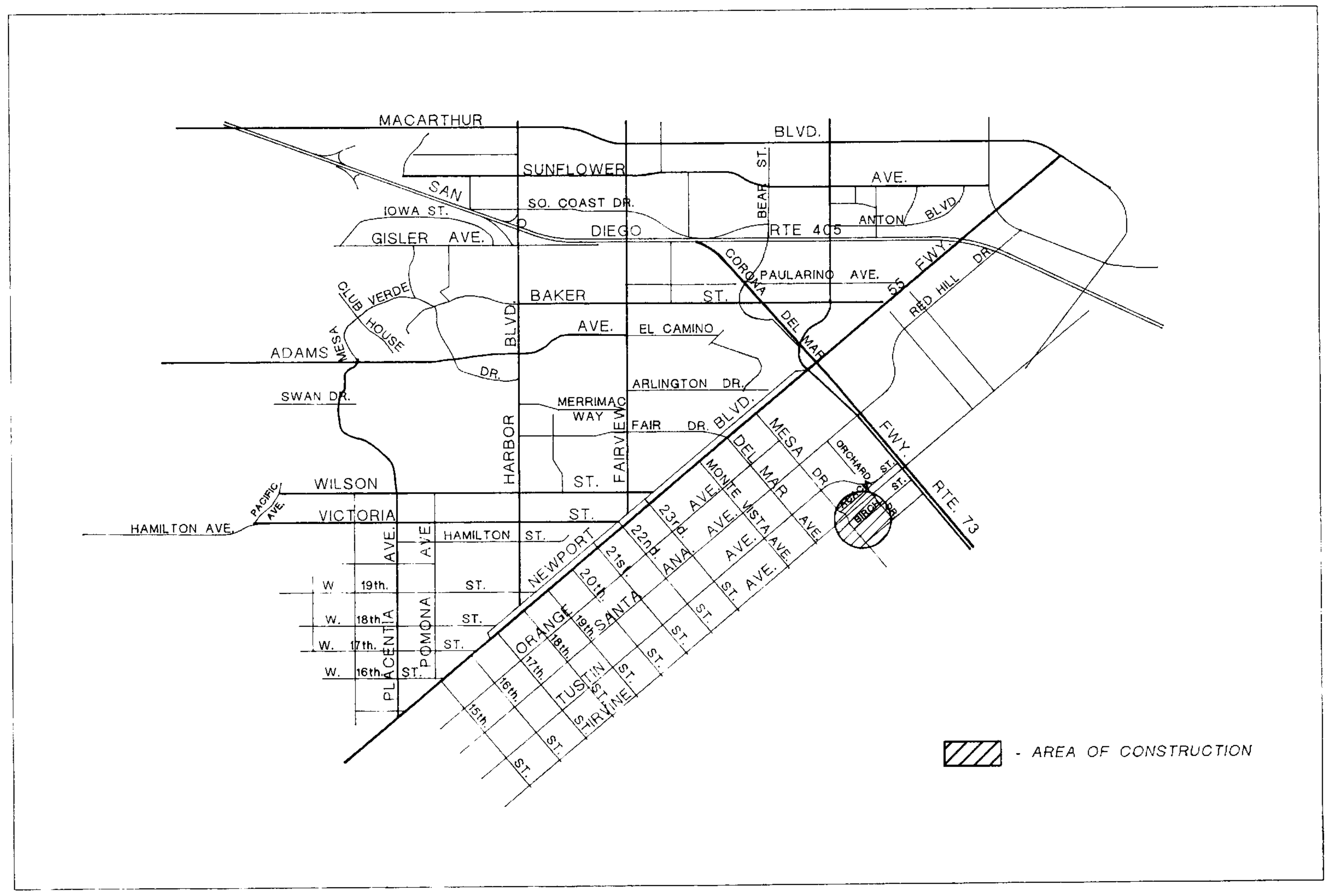
PLANS FOR RECONSTRUCTING MESA/BIRCH SEWER LINES IN THE UNINCORPORATED TERRITORY OF ORANGE COUNTY.

CONSTRUCTION NOTES

NO.	ITEM	UNIT	QUANTITY
1.	CONSTRUCT 12" V.C.P. SEWER	L.F.	240
2.	CONSTRUCT 8" V.C.P. SEWER	L.F.	986
3.	CONSTRUCT SEWER MANHOLE PER CMSD STD. S-100.	EA.	3
4.	POTHOLE SEWER LATERAL BETWEEN OLD R/W & NEW R/W.	EA.	56
	A. IF EXIST. LATERAL ELEVATION CONFLICTS WITH NEW STREET ELEV., LOWER LATERAL AS DIRECTED BY CMSD INSPECTOR.	EA.	37
	B. REPLACE ALL 4" LATERAL BETWEEN OLD R/W AND NEW R/W WITH 6" VCP.	EA	56
5.	MANHOLE REHABILITATION, REPAIR AND COATING	EA.	4
6.	ADJUST EXIST. SEWER MANHOLE TO GRADE	EA.	7
7.	CUT AND PLUG EXIST. SEWER LINE	L.S.	L.S.
8.	REMOVE MANHOLE AND BACKFILL PER OCEMA REQUIREMENTS	EA.	4
9.	ABANDON EXIST. 8" VCP SEWER	L.S.	L.S.
10.	RECHANNEL MANHOLE BOTTOM.	EA.	5
11.	CONNECT EXIST. 6" SEWER LATERAL TO NEW SEWER.	EA.	1
12.	RECONSTRUCT EXIST. MANHOLE. INSTALL NEW PRECAST SECTIONS.	EA.	7
13.	COAT RAISED PORTION OF MANHOLE PER SPECS.	EA.	1

GENERAL NOTES

1. THE SEWER SYSTEM SHALL CONFORM TO THE STANDARDS OF THE COSTA MESA SANITARY DISTRICT.
2. CONTRACTOR SHALL REQUEST INSPECTION FROM THE OFFICE OF THE DISTRICT ENGINEER 48 HOURS PRIOR TO COMMENCEMENT OF WORK. (714) 631-1731.
3. ANY WORK PERFORMED WITHOUT INSPECTION FROM THE DISTRICT SHALL BE CONSIDERED UNACCEPTABLE.
4. CONTRACTOR SHALL OBTAIN C.M.S.D. SEWER PERMIT PRIOR TO COMMENCEMENT OF WORK FROM THE DEPT. OF STREETS AND SANITATION, CITY OF COSTA MESA, 77 FAIR DRIVE. (714) 754-5323.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS THAT MAY BE REQUIRED FROM THE LOCAL GOVERNING AGENCY.
6. CONTRACTOR TO HAVE A COPY OF APPROVED SEWER PLAN AND C.M.S.D. STANDARD PLANS AND SPECIFICATIONS ON JOB SITE AT ALL TIMES.
7. CLAY PIPE JOINTS SHALL BE TYPE "G" MECHANICAL COMPRESSION JOINTS FOR MAIN LINE SEWER. TYPE "D" JOINTS, BAND-SEAL OR APPROVED EQUAL, ARE APPROVED FOR LATERALS AND REPAIR WORK ONLY.
8. 6" LATERALS SHALL BE CONSTRUCTED FROM THE SEWER MAIN TO EVERY LOT.
9. ALL LATERALS SHALL BE CONSTRUCTED PRIOR TO SURFACING OF STREETS.
10. STAMP "S" ON CURB AT SEWER LATERAL LOCATIONS.
11. SEWER MAIN SHALL BE AIR OR WATER TESTED MEETING DISTRICT ENGINEER'S APPROVAL.
12. PRIOR TO ASPHALT CONCRETE PAVING, MANHOLE FRAMES AND COVERS SHALL BE LEFT 6" BELOW FINISH GRADE. AFTER STREET SURFACING IS COMPLETED, FRAMES AND COVERS SHALL BE RAISED TO GRADE PER STD. DWG. NO. S-105.
13. SEWER MANHOLE FRAME AND COVER SHALL BE ALHAMBRA FOUNDRY A-1270, OR APPROVED EQUAL. COVER TO BE STAMPED 'SEWER'.
14. SEWER MAIN SHALL BE BALLED AFTER ALL MANHOLE FRAMES AND COVERS HAVE BEEN RAISED TO GRADE.
15. PVC PIPE MAY BE USED ONLY WITH PRIOR APPROVAL FROM THE DISTRICT ENGINEER.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING WARNING DEVICES, FLASHING ARROW BOARDS, LIGHTS AND FLAGMEN IN ACCORDANCE WITH "WORK AREA TRAFFIC CONTROL HANDBOOK" PUBLISHED BY BUILDING NEWS, INC., LATEST EDITION.



LOCATION MAP

NOTICE TO CONTRACTORS

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN ON OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT ALL PERSONS ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF INDUSTRIAL SAFETY AND HEALTH, "CONSTRUCTION SAFETY ORDERS." THE DISTRICT ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTOR'S AND SUBCONTRACTOR'S COMPLIANCE WITH THESE ORDERS.

CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE COSTA MESA SANITARY DISTRICT AND THE DISTRICT ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE COSTA MESA SANITARY DISTRICT, OR THE DISTRICT ENGINEER.

THE EXISTENCE, APPROXIMATE LOCATION AND EXTENT OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN HEREON HAVE BEEN OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN. IF THE CONTRACTOR, WHILE PERFORMING THE CONTRACT, DISCOVERS UTILITY FACILITIES NOT SHOWN HEREON, HE SHALL IMMEDIATELY NOTIFY THE DISTRICT ENGINEER IN WRITING.

Re-Alignment

Title Sheet

REGISTERED PROFESSIONAL ENGINEER ROBIN B. HAMERS NO. RCE 31720 EXP. 12/31/96 CIVIL STATE OF CALIFORNIA

DR. 7 (16512)
Sheet 73 Of 91

UTILITIES:

Undeground Service Alert
CALL: TOLL FREE
1-800-422-4133
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS		
NO.	DATE	DESCRIPTION

COSTA MESA SANITARY DISTRICT
ENGINEER:
ROBIN B. HAMERS R.C.E. 31720
9/1/95
DATE

COSTA MESA SANITARY DISTRICT
PROJECT NO. 1112100-128
MESA/BIRCH SEWER

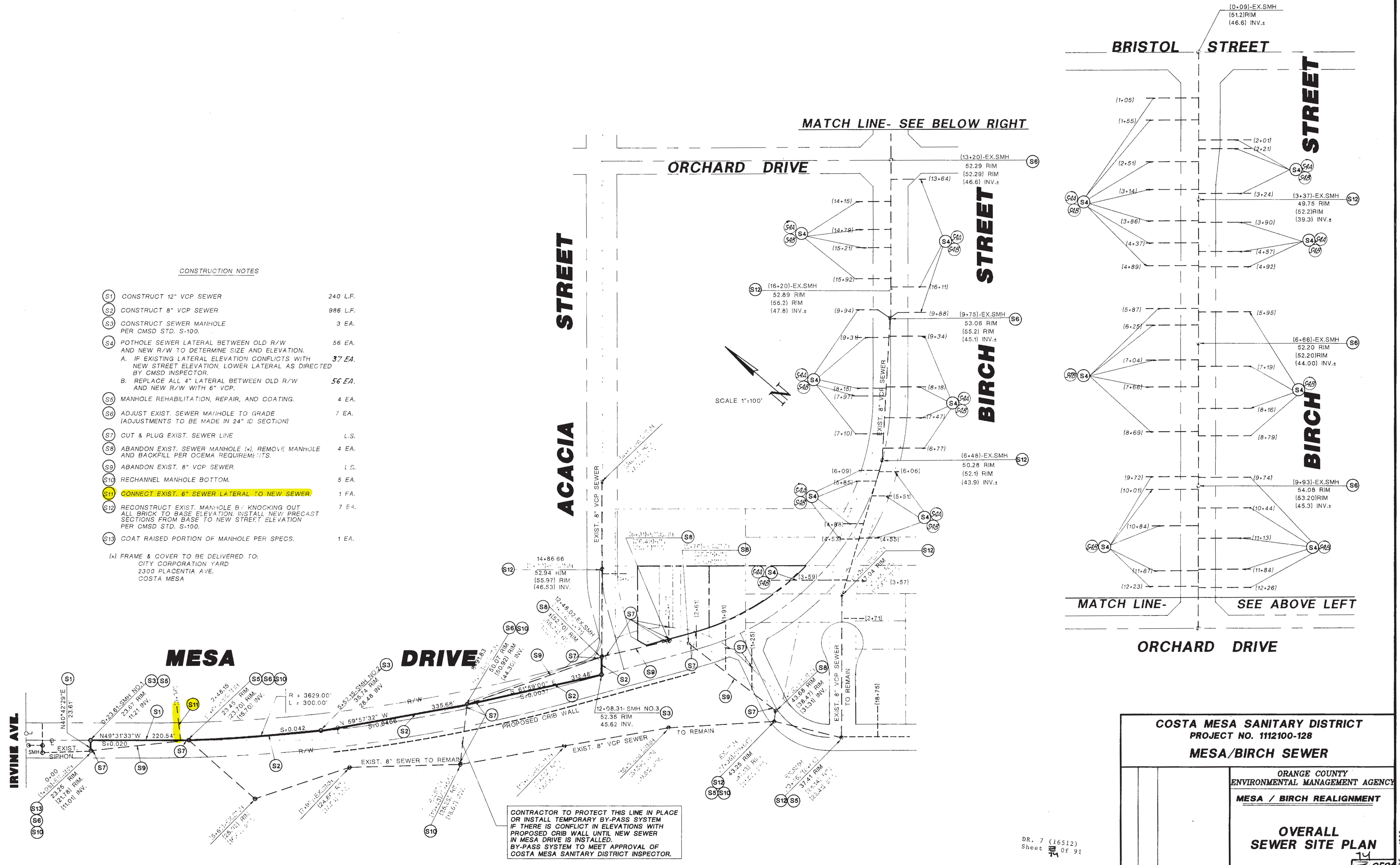
ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY
MESA / BIRCH REALIGNMENT
TITLE SHEET
73 OF 91

MARK	DATE	DESCRIPTION
REVISIONS		

DESIGNED :
DRAWN : CHECKED :
PREPARED UNDER SUPERVISION OF RCE DATE
SCALE AS SHOWN DATE DRAWING NO.
SHEET S1 OF 4

09/06/95 1281

DR. 7 (16512) Sheet 73/91
R-5838-S



CONSTRUCTION NOTES

S1	CONSTRUCT 12" VCP SEWER	240 L.F.
S2	CONSTRUCT 8" VCP SEWER	986 L.F.
S3	CONSTRUCT SEWER MANHOLE PER CMSD STD. S-100.	3 EA.
S4	POTHOLE SEWER LATERAL BETWEEN OLD R/W AND NEW R/W TO DETERMINE SIZE AND ELEVATION.	56 EA.
	A. IF EXISTING LATERAL ELEVATION CONFLICTS WITH NEW STREET ELEVATION, LOWER LATERAL AS DIRECTED BY CMSD INSPECTOR.	37 EA.
	B. REPLACE ALL 4" LATERAL BETWEEN OLD R/W AND NEW R/W WITH 6" VCP.	56 EA.
S5	MANHOLE REHABILITATION, REPAIR, AND COATING.	4 EA.
S6	ADJUST EXIST. SEWER MANHOLE TO GRADE (ADJUSTMENTS TO BE MADE IN 24" ID SECTION)	7 EA.
S7	CUT & PLUG EXIST. SEWER LINE	L.S.
S8	ABANDON EXIST. SEWER MANHOLE (x), REMOVE MANHOLE AND BACKFILL PER OCEMA REQUIREMENTS.	4 EA.
S9	ABANDON EXIST. 8" VCP SEWER.	L.S.
S10	RECHANNEL MANHOLE BOTTOM.	5 EA.
S11	CONNECT EXIST. 6" SEWER LATERAL TO NEW SEWER.	1 EA.
S12	RECONSTRUCT EXIST. MANHOLE BY KNOCKING OUT ALL BRICK TO BASE ELEVATION. INSTALL NEW PRECAST SECTIONS FROM BASE TO NEW STREET ELEVATION PER CMSD STD. S-100.	7 EA.
S13	COAT RAISED PORTION OF MANHOLE PER SPECS.	1 EA.

(x) FRAME & COVER TO BE DELIVERED TO:
CITY CORPORATION YARD
2300 PLACENTIA AVE.
COSTA MESA

CONTRACTOR TO PROTECT THIS LINE IN PLACE OR INSTALL TEMPORARY BY-PASS SYSTEM IF THERE IS CONFLICT IN ELEVATIONS WITH PROPOSED CRIB WALL UNTIL NEW SEWER IN MESA DRIVE IS INSTALLED. BY-PASS SYSTEM TO MEET APPROVAL OF COSTA MESA SANITARY DISTRICT INSPECTOR.

OVERALL SEWER SITE PLAN

SEE SHEETS S3 AND S4 FOR PLAN AND PROFILE

DR. 7 (16512)
Sheet 74 Of 91

COSTA MESA SANITARY DISTRICT
PROJECT NO. 1112100-128
MESA/BIRCH SEWER

ORANGE COUNTY
ENVIRONMENTAL MANAGEMENT AGENCY

MESA / BIRCH REALIGNMENT

OVERALL SEWER SITE PLAN

~~72~~ 74 OF 91

MARK	DATE	DESCRIPTION
REVISIONS		

DESIGNED :
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SCALE AS SHOWN | DATE | DRAWING NO.

SHEET S2 OF 4

PLOT 09/06/95 1282

DR 7 (16512) sheet 74/91
R-5838-S

Re-Alignment

Site Plan

CONSTRUCTION NOTES

- S1 CONSTRUCT 12" VCP SEWER
- S2 CONSTRUCT 8" VCP SEWER
- S3 CONSTRUCT SEWER MANHOLE PER CMSD STD. S-100.
- S5 COAT INSIDE MANHOLE PER SPECS
- S6 ADJUST EXIST. SEWER MANHOLE TO GRADE (ADJUSTMENTS TO BE MADE IN 24" ID SECTION)
- S7 CUT & PLUG EXIST. SEWER LINE
- S9 ABANDON EXIST. 8" VCP SEWER
- S10 RECHANNEL MANHOLE BOTTOM.
- S11 CONNECT EXIST. 6" SEWER LATERAL TO NEW SEWER.
- S14 COAT RAISED PORTION OF MANHOLE PER SPECS.

UTILITIES

- A. SOUTHERN CALIFORNIA EDISON CO.
- B. PACIFIC BELL.
- C. SOUTHERN CALIFORNIA GAS CO.
- D. CITY OF NEWPORT BEACH.
- E. SANTA ANA HEIGHTS WATER CO.
- F. COMMUNITY CABLE.
- G. METROPOLITAN WATER DISTRICT
- H. COSTA MESA SANITARY DISTRICT

CURVE TABLE

I.D.	RADIUS	DEFLECTION	LENGTH	TANGENT
A	35.00	90°01'39"	54.99	35.02
B	35.00	86°02'04"	52.56	32.66
C	3595.00	15°11'39"	953.36	479.49
D	3629.00	15°11'39"	962.38	484.03
E	3663.00	15°11'39"	971.39	488.56

COSTA MESA SANITARY DISTRICT
PROJECT NO. 1112100-128
MESA/BIRCH SEWER

ORANGE COUNTY ENVIRONMENTAL MANAGEMENT AGENCY
MESA / BIRCH REALIGNMENT

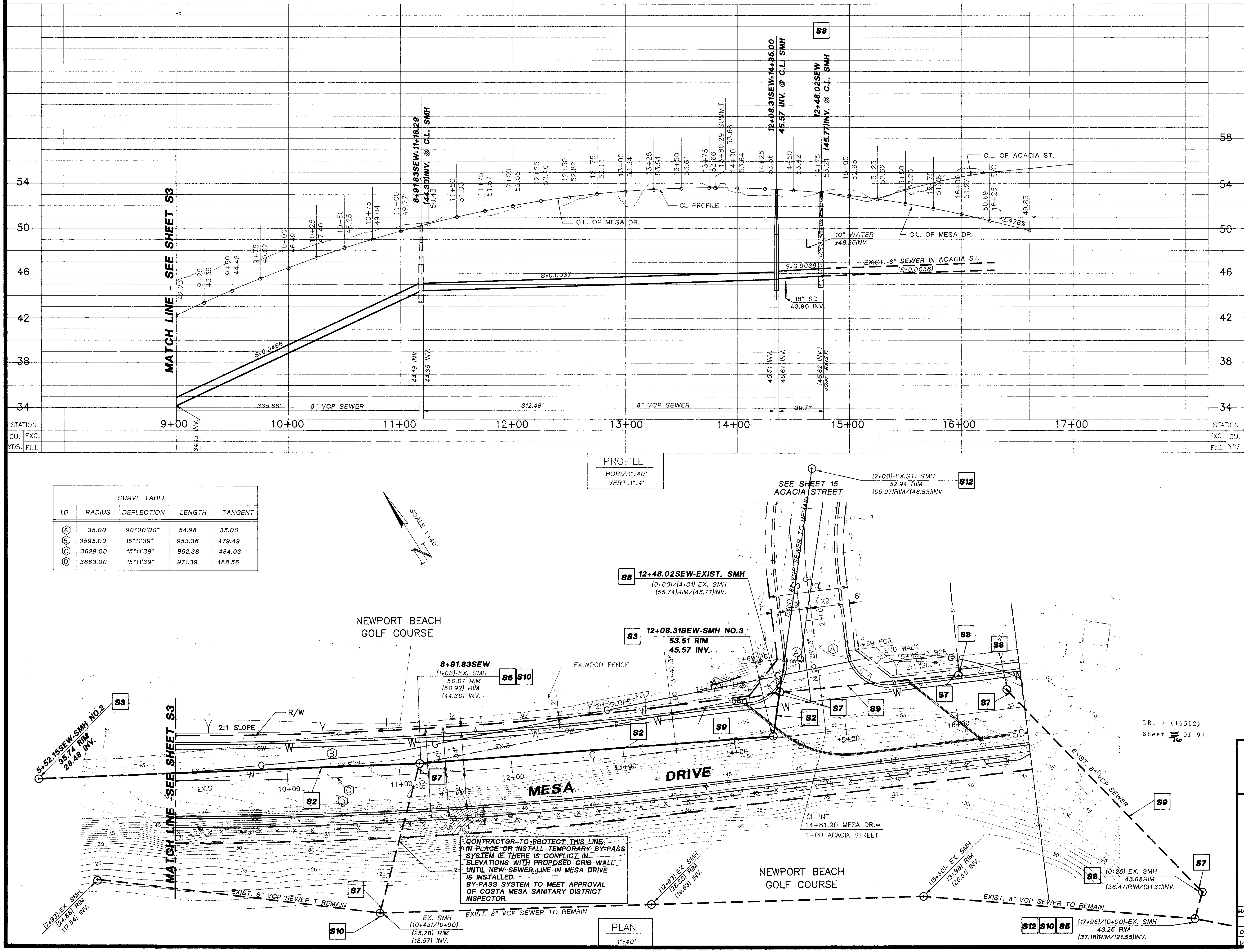
MESA DRIVE SEWER PLAN AND PROFILE

SHEET S3 OF 4

75 OF 91

DR. 7 (16512) Sheet 75 of 91

DR 7 (16512) 75/91 R-5838-5



CURVE TABLE

I.D.	RADIUS	DEFLECTION	LENGTH	TANGENT
A	35.00	90°00'00"	54.98	35.00
B	3595.00	15°11'39"	953.36	479.49
C	3629.00	15°11'39"	962.38	484.03
D	3663.00	15°11'39"	971.39	488.56

CONSTRUCTION NOTES

- S2 CONSTRUCT 8" VCP SEWER
- S3 CONSTRUCT SEWER MANHOLE PER CMSD STD. S-100.
- S5 COAT INSIDE MANHOLE PER SPECS.
- S6 ADJUST EXIST. SEWER MANHOLE TO GRADE (ADJUSTMENTS TO BE MADE IN 24" ID SECTION)
- S7 CUT & PLUG EXIST. SEWER LINE
- S8 ABANDON EXIST. SEWER MANHOLE(*). REMOVE MANHOLE AND BACKFILL PER OCEMA REQUIREMENTS.
- S9 ABANDON EXIST. 8" VCP SEWER.
- S10 RECHANNEL MANHOLE BOTTOM.
- S12 RECONSTRUCT EXIST. MANHOLE BY KNOCKING OUT ALL BRICK TO BASE ELEVATION. INSTALL NEW PRECAST SECTIONS FROM BASE TO NEW STREET ELEVATION PER CMSD STD. S-100.

(*) FRAME & COVER TO BE DELIVERED TO CITY CORPORATION YARD 2300 PLACENTIA AVE., COSTA MESA.

UTILITIES

- A. SOUTHERN CALIFORNIA EDISON CO.
- B. PACIFIC BELL.
- C. SOUTHERN CALIFORNIA GAS CO.
- D. CITY OF NEWPORT BEACH.
- E. SANTA ANA HEIGHTS WATER CO.
- F. COMMUNITY CABLE.
- G. METROPOLITAN WATER DISTRICT
- H. COSTA MESA SANITARY DISTRICT

1 ? 0 1 2

3 INCHES ON ORIGINAL DRAWING

DR. 7 (16512)
Sheet 76 of 91

COSTA MESA SANITARY DISTRICT
PROJECT NO. 1112100-128

MESA/BIRCH SEWER

ORANGE COUNTY
ENVIRONMENTAL MANAGEMENT AGENCY

MESA / BIRCH REALIGNMENT

MESA DRIVE SEWER
PLAN AND PROFILE

76 OF 91

MARK	DATE	DESCRIPTION
REVISIONS		

DESIGNED :
DRAWN :
CHECKED :

PREPARED UNDER SUPERVISION OF :
RCE DATE
SCALE AS SHOWN | DATE | DRAWING NO.

SHEET S4 OF 4

01/31/94 1284

Re-Alignment

Mesa Dr. Sewer

DR. 7(16512) R-5838-3 Sheet 76/91

CITY OF NEWPORT BEACH

PUBLIC WORKS DEPARTMENT

COSTA MESA SANITARY DISTRICT

IRVINE RANCH WATER DISTRICT

IRVINE AVENUE WATER AND SEWER MAIN REPLACEMENT PROJECT

SEPTEMBER 2004

RECORD DRAWING

THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE BLOCK ONLY AND HAS BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER AND OWNERS(S) WILL NOT BE RESPONSIBLE FOR ANY ERROR(S) OR OMISSION(S) WHICH HAVE BEEN INCORPORATED INTO THIS DRAWING. ACTUAL CONDITIONS WILL VARY SOMEWHAT FROM THE CONDITIONS SHOWN HEREIN AND AT SOME LOCATIONS THE VARIANCE MAY BE LARGE. IF THE PRECISE LOCATION OF ANY FACILITY IS REQUIRED, THE FACILITY SHOULD BE FIELD LOCATED IN THE PRESENCE OF AN EMPLOYEE OF THE CITY / DISTRICT OR THE OWNER(S) OF THE UTILITIES INVOLVED.

C-3411

H:\N03\110\plans\dwg\RECORD DRAWINGS\CVRALL.dwg 01/17/06 8:54am PLOT AT 1=1 D-537

Water main Replacement

1/34

COSTA MESA SANITARY DISTRICT
INCORPORATED 1944

IRVINE AVENUE
SEWER MAIN REPLACEMENT

SEPTEMBER 2004

PROJECT NO. 168 PHASE I

APPROVED : ______________________________ DATE: __________
ROBIN B. HAMERS R.C.E. 31720
MANAGER/DISTRICT ENGINEER

PREPARED BY : ______________________________ DATE: 1/17/06
JOSEPH L. BOYLE R.C.E. 44497
PROJECT MANAGER

REGISTERED PROFESSIONAL ENGINEER
JOSEPH L. BOYLE
No. 44497
Exp. 3/31/06
CIVIL
STATE OF CALIFORNIA

DANIEL BOYLE ENGINEERING

Consulting Engineers
23231 South Pointe Drive, Suite 103
Laguna Hills, CA 92653 (949) 768-2600

RECORD DRAWING
THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE BLOCK ONLY AND HAS BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER AND OWNERS(S) WILL NOT BE RESPONSIBLE FOR ANY ERROR(S) OR OMISSION(S) WHICH HAVE BEEN INCORPORATED INTO THIS DRAWING. ACTUAL CONDITIONS WILL VARY SOMEWHAT FROM THE CONDITIONS SHOWN HEREIN AND AT SOME LOCATIONS THE VARIANCE MAY BE LARGE. IF THE PRECISE LOCATION OF ANY FACILITY IS REQUIRED, THE FACILITY SHOULD BE FIELD LOCATED IN THE PRESENCE OF AN EMPLOYEE OF THE CITY / DISTRICT OR THE OWNER(S) OF THE UTILITIES INVOLVED.

P-168-1	C-1
SHEET 12 OF 34	

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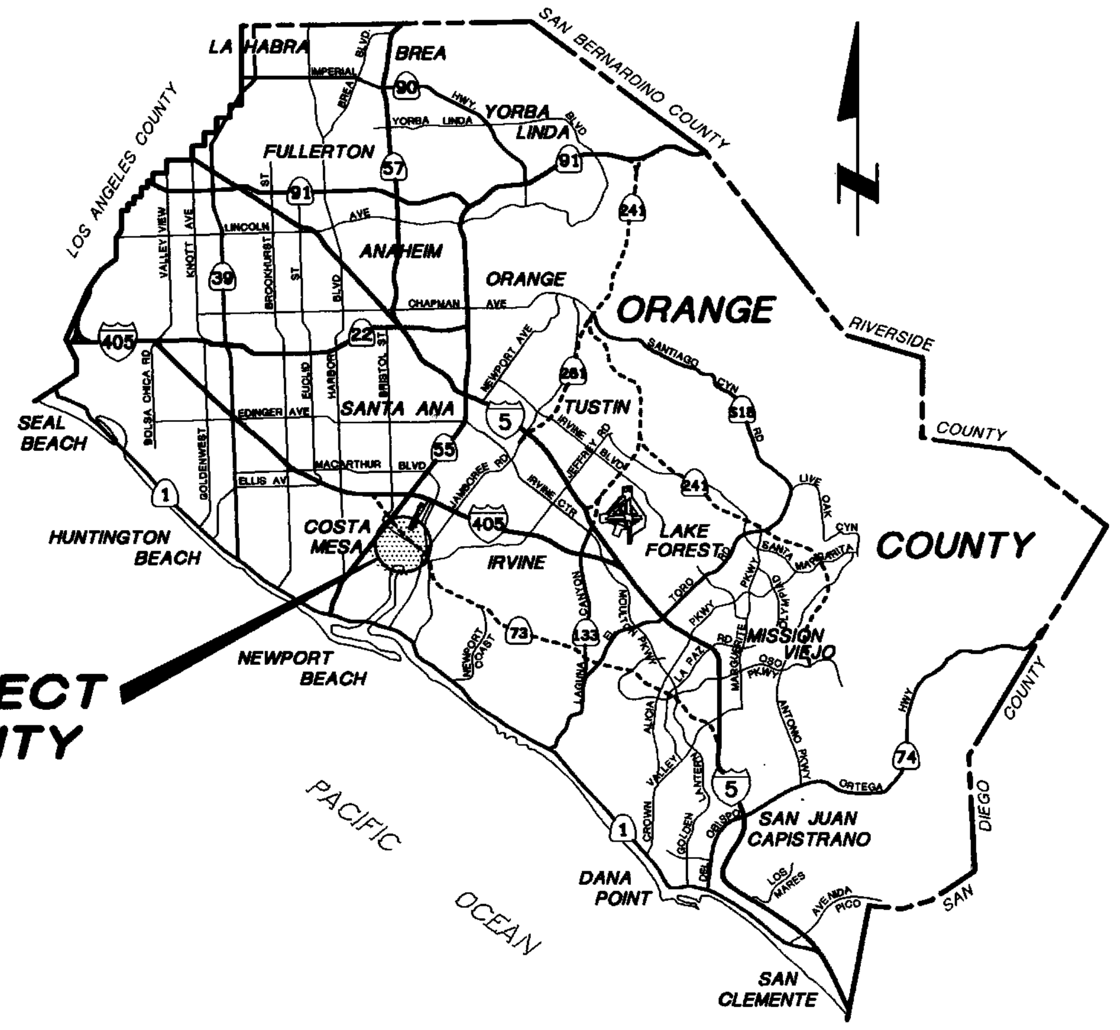
water main Replacement

12/34

STANDARD SYMBOLS

℄	CENTERLINE
W	PROPOSED WATER LINE - SIZE AS INDICATED
W	EXISTING WATER LINE - SIZE AS INDICATED
RW	PROPOSED RECYCLED WATER LINE - SIZE AS INDICATED
RW	EXISTING RECYCLED WATER LINE - SIZE AS INDICATED
S	PROPOSED SEWER LINE - SIZE AS INDICATED
	EXISTING SEWER LINE - SIZE AS INDICATED
	EXISTING UNDERGROUND T.V. CABLE
	EXISTING GAS LINE - SIZE AS INDICATED
	EXISTING HIGH PRESSURE GAS LINE - SIZE AS INDICATED
	EXISTING STORM DRAIN - SIZE AS INDICATED
	EXISTING TELEPHONE CONDUIT
	EXISTING FIBER OPTIC CABLE
	EXISTING POWER CABLE
FM	EXISTING SEWER FORCE MAIN - SIZE AS INDICATED
	EXISTING RIGHT-OF-WAY LINE
	EXISTING CONCRETE CURB
	EXISTING EDGE OF PAVEMENT (E.P.)
	PROPOSED WATER VALVE
	EXISTING WATER VALVE
FH	PROPOSED FIRE HYDRANT (F.H.)
	EXISTING FIRE HYDRANT (F.H.)
	PROPOSED WATER SERVICE RECONNECTION
	EXISTING WATER METER (W.M.) - SINGLE
	EXISTING WATER METER (W.M.) - DOUBLE
AV	PROPOSED AIR RELEASE AND VACUUM RELIEF VALVE
	EXISTING AIR RELEASE AND VACUUM RELIEF VALVE
BO	PROPOSED BLOWOFF ASSEMBLY
	EXISTING BLOWOFF ASSEMBLY
CP	PROPOSED CATHODIC TEST STATION
	EXISTING CATHODIC TEST STATION
	EXISTING CATCH BASIN (C.B.)
	EXISTING MANHOLE (M.H.)
	EXISTING ELECTRICAL OR TELEPHONE VAULT
	EXISTING FENCE
	EXISTING POWER POLE
	UTILITY POTHOLE LOCATION
	EXISTING TREE
	EXISTING SHRUBS
	EXISTING PIPE ENCASEMENT - TYPE AS INDICATED
8	ORANGE COUNTY ASSESSORS PARCEL NUMBER OR ALIGNMENT BEARING
2	DENOTES DETAIL NUMBER
12	DENOTES SHEET NUMBER

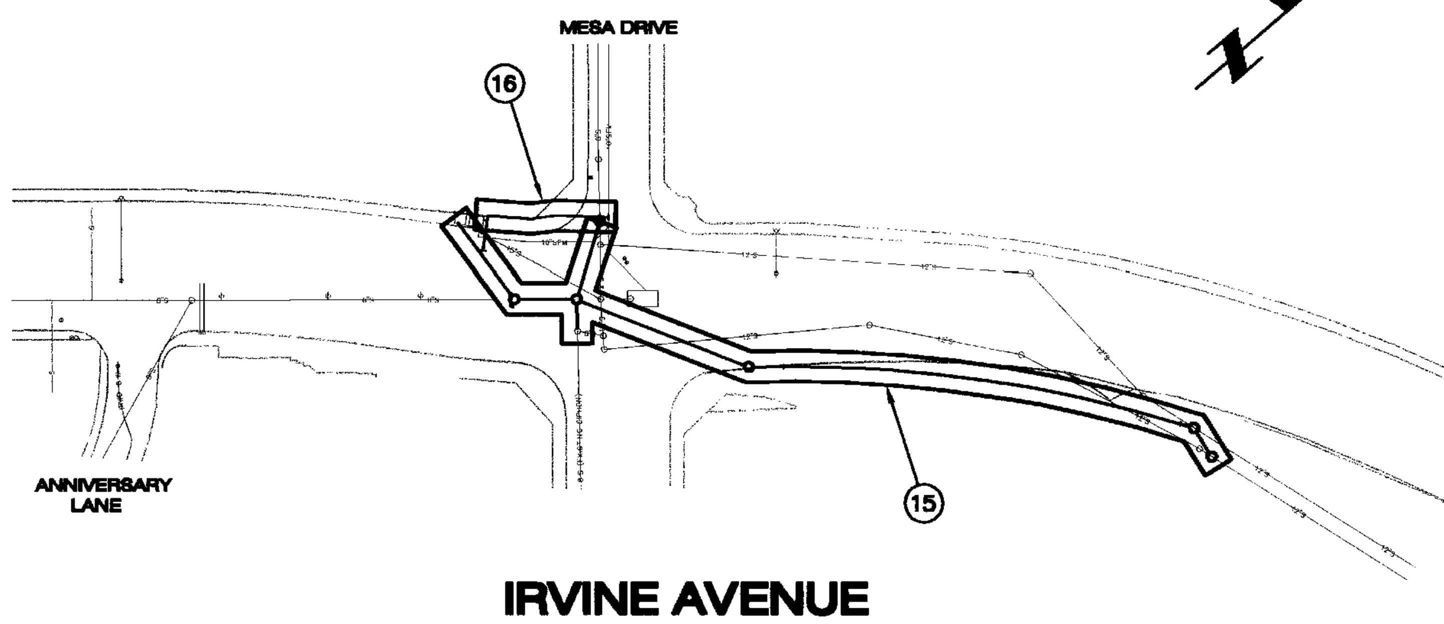


VICINITY MAP

NOT TO SCALE

ABBREVIATIONS

ABAND	ABANDONED
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE OR ASBESTOS CEMENT
ACP	ASBESTOS CEMENT PIPE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AV	AIR RELEASE & VACUUM RELIEF VALVE
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE
BCR	BEGIN CURB RETURN
BEG	BEGIN
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BLK	BLOCK
BM	BENCHMARK
BO	MANUAL DRAIN AND BLOWOFF ASSEMBLY
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CF	CURB FACE
CIP	CAST IRON PIPE
CL	CLASS
CML&C	CEMENT-MORTAR LINED & COATED
CMSD	COSTA MESA SANITARY DISTRICT
CNB	CITY OF NEWPORT BEACH
CONC	CONCRETE
CONT	CONTINUOUS
CP	CATHODIC PROTECTION
CPLG	COUPLING
CTR	CENTER
℄ (CL)	CENTERLINE
DIA	DIAMETER
DI	DUCTILE IRON
DIP	DUCTILE IRON PIPE
DWG	DRAWING
E	EAST
EC	END CURVE
EL	ELEVATION
ENGR	ENGINEERING
ETC	ETCETERA
EXIST (EX)	EXISTING
FL	FLOWLINE
F (FLG)	FLANGE
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIP	FEMALE IRON PIPE THREAD
FM	FORCE MAIN
FS	FINISHED SURFACE
FT	FEET
FUT	FUTURE
FWY	FREEWAY
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GV	GATE VALVE
HP	HIGH POINT
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
INV	INVERT
INSUL	INSULATED
IP	IRON PIPE
IRWD	IRVINE RANCH WATER DISTRICT
LF	LINEAR FEET
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MI	MILE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH
NE	NORTHEAST
NW	NORTHWEST
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
PE	PLAIN END
PCC	POINT OF COMPOUND CURVATURE
ℙ (PL)	PROPERTY LINE
PH	POT HOLE
PO	PUSH-ON
PP	POWER POLE
PSI	PRESSURE (POUNDS PER SQUARE INCH)
PUE	PUBLIC UTITITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R (RAD)	RADIUS
REBAR	REINFORCING STEEL
REQD	REQUIRED
RT	RIGHT
RW	RECYCLED WATER
R/W	RIGHT-OF-WAY
RWV	RESILIENT WEDGE VALVE
S	SOUTH, SLOPE OR SEWER
SCE	SOUTHERN CALIFORNIA EDISON
SCH	SCHEDULE
SD	STORM DRAIN
SE	SAND EQUIVALENT OR SOUTH EAST
SHT	SHEET
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STA	STATION
STL	STEEL
SW	SOUTHWEST
THK	THICK
TC	TOP OF CURB
TS	TRAFFIC SIGNAL (CONDUIT/CABLE)
TYP	TYPICAL
UG	UNDERGROUND
VERT	VERTICAL
W	WEST OR DOMESTIC WATER
WM	WATER METER
∠	ANGLE



SHEET INDEX MAP

SCALE: 1" = 100'

SHEET INDEX

SHT. NO.		DESCRIPTION
1		COVER TITLE SHEET
2		CNB TITLE SHEET (WITH SIGNATURE BLOCKS)
3		STANDARD SYMBOLS & ABBREVIATIONS, VICINITY MAP, SHEET INDEX MAP, SHEET INDEX (CNB SHEETS ONLY)
4		CONSTRUCTION NOTES, BASIS OF BEARINGS, BENCH MARK, PUBLIC AGENCIES & UTILITIES, CNB GENERAL WATER NOTES, NOTICE TO CONTRACTOR, JOB SITE SAFETY
5		CNB 24" WATER MAIN PLAN AND PROFILE SHEET - STA. 9+94.00 TO STA. 20+00.00
6		CNB 24" WATER MAIN PLAN AND PROFILE SHEET - STA. 20+00.00 TO STA. 29+00.00
7		CNB 24" WATER MAIN PLAN AND PROFILE SHEET - STA. 29+00.00 TO STA. 41+56.93
8		CNB 24" WATER MAIN PLAN AND PROFILE SHEET - STA. 41+56.93 TO STA. 51+26.18
9		CNB 24" WATER MAIN PLAN AND PROFILE SHEET - STA. 51+26.18 TO STA. 59+33.53
10		CNB 8" WATER MAIN PLAN AND PROFILE SHEET - STA. 60+00.00 TO STA. 63+27.92
11		CNB MISCELLANEOUS DETAILS
12		**CMSD TITLE SHEET (WITH SIGNATURE BLOCKS)**
13		**STANDARD SYMBOLS & ABBREVIATIONS, VICINITY MAP, SHEET INDEX MAP, SHEET INDEX (CMSD SHEETS ONLY)**
14		**CONSTRUCTION NOTES, BASIS OF BEARINGS, BENCH MARK, CMSD GENERAL SEWER NOTES, PUBLIC AGENCIES & UTILITIES, NOTICE TO CONTRACTOR, JOB SITE SAFETY**
15		**CMSD GRAVITY SEWER MAIN PLAN AND PROFILE - IRVINE AVENUE - STA. 90+00.00 TO STA. 95+41.37 CMSD GRAVITY SEWER MAIN PLAN AND PROFILE - MESA DRIVE - STA. 0+79.46 TO STA. 1+47.79**
16		**CMSD 12" SEWER FORCE MAIN PLAN AND PROFILE - STA. 199+80.00 TO STA. 200+82.6±**
17		IRWD TITLE SHEET (WITH SIGNATURE BLOCKS)
18		STANDARD SYMBOLS & ABBREVIATIONS, VICINITY MAP, SHEET INDEX MAP, SHEET INDEX (IRWD SHEETS ONLY)
19		CONSTRUCTION NOTES, BASIS OF BEARINGS, BENCHMARK, IRWD GENERAL NOTES, PUBLIC AGENCIES & UTILITIES, NOTICE TO CONTRACTOR, JOB SITE SAFETY
20		IRWD 12" WATER MAIN PLAN AND PROFILE - STA. 70+00.00 TO STA. 79+00.00
21		IRWD 12" WATER MAIN PLAN AND PROFILE - STA. 79+00.00 TO STA. 83+72.5±
22	CP-1	CORROSION PROTECTION PLAN AND GENERAL NOTES FOR CNB 24" WATER MAIN
23	CP-2	CORROSION PROTECTION DETAILS FOR CNB 24" WATER MAIN
24	CP-3	CORROSION PROTECTION DETAILS FOR CNB 24" WATER MAIN
25	T-1	TRAFFIC CONTROL KEY MAP, NOTES AND LEGEND. TRAFFIC CONTROL FOR CNB 8" WATER MAIN - IRVINE AVENUE FROM UNIVERSITY AVENUE TO MIRA LOMA PLACE
26	T-2	TRAFFIC CONTROL FOR CNB 24" WATER MAIN - IRVINE AVENUE FROM UNIVERSITY AVENUE TO MESA DRIVE
27	T-3	TRAFFIC CONTROL FOR CNB 24" WATER MAIN - IRVINE AVENUE AT MESA DRIVE INTERSECTION
28	T-4	TRAFFIC CONTROL FOR CNB 24" WATER MAIN - IRVINE AVENUE FROM MESA DRIVE TO SANTA ANA DELHI CHANNEL, IRVINE AVENUE AT BRISTOL STREET
29	T-5	TRAFFIC CONTROL FOR CNB 24" WATER MAIN - IRVINE AVENUE FROM SANTA ANA DELHI CHANNEL TO BRISTOL STREET
30	**T-6**	**TRAFFIC CONTROL FOR CMSD GRAVITY MAINS - IRVINE AVENUE NORTH OF MESA DRIVE TRAFFIC CONTROL FOR CMSD 12" SEWER FORCE MAIN - IRVINE AVENUE AT MESA DRIVE INTERSECTION**
31	**T-7**	**TRAFFIC CONTROL FOR CMSD GRAVITY SEWER MAINS - IRVINE AVENUE AT MESA DRIVE INTERSECTION**
32	T-8	TRAFFIC CONTROL FOR IRWD 12" WATER MAIN - IRVINE AVENUE FROM UNIVERSITY DRIVE TO MIRA LOMA PLACE
33	T-9	TRAFFIC CONTROL FOR IRWD 12" WATER MAIN - IRVINE AVENUE FROM MIRA LOMA PLACE TO MESA DRIVE
34	T-10	TRAFFIC CONTROL FOR IRWD 12" WATER MAIN - IRVINE AVENUE AT MESA DRIVE INTERSECTION

Water main Replacement

13/34

RECORD DRAWING

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REGISTERED PROFESSIONAL ENGINEER JOSEPH L. BOYLE No. 44497 Exp. 3/31/06 CIVIL STATE OF CALIFORNIA

DANIEL BOYLE ENGINEERING
Consulting Engineers
23231 South Pointe Drive, Suite 103
Laguna Hills, CA 92653 (949) 768-2600

PROJECT MANAGER 44497 RCE NO. 1/17/06 DATE

DATE	BY	DESCRIPTION	APP'D
1/20/06	JLB	Ⓐ RECORD DRAWING	
		REVISIONS	

APPROVED
ROBIN B. HAMERS R.C.E. 31720
MANAGER/DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT
DATE

DESIGNED JPS DRAWN CADD
CHECKED JLB DATE 07/04

IRVINE AVENUE
SEWER MAIN REPLACEMENT
STANDARD SYMBOLS & ABBREVIATIONS
VICINITY MAP, INDEX MAP, SHEET INDEX

COSTA MESA SANITARY DISTRICT

168-1
SHEET 13 OF 34

H:\N03\110\plans\dwg\RECORD DRAWINGS\CVRCM2.dwg 01/17/06 9:24am PLOT AT 1=1 D-537

CONSTRUCTION NOTES

CITY OF NEWPORT BEACH

24" DOMESTIC WATERLINE

ITEM	DESCRIPTION
1	CONSTRUCT 24" CML&TW STEEL PIPE (1/4" MIN PLATE THICKNESS) TRENCHING AND BEDDING PER DETAIL 3/11
2	INSTALL 4" PERFORATED PVC (SCH 80) PIPE WRAPPED IN 3/4" CRUSHED ROCK PER DETAIL 1/6
3	INSTALL 8" PVC AWWA C900 (CL 200) PIPE AND FITTINGS. TRENCHING AND BEDDING PER DETAIL 3/11
4	INSTALL 6" PVC AWWA C900 (CL 200) PIPE AND FITTINGS. TRENCHING AND BEDDING PER DETAIL 3/11
5	INSTALL 24" FLG BFV (CL 250) PER CITY OF NEWPORT BEACH STD-510-L-C AND STD-511-L.
6	INSTALL 8" FLGxMJ RWV (CL 200) PER CITY OF NEWPORT BEACH STD-510-L-C AND STD-511-L.
7	INSTALL 6" FLGxMJ RWV (CL 200) PER CITY OF NEWPORT BEACH STD-510-L-C AND STD-511-L.
8	INSTALL FIRE HYDRANT ASSEMBLY PER CITY OF NEWPORT BEACH STD-500-L (J-3765R). CORROSION PROTECTION REQUIREMENTS PER SHEET CP-1.
9	REPLACE TRAFFIC SIGNAL LOOPS PER PROJECT SPECIFICATIONS.
10	INSTALL 2" AIR AND VACUUM RELEASE VALVE ASSEMBLY PER CITY OF NEWPORT BEACH STD-515-L. CORROSION PROTECTION REQUIREMENTS PER SHEET CP-1.
11	ABANDON AND REMOVE EXISTING AIR AND VACUUM RELEASE ASSEMBLY.
12	INSTALL PLUGS, THRUST BLOCK, AND ABANDON EXISTING WATER MAIN AT NEAREST ACTIVE CONNECTION. EXISTING WATER MAINS ARE TO BE ABANDONED AFTER NEW MAIN HAS BEEN PLACED IN SERVICE AND ALL SERVICE LATERALS FROM THE OLD MAIN HAVE BEEN TRANFERRED TO NEW MAIN. ABANDON EXISTING VALVES IN PLACE, BACKFILL VALVE CANS, REMOVE VALVE COVERS AND REPLACE EXISTING AC PAVEMENT.
13	ABANDON AT NEAREST VALVE AND REMOVE EXISTING FIRE HYDRANT LATERAL AND FIRE HYDRANTS.
14	INSTALL BURIED FLANGE INSULATING KIT AND 4-WIRE TEST STATION. SEE CORROSION PROTECTION SITE PLAN ON SHEET CP-1.
15	CONSTRUCT 1-ANODE CATHODIC PROTECTION TEST STATION. SEE CORROSION PROTECTION SITE PLAN ON SHEET CP-1.
16	INSTALL 1" DOMESTIC WATER SERVICE METER PER CITY OF NEWPORT BEACH STD-502-L.

IRVINE RANCH WATER DISTRICT

12" DOMESTIC WATERLINE

ITEM	DESCRIPTION
9	REPLACE TRAFFIC SIGNAL LOOPS PER PROJECT SPECIFICATIONS.
60	INSTALL 12" PVC AWWA C900 (CL 200) PIPE AND FITTINGS. TRENCHING AND BEDDING PER IRWD STD. DWG. NO. W-11.
61	INSTALL 8" PVC AWWA C900 (CL 200) PIPE AND FITTINGS. TRENCHING AND BEDDING PER IRWD STD. DWG. NO. W-11.
62	INSTALL 6" PVC AWWA C900 (CL 200) PIPE AND FITTINGS. TRENCHING AND BEDDING PER IRWD STD. DWG. NO. W-11.
63	INSTALL 4" PVC AWWA C900 (CL 200) PIPE AND FITTINGS. TRENCHING AND BEDDING PER IRWD STD. DWG. NO. W-11.
64	INSTALL 12" FLG BFV (CL 150) PER IRWD STD. DWG. NO. W-7.
65	INSTALL 8" FLGxPUSH-ON RWV (CL 150) PER IRWD STD. DWG. NO. W-7.
66	INSTALL FIRE HYDRANT ASSEMBLY PER IRWD STD. DWG. NO. W-6.
67	REMOVE EXISTING FIRE HYDRANT LATERAL AND FIRE HYDRANTS. SALVAGE FIRE HYDRANTS AND DELIVER TO IRWD OPERATIONS CENTER AT 3512 MICHELSON DRIVE, IRVINE CA 92612
68	INSTALL PLUGS, THRUST BLOCK, AND ABANDON EXISTING WATER MAIN AT NEAREST ACTIVE CONNECTION. EXISTING WATER MAINS ARE TO BE ABANDONED AFTER NEW MAIN HAS BEEN PLACED IN SERVICE AND ALL SERVICE LATERALS FROM THE OLD MAIN HAVE BEEN TRANFERRED TO NEW MAIN. ABANDON EXISTING VALVES IN PLACE, BACKFILL VALVE CANS, REMOVE VALVE COVERS AND REPLACE EXISTING AC PAVEMENT.
69	INSTALL 1" DOMESTIC WATER SERVICE METER PER IRWD STD. DWG. NO. W-1.
70	INSTALL 4" DOMESTIC WATER SERVICE METER WITH MANIFOLD ASSEMBLY PER IRWD STD. DWG. NO. W-4.
71	INSTALL WATER QUALITY SAMPLING STATION PER IRWD STD. DWG. NO. W-26.
72	CONNECTION AT UNIVERSITY DRIVE AND IRVINE AVENUE SEE DETAIL 1/21

COSTA MESA SANITARY DISTRICT

GRAVITY SEWER

ITEM	DESCRIPTION
9	REPLACE TRAFFIC SIGNAL LOOPS PER PROJECT SPECIFICATIONS.
20	21" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
21	18" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
22	12" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
23	8" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
24	CONSTRUCT 72" MANHOLE PER CMSD STD. DWG. NO. S-100-A WITH 72" ID BASE SECTION AND PLASTIC (POLYVINYL CHLORIDE) LINER, AMERON T-LOCK LINER OR APPROVED EQUAL. INSTALL LINER PER MANUFACTURER (AMERON) SPECIFICATIONS.
25	CONSTRUCT 48" MANHOLE PER CMSD STD. DWG. NO. S-100 WITH PLASTIC (POLYVINYL CHLORIDE) LINER, AMERON T-LOCK LINER OR APPROVED EQUAL. INSTALL LINER PER MANUFACTURER (AMERON) SPECIFICATIONS.
26	CONSTRUCT DROP MANHOLE PER CMSD STD. DWG. NO. S-102. USE 72" ID BASE SECTION WITH MANHOLE CONSTRUCTION PER CMSD STD. DWG. NO. S-100-A AND PLASTIC (POLYVINYL CHLORIDE) LINER, AMERON T-LOCK LINER OR APPROVED EQUAL. INSTALL LINER PER MANUFACTURER SPECIFICATONS.
27	ABANDON AND REMOVE INTERFERING PORTIONS OF EXISTING SEWER. PLUG ABANDONED LINE.
28	REMOVE EXISTING MANHOLE FRAME, RINGS, AND COVER TO 24" BELOW GRADE. BACKFILL MANHOLE WITH 1 SACK SLURRY. CUT AND PLUG INCOMING LINES PER CMSD INSPECTOR. DELIVER OLD FRAMES, RINGS AND COVERS TO CMSD CORPORATE YARD AT 2310 PLACENTIA AVENUE, COSTA MESA.

12" SEWER FORCE MAIN

ITEM	DESCRIPTION
9	REPLACE TRAFFIC SIGNAL LOOPS PER PROJECT SPECIFICATIONS.
40	INSTALL 12" PVC AWWA C900 PIPE AND FITTINGS (CLASS 200) WITH THRUST BLOCKS AT ALL HORIZONTAL AND VERTICAL BENDS PER CITY OF NEWPORT BEACH STD-510-L-C. THRUST BLOCK SHALL FULLY ENCASE ALL BELOW GROUND DUCTILE IRON FITTINGS FOR CORROSION PROTECTION. TRENCHING AND BEDDING PER CMSD STD DWG NO. S-112.
41	CONNECT 12" PVC FORCE MAIN TO EXISTING SEWER PUMP STATION PER DETAIL 1/16
42	CONNECT 12" PVC FORCE MAIN TO EXISTING 10" SEWER FORCE MAIN PER DETAIL 3/16

BASIS OF BEARINGS:

THE BEARINGS SHOWN HEREON ARE BASED ON THE THE BEARING BETWEEN OCS HORIZONTAL CONTROL STATION GPS NO. 6171 AND STATION GPS NO. 1917 BEING N60°03'22"E PER RECORDS ON FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

BENCHMARK:

3N-60-89 ELEV=50.52 DATUM=NGVD 29/1995 OCS ADJUSTED

DISCRIBED BY OCS 1989 - FD 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED 3N-60-89 LOCATED AT THE SOUTHERLY PORTION OF THE INTERSECTION OF IRVINE AVENUE AND BRISTOL STREET (SOUTH) IN THE CITY OF NEWPORT BEACH, AT THE EASTERLY CORNER OF A 4 FT. BY 22 FT. CATCH BASIN, 43.5 FT. SOUTHEASTERLY OF THE CENTERLINE OF IRVINE AVENUE, 100 FT. SOUTHWESTERLY OF THE CENTERLINE OF BRISTOL STREET, 4 FT. BEHIND THE CURB.

CMSD GENERAL SEWER NOTES

CMSD STANDARD SEWER NOTES

1. THE SEWER SYSTEM SHALL CONFORM TO THE STANDARDS OF THE COSTA MESA SANITARY DISTRICT.
2. CONTRACTOR SHALL REQUEST INSPECTION FROM THE OFFICE OF THE DISTRICT ENGINEER 48 HOURS PRIOR TO COMMENCEMENT OF WORK. TELEPHONE: (949) 631-1731
3. ANY WORK PERFORMED WITHOUT INSPECTION FROM THE DISTRICT SHALL BE CONSIDERED UNACCEPTABLE.
4. CONTRACTOR SHALL OBTAIN CMSD SEWER PERMIT PRIOR TO COMMENCEMENT OF WORK FROM THE COSTA MESA SANITARY DISTRICT, 77 FAIR DRIVE. TELEPHONE: (714) 754-5307
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS THAT MAY BE REQUIRED BY THE LOCAL GOVERNING AGENCY.
6. CONTRACTOR TO HAVE A COPY OF APPROVED SEWER PLAN AND CMSD STANDARD PLANS AND SPECIFICATIONS ON JOB SITE AT ALL TIMES.
7. SEWER MAIN SHALL BE AIR OR WATER TESTED MEETING DISTRICT ENGINEER'S APPROVAL.
8. PRIOR TO ASPHALT CONCRETE PAVING, MANHOLE FRAMES AND COVERS SHALL BE LEFT 6" BELOW FINISH GRADE. AFTER STREET SURFACING IS COMPLETED, FRAMES AND COVERS SHALL BE RAISED TO GRADE PER STD. DWG. NO. S-105.
9. SEWER MAIN SHALL BE BALLED AFTER ALL MANHOLE FRAMES AND COVERS HAVE BEEN RAISED TO GRADE.
10. IF MINUMUM SEPARATION DISTANCE BETWEEN SEWER AND WATER MAIN IS NOT MET, SPECIAL CONSTRUCTION REQUIREMENTS ARE TO BE USED PER STD. DWG. NO. S-110-A OR S-110-B.
11. ALL TRENCH EXCAVATION AND PIPE BEDDING SHALL BE DONE PER STD. DWG. NO. S-112.

PUBLIC AGENCIES & UTILITIES

UNDERGROUND SERVICE ALERT	(800) 227-2600
CITY OF NEWPORT BEACH (UTILITIES) - UTILITY CLERK	(949) 644-3011 (DAY) (949) 644-3717 (NIGHT)
COSTA MESA SANITARY DISTRICT - ROBIN HAMERS	(949) 631-1731
IRWD SYSTEMS OPERATORS - STEVE HABIGER	(949) 453-5745
IRWD CONSTRUCTION SERVICES GROUP - ANTS UIGA	(949) 453-5586
IRWD INSPECTION - MIKE JACK	(949) 453-5615
IRVINE RANCH WATER DISTRICT MAIN OFFICE	(949) 453-5300
MESA CONSOLIDATED WATER DISTRICT - BOB McVICKER	(949) 356-4055
ELLER MEDIA COMPANY - CARLOS URIAS	(714) 289-2018
COUNTY OF ORANGE, PFRD - DAVE PICKRELL	(714) 567-7866
ICGTEL - DAVE ULRICH	(949) 864-1267
MCIWORLDCOM - CHARLES WELCH	(972) 656-6016
MEDIAONE - BRIAN CATON	(714) 549-7590
METROPOLITAN WATER - MARCO BUNTICH	(213) 217-6679
NEXTLINK - BUD SMITH	(714) 434-6614
PACIFIC BELL - ENGINEERING	(714) 666-5454
COMCAST - JOE BARRIAS	(714) 338-2061
ORANGE COUNTY WATER DISTRICT - STEVE CONKLIN	(714) 378-3211
SC EDISON - WALLACE ZIMMERMAN	(714) 973-5409
SOUTHERN CALIF. GAS CO. - TECHNICAL SUPERVISOR	(714) 634-3033
2 ORANGE COUNTY TRANSPORTATION AUTHORITY	(714) 265-4332 (714) 530-6060

NOTICE TO CONTRACTOR

THE EXISTENCE AND LOCATION (PLAN AND ELEVATION) OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THIS PLAN. UNLESS OTHERWISE DIMENSIONED, LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND SUB-STRUCTURES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINE OR STRUCTURES NOT SHOWN ON THESE PLANS, AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THOSE LINES OR STRUCTURES. CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL UTLITIES SHOWN ON THE DRAWINGS.

"CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD CNB, CMSD, IRWD AND DANIEL BOYLE ENGINEERING AND ITS EMPLOYEES, OFFICERS, OR AGENTS, HARMLESS AGAINST ANY AND ALL CLAIMS BY ANY PARTIES ARISING FROM, OR RELATED TO, ANY AND ALL DAMAGES, INCLUDING LEGAL COSTS AND ATTORNEYS FEES, RESULTING FROM INTERFERENCE WITH, INTERRUPTION OF, DAMAGE TO, OR ANY AND ALL INJURIES WHICH RESULT FROM DAMAGE CAUSED TO SUBSURFACE INSTALLATION AS DEFINED IN GOVERNMENT CODE 4216.1(J), WHICH IS UNFORESEEN AND DESPITE ENGINEER'S EFFORT DURING THE DESIGN PROCESS WAS NOT LOCATED, EXCEPTING ONLY THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF ENGINEER IN PROVIDING ITS SERVICES."

JOB SITE SAFETY

BY ACCEPTING THIS CONTRACT, CONTRACTOR HEREBY RELEASES AND AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS CNB, CMSD, IRWD, AND DANIEL BOYLE ENGINEERING, THEIR AGENTS, EMPLOYEES, CONSULTANTS AND REPRESENTATIVES FOR ANY AND ALL DAMAGE TO PERSONS OR PROPERTY OR WRONGFUL DEATH REGARDLESS OF WHETHER OR NOT SUCH CLAIM, DAMAGE, LOSS OR EXPENSE IS CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE, ACTIVE OR PASSIVE, OF CNB, CMSD, IRWD OR DANIEL BOYLE ENGINEERING, AS WELL AS THEIR AGENTS AND EMPLOYEES TO THE FULLEST EXTENT PERMITTED BY LAW. SUCH IDEMNIFICATION SHALL EXTEND TO ALL CLAIMS, DEMANDS, ACTIONS, OR LIABILITY FOR INJURIES, DEATH OR DAMAGES OCCURING AFTER COMPLETION OF THE PROJECT, AS WELL AS DURING THE WORK'S PROGRESS. CONTRACTOR FURTHER AGREES THAT IT SHALL ACCOMPLISH THE ABOVE AT ITS OWN COST, EXPENSE AND RISK EXCLUSIVE OF AND REGARDLESS OF ANY APPLICABLE INSURANCE POLICY OR POSITION TAKEN BY ANY INSURANCE COMPANY REGARDING COVERAGE.

RECORD DRAWING

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REGISTERED PROFESSIONAL ENGINEER JOSEPH L BOYLE No. 44497 Exp. 3/31/06 CIVIL STATE OF CALIFORNIA

DANIEL BOYLE ENGINEERING
Consulting Engineers
23231 South Pointe Drive, Suite 103
Laguna Hills, CA 92653 (949) 768-2600

PROJECT MANAGER 44497 RCE NO. 1/17/06 DATE

DATE	BY	DESCRIPTION	APP'D
1/20/06	JLB	2 RECORD DRAWING	

REVISIONS

APPROVED
ROBIN B. HAMERS R.C.E. 31720
MANAGER/DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT
DATE

DESIGNED JPS DRAWN CADD
CHECKED JLB DATE 07/04

IRVINE AVENUE
SEWER MAIN REPLACEMENT
CONSTRUCTION NOTES, BASIS OF BEARINGS, BENCHMARK, PUBLIC AGENCIES & UTILITIES, COSTA MESA SANITARY DISTRICT GENERAL SEWER NOTES, NOTICE TO CONTRACTOR, JOB SITE SAFETY

COSTA MESA SANITARY DISTRICT

168-1

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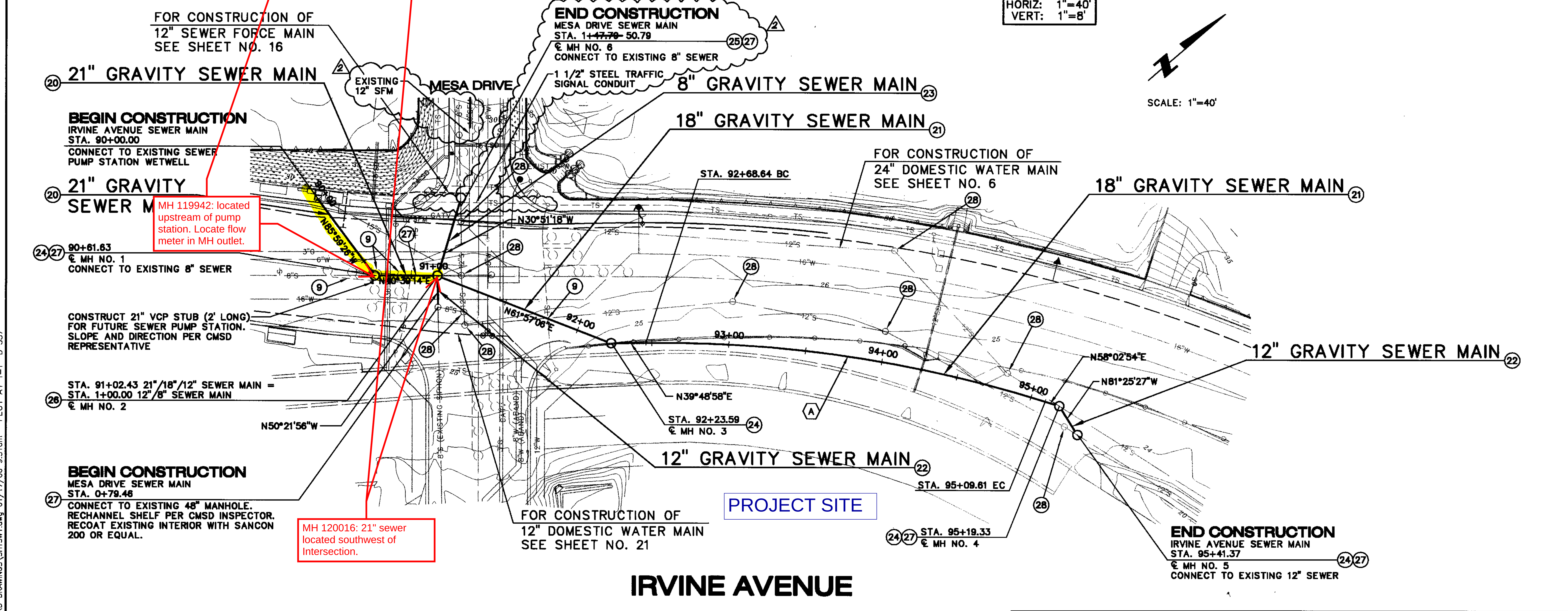
Water Main Replacement

14/34



IRVINE AVENUE

CURVE DATA					
NO.	DESCRIPTION	Δ	R	L	T
A	18" SEWER	18°13'56"	828.00'	263.48'	132.86'

CONSTRUCTION NOTES

9. REPLACE TRAFFIC SIGNAL LOOPS PER PROJECT SPECIFICATIONS.
20. 21" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
21. 18" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
22. 12" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
23. 8" EXTRA STRENGTH VITRIFIED CLAY PIPE WITH TYPE "G" COMPRESSION JOINTS. TRENCHING AND BEDDING PER CMSD STD. DWG. NO. S-112.
24. CONSTRUCT 72" MANHOLE PER CMSD STD. DWG. NO. S-100-A WITH 72" ID BASE SECTION AND PLASTIC (POLYVINYL CHLORIDE) LINER, AMERON T-LOCK LINER OR APPROVED EQUAL. INSTALL LINER PER MANUFACTURER (AMERON) SPECIFICATIONS.
25. CONSTRUCT 48" MANHOLE PER CMSD STD. DWG. NO. S-100 WITH PLASTIC (POLYVINYL CHLORIDE) LINER, AMERON T-LOCK LINER OR APPROVED EQUAL. INSTALL LINER PER MANUFACTURER (AMERON) SPECIFICATIONS.
26. CONSTRUCT DROP MANHOLE PER CMSD STD. DWG. NO. S-102. USE 72" ID BASE SECTION WITH MANHOLE CONSTRUCTION PER CMSD STD. DWG. NO. S-100-A AND PLASTIC (POLYVINYL CHLORIDE) LINER, AMERON T-LOCK LINER OR APPROVED EQUAL. INSTALL LINER PER MANUFACTURER SPECIFICATONS.
27. ABANDON AND REMOVE INTERFERING PORTIONS OF EXISTING SEWER. PLUG ABANDONED LINE.
28. REMOVE EXISTING MANHOLE FRAME, RINGS, AND COVER TO 24" BELOW GRADE. BACKFILL MANHOLE WITH 1 SACK SLURRY. CUT AND PLUG INCOMING LINES PER CMSD INSPECTOR. DELIVER OLD FRAMES, RINGS AND COVERS TO CMSD CORPORATE YARD AT 2310 PLACENTIA AVENUE, COSTA MESA.

water main Replacement

15/34

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23231 South Pointe Drive, Suite 103
Laguna Hills, CA 92653 (949) 768-2600

PROJECT MANAGER	RCE NO.	DATE
[signature]	44497	1/17/06

DATE	BY	DESCRIPTION	APP'D
1/20/06	JLB	2 RECORD DRAWING	

REVISIONS

APPROVED
ROBIN B. HAMERS R.C.E. 31720
MANAGER/DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT
DATE

DESIGNED JPS	DRAWN CADD
CHECKED JLB	DATE 07/04

IRVINE AVENUE
GRAVITY SEWER MAIN REPLACEMENT
PLAN AND PROFILE
STA. 90+00.00 TO STA. 95+41.37
STA. 0+79.46 TO STA. 1+47.79

COSTA MESA SANITARY DISTRICT

168-1

SHEET 15 OF 34

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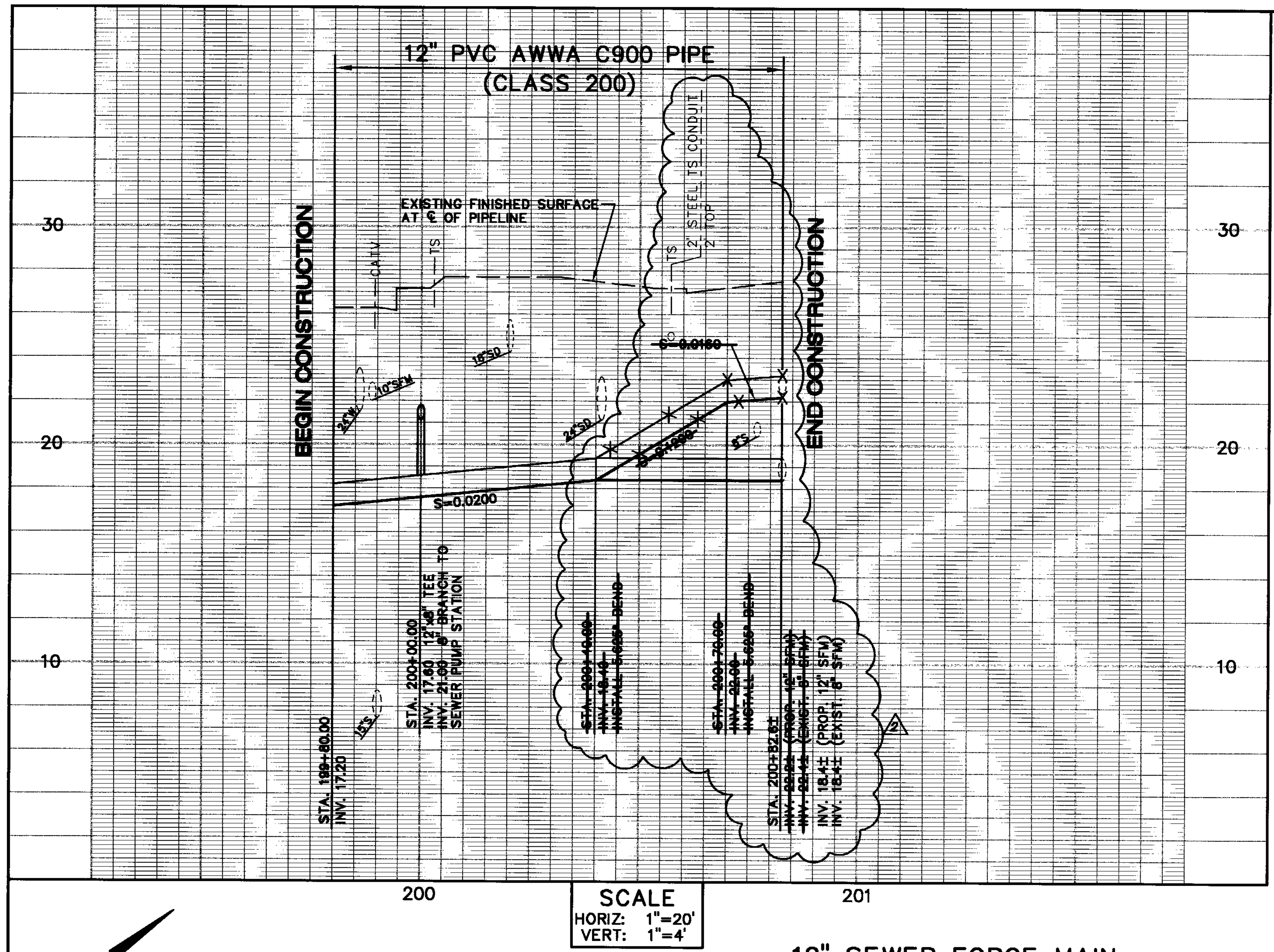
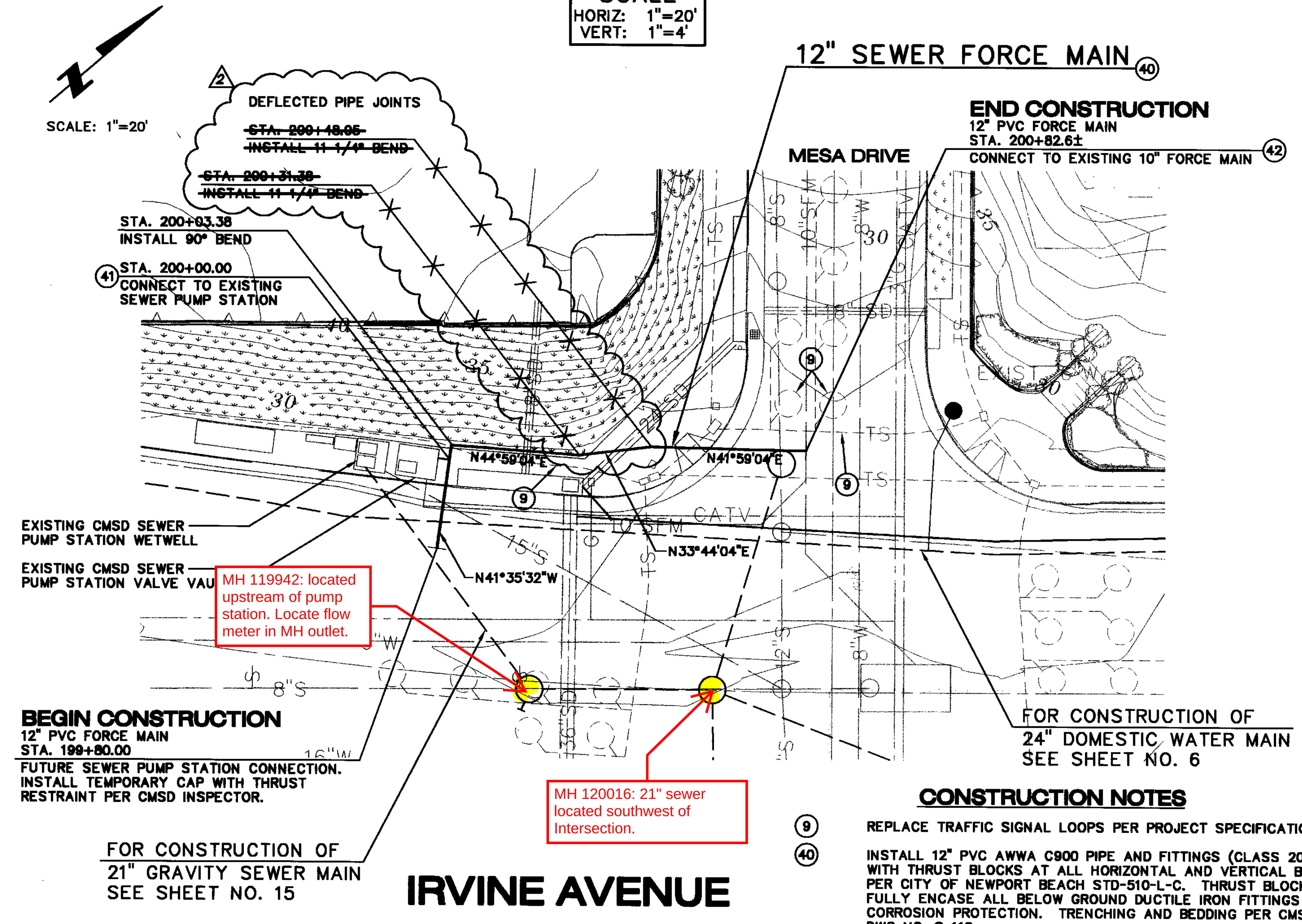




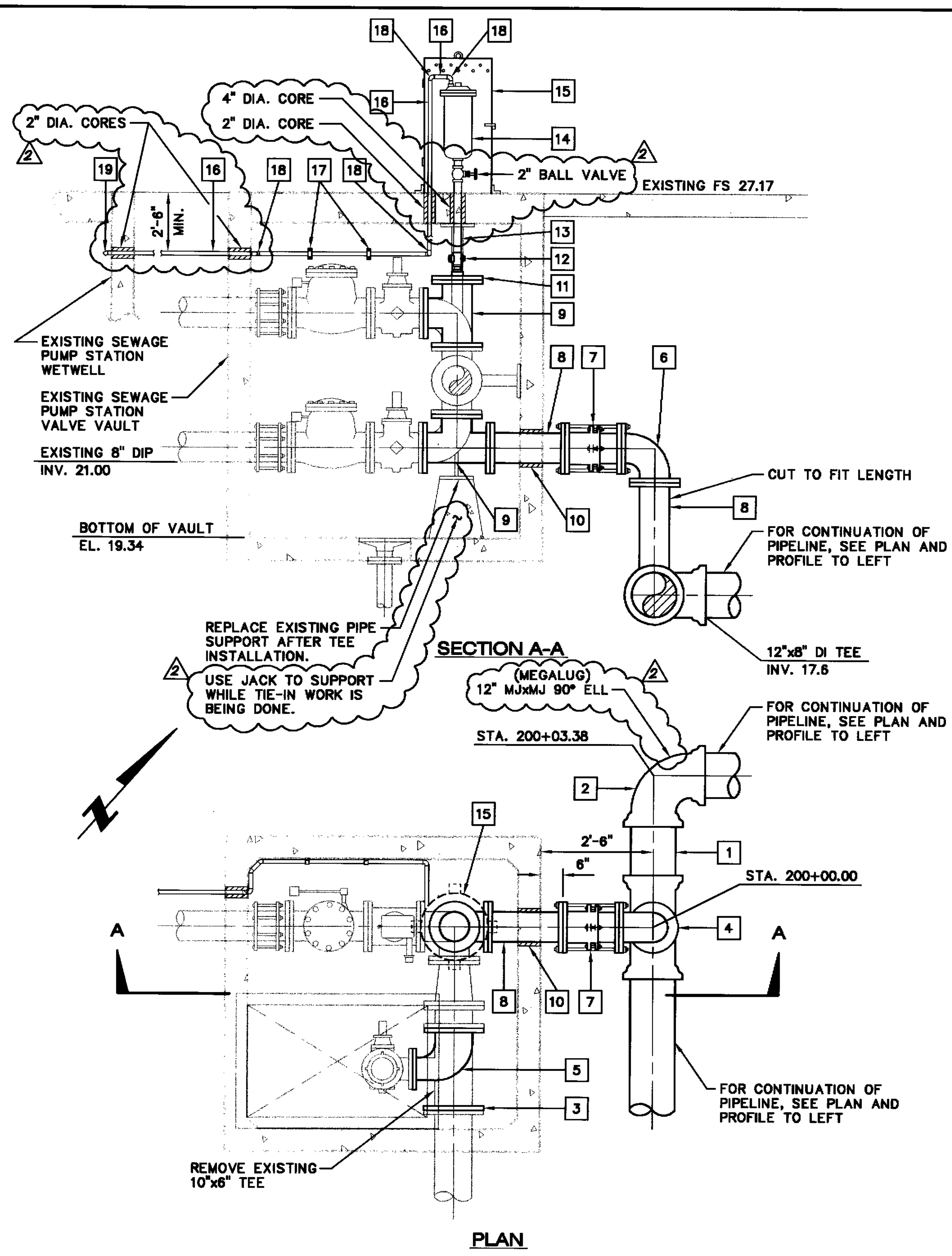
CONSTRUCTION NOTES

(9) REPLACE TRAFFIC SIGNAL LOOPS PER PROJECT SPECIFICATIONS.

(40) INSTALL 12" PVC AWWA C900 PIPE AND FITTINGS (CLASS 200) WITH THRUST BLOCKS AT ALL HORIZONTAL AND VERTICAL BENDS PER CITY OF NEWPORT BEACH STD-510-L-C. THRUST BLOCK SHALL FULLY ENCASE ALL BELOW GROUND DUCTILE IRON FITTINGS FOR CORROSION PROTECTION. TRENCHING AND BEDDING PER CMSD STD DWG NO. S-112.

(41) CONNECT 12" PVC FORCE MAIN TO EXISTING SEWER PUMP STATION PER DETAIL 1/16

(42) CONNECT 12" PVC FORCE MAIN TO EXISTING 10" SEWER FORCE MAIN PER DETAIL 3/16



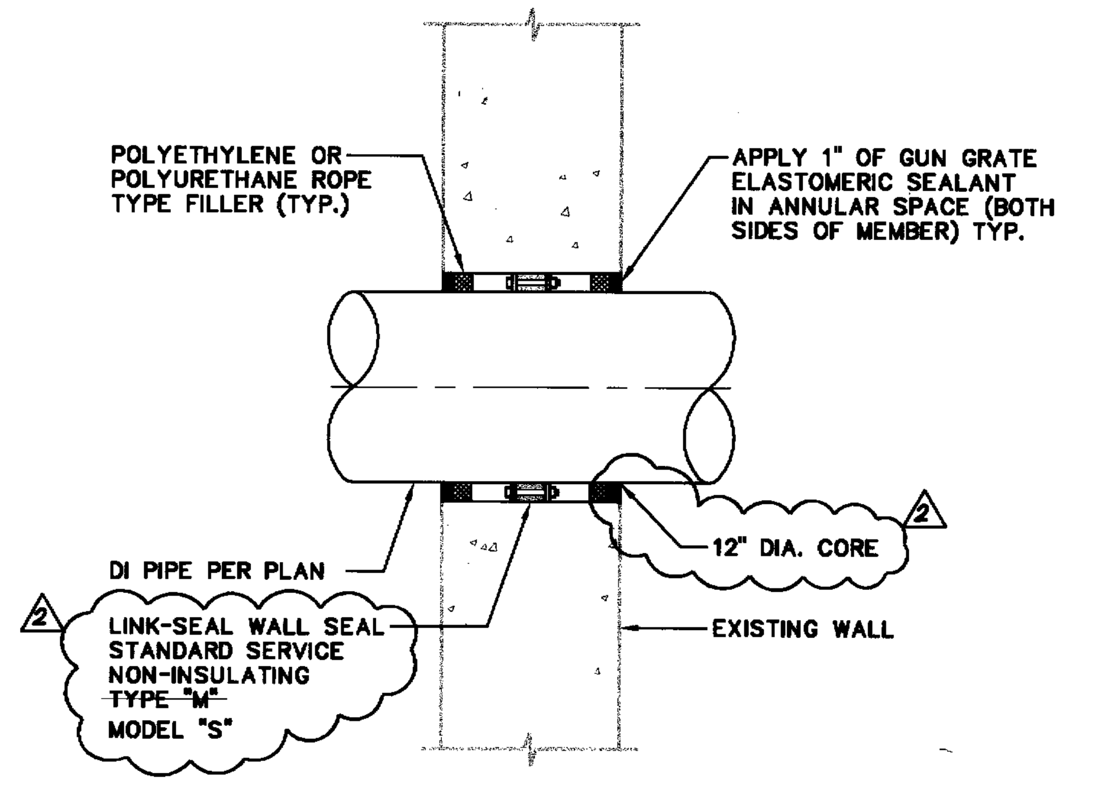
MATERIAL LIST

1	12" PE PVC SPOOL	13	2" COPPER TUBING, TYPE "K" (LENGTH AS RQUIRED)
2	12" ~~PUSH-ON~~ MJxMJ (MEGALUG) 90° DI BEND	14	2" SEWAGE AIR RELEASE FOR 150 PSI MAXIMUM OPERATING PRESSURE, APCO MODEL NO. 400, VAL-MATIC MODEL NO. 48A, OR APPROVED EQUAL WITH 1/2" NPT OUTLET, INLET AND BLOWOFF VALVE, QUICK DISCONNECT COUPLINGS, AND MINIMUM 5' HOSE FOR FLUSHING.
3	10" DI BLIND FLANGE		
4	12"x8" ~~PUSH-ON/FLG~~ MJ (MEGALUG) DI REDUCING TEE		
5	10"x6" FLG 90° DI REDUCING BEND	15	24" DIAMETER SCHEDULE 40 STEEL VENTED PIPE COVER, 3'-6" IN HEIGHT, 3/4" DIAMETER AIR HOLES ON TOP HALF OF COVER WITH 4" SPACING BETWEEN HOLES AND TOP. WELD 1/4" PLATE TO TOP AND 1/4" DIAMETER STEEL ROD HANDLES FILLET WELDED TO TOP COVER PLATE. PROVIDE 4 ANCHOR LUGS AT BOTTOM. HOT DIP GALVANIZE AFTER FABRICATION AND PAINT INSIDE AND OUTSIDE WITH TWO COATS "WHITE" GLOSS ENAMEL PAINT.
6	8" FLG 90° DI BEND		
7	8" DRESSER STYLE 131 DISMANTLING JOINT (LAY LENGTH: MIN. = 10", MAX. = 15")		
8	8" ~~FLG~~ FLGxPE DI SPOOL (LENGTH AS REQUIRED) CUT TO FIT		
9	8" FLG DI TEE	16	1/2" PVC (SCH 40)
10	WALL PENETRATION PER DETAIL 2/16	17	PIPE SUPPORTS ATTACHED TO VAULT WALL
11	8" BLIND FLANGE WITH 2" F.I.P. OUTLET	18	1/2" 90° ELBOW PVC (SCH 40)
12	2" CORP STOP, IP THREAD INLETxF.I.P. OUTLET (JONES J-1943)	19	1/2" 45° ELBOW PVC (SCH 40)

SEWER FORCE MAIN CONNECTION TO EXISTING PUMP STATION

1/16

SCALE: 1/2" = 1'-0"



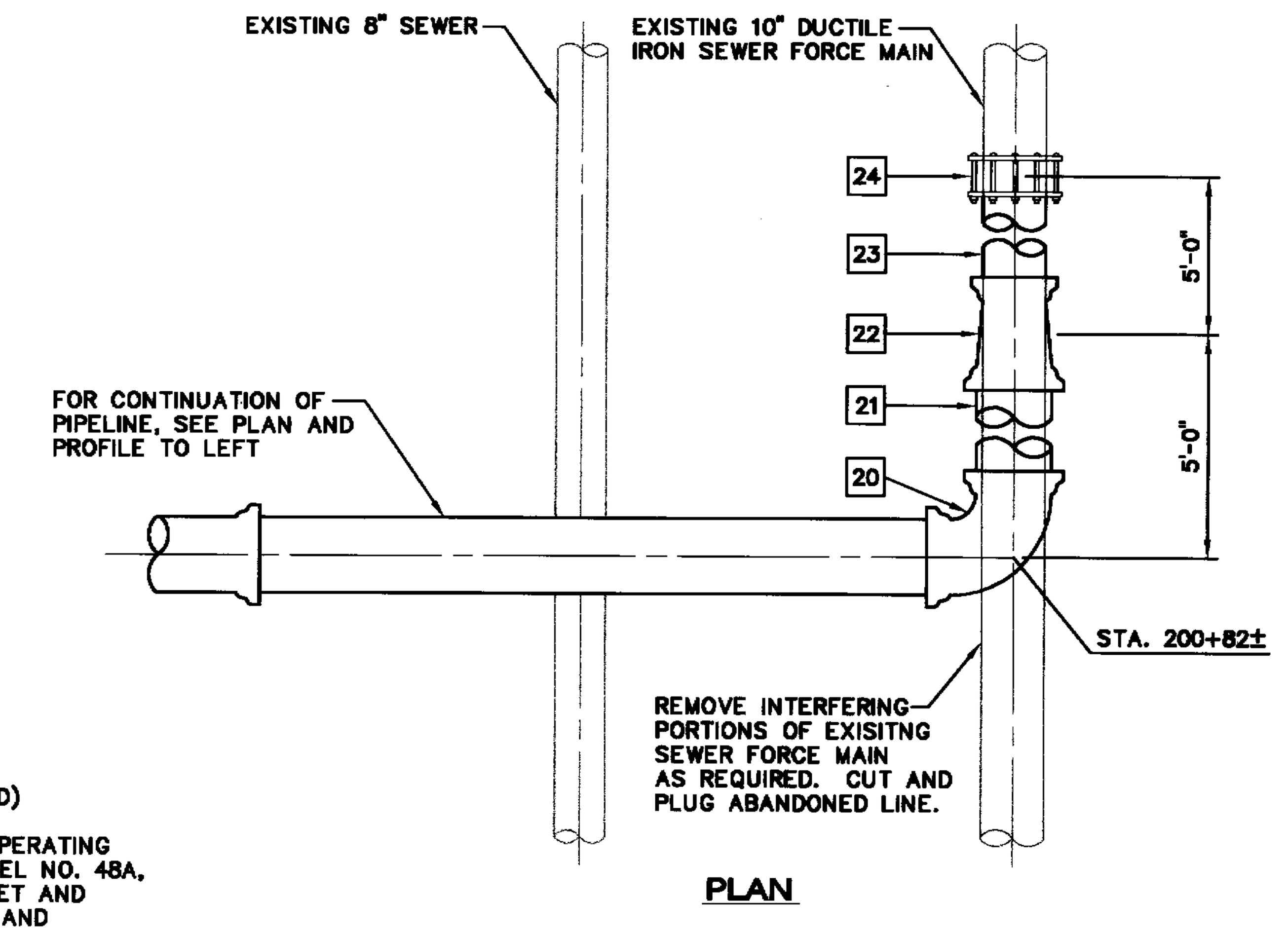
WALL PENETRATION

2/16

NOT TO SCALE

RECORD DRAWING

THIS IS A RECORD DRAWING OF THE FACILITIES IDENTIFIED IN THE TITLE BLOCK ONLY AND HAS BEEN PREPARED IN PART ON THE BASIS OF INFORMATION COMPILED AND FURNISHED BY OTHERS. THE ENGINEER AND OWNER(S) WILL NOT BE RESPONSIBLE FOR ANY ERROR(S) OR OMISSION(S) WHICH HAVE BEEN INCORPORATED INTO THIS DRAWING. ACTUAL CONDITIONS WILL VARY SOMEWHAT FROM THE CONDITIONS SHOWN HEREIN AND AT SOME LOCATIONS THE VARIANCE MAY BE LARGE. IF THE PRECISE LOCATION OF ANY FACILITY IS REQUIRED, THE FACILITY SHOULD BE FIELD LOCATED IN THE PRESENCE OF AN EMPLOYEE OF THE CITY/DISTRICT OR THE OWNER(S) OF THE UTILITIES INVOLVED.



MATERIAL LIST

20	12" ~~PUSH-ON~~ MJxMJ (MEGALUG) DI 90° BEND
21	12" PE PVC SPOOL (LENGTH AS REQUIRED)
22	12"x10" ~~PUSH-ON~~ MJ (MEGALUG) DI REDUCER
23	10" PE PVC SPOOL (LENGTH AS REQUIRED)
24	10" TRANSITION COUPLING (DRESSER STYLE 38) OR APPROVED EQUAL WITH STAINLESS STEEL HARDWARE.

SEWER FORCE MAIN CONNECTION AT MESA DRIVE

3/16

SCALE: 1/2" = 1'-0"

Water main replacement

16/34

REGISTERED PROFESSIONAL ENGINEER JOSEPH L. BOYLE No. 44497 Exp. 3/31/06 CIVIL STATE OF CALIFORNIA

DANIEL BOYLE ENGINEERING
Consulting Engineers
23231 South Pointe Drive, Suite 103
Laguna Hills, CA 92653 (949) 768-2500

PROJECT MANAGER | 44497 RCE NO. | 1/17/06 DATE

DATE	BY	DESCRIPTION	APP'D
1/20/06	JLB	2 RECORD DRAWING	

REVISIONS

APPROVED
ROBIN B. HAMERS R.C.E. 31720
MANAGER/DISTRICT ENGINEER
COSTA MESA SANITARY DISTRICT
DATE

DESIGNED JPS | DRAWN CADD
CHECKED JLB | DATE 07/04

IRVINE AVENUE
SEWER FORCE MAIN REPLACEMENT
PLAN AND PROFILE
STA. 199+80.00 TO STA. 200+82.6±

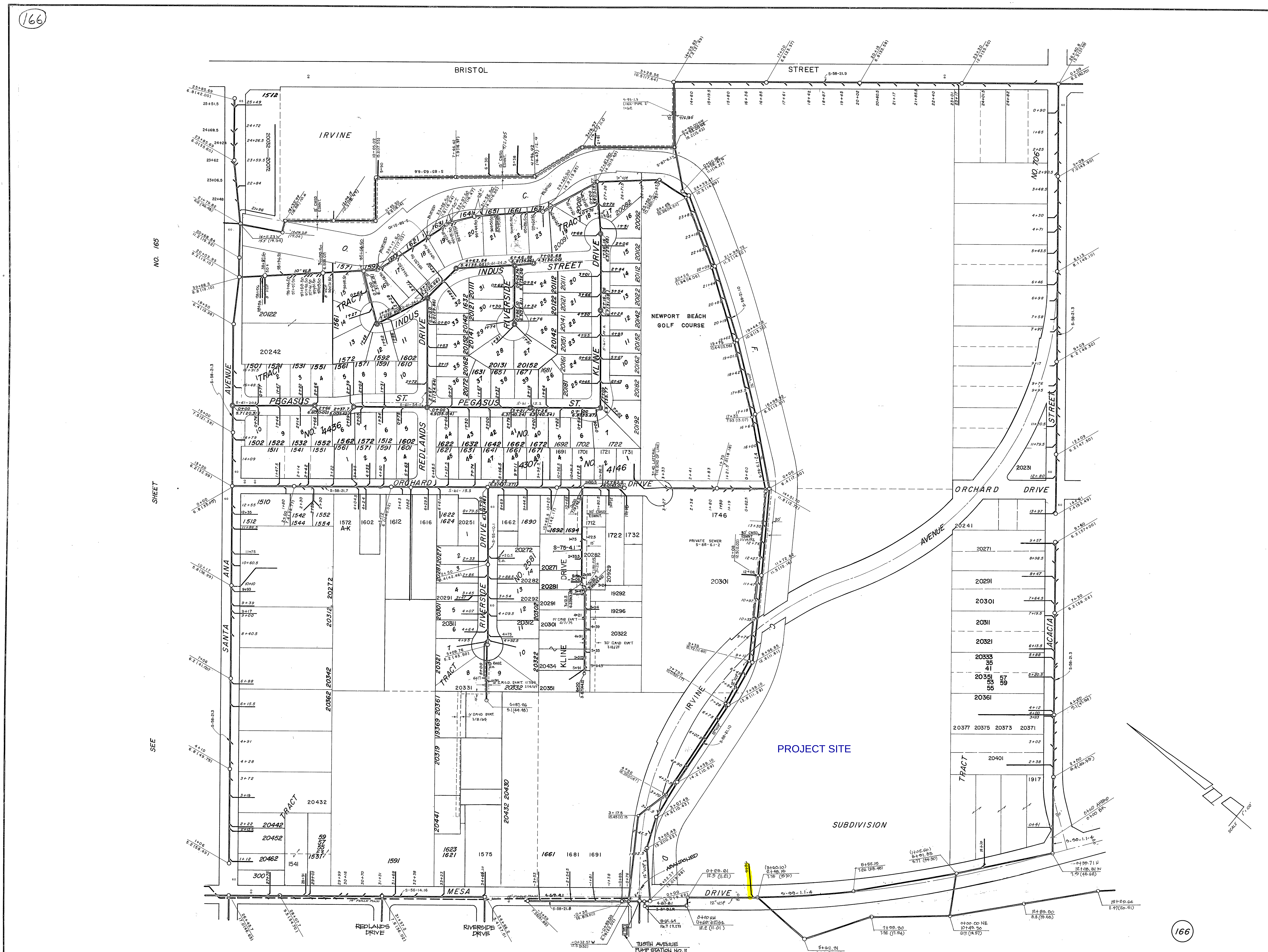
COSTA MESA SANITARY DISTRICT

168-1

SHEET 16 OF 34

H:\N03\110\plans\dwg\RECORD DRAWINGS\SHTSWDET1.dwg 01/17/06 9:33am PLOT AT 1=1 D-537

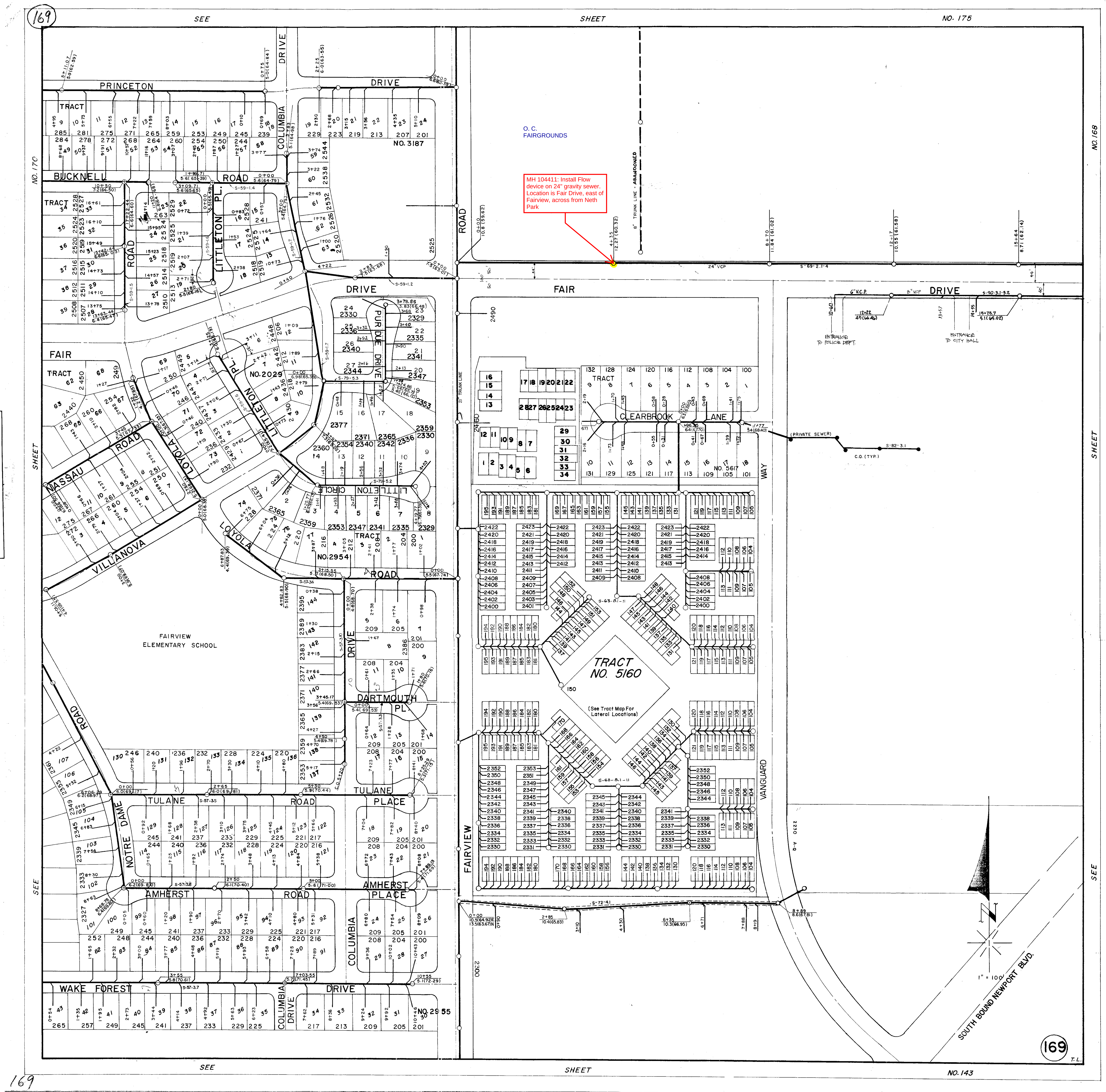
5-166



166

SEE SHEET NO. 164

SHEET NO. 166


169
SEE SHEET NO. 175
NO. 168
NO. 170
SEE SHEET NO. 143
O. C. FAIRGROUNDS
MH 104411: Install Flow device on 24" gravity sewer. Location is Fair Drive, east of Fairview, across from Neth Park
PRINCETON
DRIVE
COLUMBIA
BUCKNELL
ROAD
LITTLETON PL.
PURDUE DRIVE
FAIR DRIVE
TRACT NO. 3187
TRACT NO. 2029
TRACT NO. 2954
TRACT NO. 5617
TRACT NO. 5160
(See Tract Map For Lateral Locations)
CLEARBROOK LANE
VANGUARD WAY
FAIRVIEW ROAD
NASSAU ROAD
VILLANOVA
LOYOLA ROAD
LITTLETON CIRCLE
FAIRVIEW ELEMENTARY SCHOOL
DARTMOUTH PL.
TULANE ROAD
TULANE PLACE
NOTRE DAME ROAD
AMHERST ROAD
AMHERST PLACE
WAKE FOREST DRIVE
COLUMBIA DRIVE
SOUTH BOUND NEWPORT BLVD.
ENTRANCE TO POLICE DEPT.
ENTRANCE TO CITY HALL
(PRIVATE SEWER)
C.O. (TYP.)
24" VCP
TRUNK LINE - ABANDONED
1" = 100'
5-169

PLAN AND PROFILE FOR THE CONSTRUCTION OF

SANITARY SEWER MAIN

IN

FAIR DRIVE

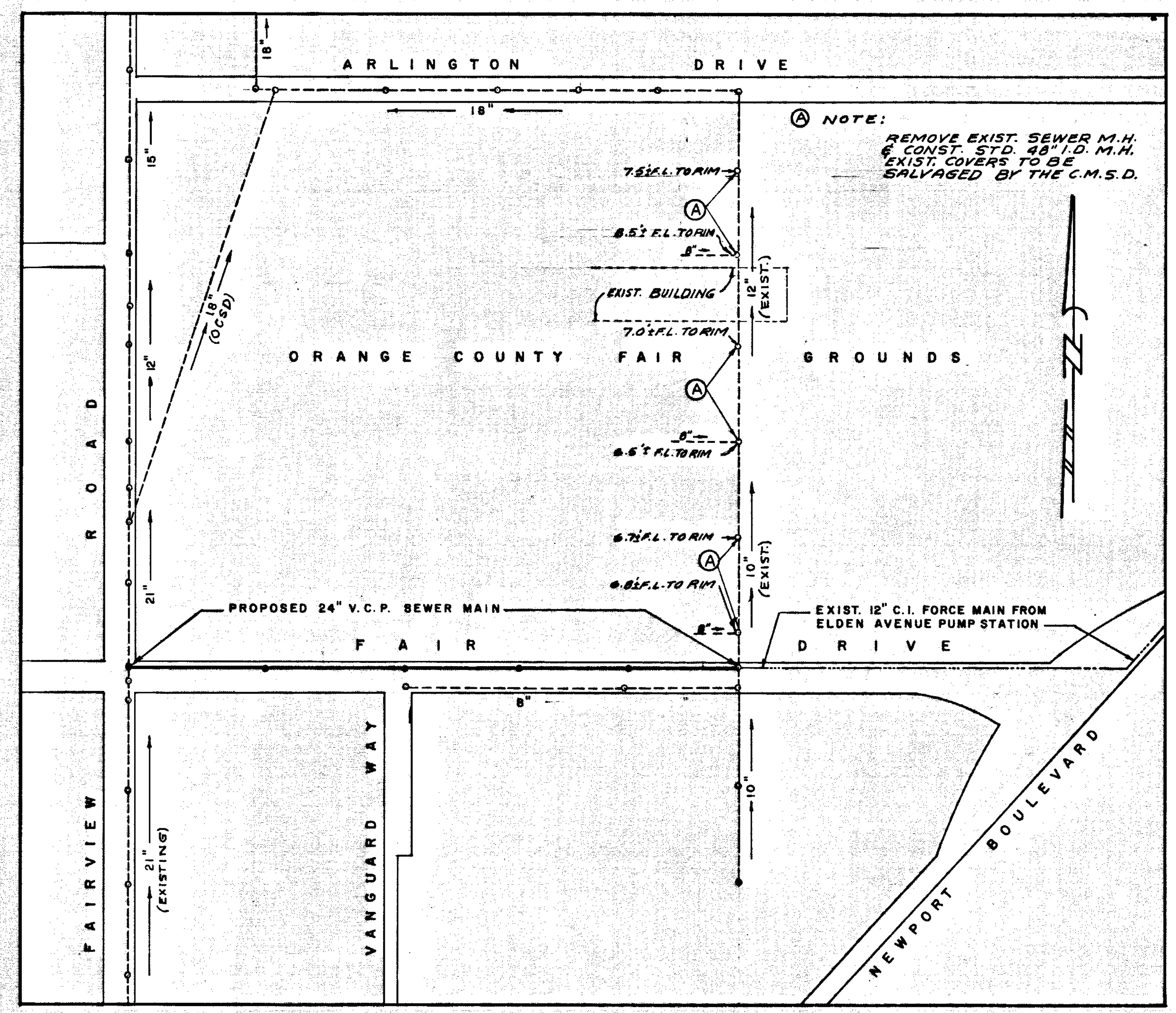
(FROM FAIRVIEW ROAD EASTERLY 1910.00 FEET)

ESTIMATE OF QUANTITIES

NO.	ITEM	UNIT	QUAN.
1.	24" VITRIFIED CLAY PIPE	L.F.	1892
2.	STANDARD MANHOLE, 60" I.D.	EACH	4
3.	STANDARD MANHOLE, 48" I.D.	EACH	7
4.	STANDARD MANHOLE, 72" I.D.	EACH	1
5.	SEWER MANHOLE (P.V.C. LINING)	EACH	1
6.	12" V.C.P. SEWER MAIN	L.F.	40
7.	12" C.I. FORCE MAIN	L.F.	26
8.	AGGREGATE BEDDING	TONS	20
9.	CLASS "B" CONCRETE	CU.YD.	2

GENERAL NOTES

1. All Sewer construction shall conform to the Standards of the Costa Mesa Sanitary District and shall be completed to the satisfaction of the District Engineer.
2. Stationing refers to the Centerline of proposed Sewer.
3. Manholes shall be brick or precast concrete as manufactured by Associated Concrete Products, Inc., or approved equal. Sewer Manhole Frame & Cover shall be Alhambra Foundry A-1270 or approved equal.
4. Clay Pipe Joint Compound shall be "CPI-2", "JC-60", Mechanical Compression Joints shall be "WEDGE-LOCK", "SPEED-SEAL MAINLINE" or approved equal. In no case will jointing material using neat Portland Cement, mortar or grout be permitted.
5. Prior to Construction the Contractor shall obtained a Permit From the City of Costa Mesa Street Department. Request for Inspection by the City Engineer shall be made 48 hrs. in advance of performing any work. Tel. 834-5323.
6. Contractor shall be responsible for maintaining warning devices, Lights and flagmen in accordance with "The Manual of the City of Costa Mesa."



LOCATION MAP

SCALE: 1" = 300'

BENCH MARK

B.M. No. 107 – Δ Center of Curb Return SW corner Fair Drive and Vanguard Way. Elev. 72.62

B.M. No. 108 – Δ Center of Curb Return SE corner Fair Drive and Fairview Road. Elev. 70.96

NOTICE TO CONTRACTORS

The existence and location of any underground pipes or structures shown on these plans are obtained by a search of the available records. To the best of our knowledge there are no known existing utilities except as shown on these plans.
The Contractor is required to take due precautionary measures to protect the utility lines shown and any other lines not of record or not shown on these plans.

ENGINEER: COSTA MESA SANITARY DISTRICT

APPROVED: Donald E. Stevens DATE 2-25-70

DONALD E. STEVENS, R.C.E. 11066

CITY OF COSTA MESA, ORANGE COUNTY, CALIFORNIA

NOVEMBER, 1969

"AS BUILT" 6-16-70

SANITARY SEWER MAIN
FAIR DRIVE
SHEET 1 OF 4 SHEETS

JOB NO. 1070

S-69-2.1

NOTE:
BEFORE EXCAVATING CALL CITY OF COSTA MESA TRAFFIC ENGINEERING (834-5334) FOR LOCATION OF UNDERGROUND FACILITIES.
O. C. FAIRGROUNDS
STA. 0+00 CONST. STD. M.H. No 1
—CAUTION—
PACIFIC TELEPHONE
CABLES UNDERGROUND
BEFORE EXCAVATING
CALL COLLECT:
7:30 A.M. to 5 P.M.
After Hours & Holidays
Orange County 714-633-0811 714-547-6606
Riverside County 714-684-0071 714-547-6606
Inyo County 714-684-0071 714-547-6606
San Bernardino County 714-684-0071 714-547-6606
Los Angeles County 213-621-3111
Ventura County 213-621-3111
24 HOUR SERVICE
San Diego County 714-298-0595 714-232-0027
FOR FREE CABLE LOCATING SERVICE
STA. 4+35 CONST. STD. M.H. No 2 (30" RING & COVER)
12" STUB N & S PLUG ENDS
EXIST. 8" VCP
EXIST. 8" WATER
PROTECT EXIST. WATER VALVE & METER VAULT IN PLACE.
PROTECT AIR VAC. & AIR RELEASE IN PLACE
STA. 8+70 CONST. STD. M.H. No 3 (30" RING & COVER)
12" STUB N & S PLUG ENDS
6' CH. LINK FENCE
EXIST. A.C. PAVING
STA. 12+00 ~ MATCH LINE SEE SHEET NO. 3
PROTECT EXIST. SIGNAL & STREET LIGHT IN PLACE.
PROTECT EXIST. FIRE ALARM IN PLACE.
12" WATER
8" WATER
36" WATER
30" GAS MAIN
EXIST. 21" VCP
EXIST. 8" VCP
FAIRVIEW ROAD
FAIR DRIVE
VANGUARD WAY
NOTE:
CONSTRUCTION OF MANHOLE No 1 SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE ORANGE COUNTY SANITATION DISTRICT No 6. A PERMIT FROM SANITATION DISTRICT No 6 WILL BE REQUIRED. SEE DETAIL SHEET 4.
MH 104411: Install Flow device on 24" gravity sewer. Location is Fair Drive, east of Fairview, across from Neth Park
SCALES
PLAN: 1" = 40'
PROFILE: HOR. 1" = 40' VER. 1" = 4'
FAIRVIEW RD.
STA. 0+00 ~ CONST. M.H. No. 1 (72" I.D.) RIM ELEV.
E.C.R. (71.09)
TOP OF EXIST. N'LY CURB
+ 0.32%
STA. 4+35 CONST. M.H. No. 2 (60" I.D.) RIM ELEV. 72.59
EXIST. GROUND @ R/W LINE
G.B. (73.03)
STA. 8+70 CONST. M.H. No. 3 (60" I.D.) RIM ELEV. 72.06
- 0.20%
G.B. (71.96)
CONST. 433' - 24" V.C.P. @ 0.16%
CONST. 435' - 24" V.C.P. @ 0.16%
CONST. 347' - 24" V.C.P. @ 0.16%
12" STUBS N & S 61.32 INV.
12" STUBS N & S 62.02 INV.
(59.62 INV.) VERIFY IN FIELD BEFORE CONST.
60.32 INV.
61.02 INV.
61.54 F.L.
STA. 12+00 ~ MATCH LINE ~ SEE SHT. NO. 3
"AS BUILT" 6-16-70
SANITARY SEWER MAIN
FAIR DRIVE
SHEET 2 OF 4 SHEETS
JOB NO. 1070
S-69-2.2

Appendix 3.2

Tustin/Irvine Avenue Pump Station

As-Built Plans

COSTA MESA SANITARY DISTRICT

PROJECT Nº 1112100-74

PLAN AND PROFILE FOR THE CONSTRUCTION OF

TUSTIN AVENUE PUMPING STATION

IN

THE INTERSECTION OF

MESA DRIVE AND IRVINE AVENUE

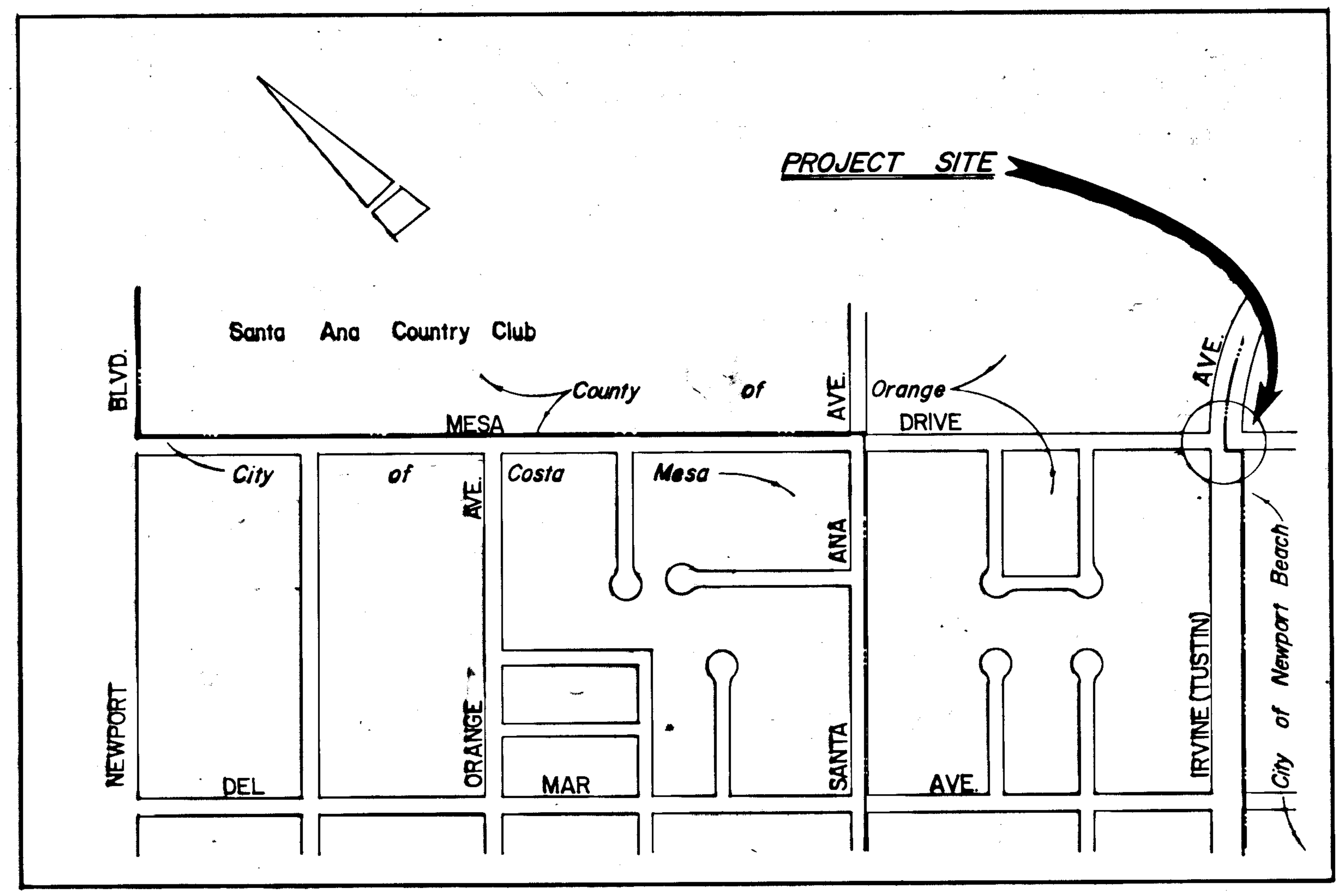
S-83-4.1

ESTIMATE OF QUANTITIES

Nº	ITEM	UNIT	QUANT.
1	PUMP STATION & VALVE VAULT, COMPLETE	L.S.	—
2	15" V.C.P. SEWER	L.F.	98
3	10" D.I.P. FORCE MAIN	L.F.	101

GENERAL NOTES:

1. The sewer system shall conform to the standards of the Costa Mesa Sanitary District.
2. Contractor shall request inspection from the office of the District Engineer 48 hours prior to commencement of work. Tel. (714) 631-1731.
3. Any work performed without inspection from the District shall be considered unacceptable.
4. Contractor shall obtain C.M.S.D. sewer permit prior to construction from the Department of Streets and Sanitation, City of Costa Mesa, 77 Fair Drive. Tel. (714) 754-5323.
5. Contractor shall obtain all necessary permits that may be required by the local governing agency.
6. Contractor to have a copy of approved sewer plan and C.M.S.D. Standard Plans and Specifications on job site at all times.
7. Clay pipe joints shall be Type "G" mechanical compression joints for main line sewer. Type "D" joints, Band-Seal or approved equal, are approved for laterals and repair work only.
8. 6" laterals shall be constructed from the sewer main to every lot.
9. All laterals shall be placed prior to surfacing of streets.
10. Stamp "S" on curb at sewer lateral locations.
11. Sewer main shall be air or water tested meeting District Engineer's approval.
12. Prior to asphalt concrete paving, manhole frames and covers shall be left 6" below finish grade. After street surfacing is completed, frames and covers shall be raised to grade per Std. Dwg. Nº S-105.
13. Sewer manhole frame and cover shall be Alhambra Foundry A-1270, or approved equal. Cover to be stamped 'SEWER'.
14. Sewer main shall be balled after all manhole frames and covers have been raised to grade.
15. P.V.C. pipe may be used only with prior approval from the District Engineer.
16. Contractor shall be responsible for maintaining warning devices, lights and flagmen in accordance with "WORK AREA TRAFFIC CONTROL HANDBOOK" published by Building News, Inc., 1982, & "MANUAL OF WARNING SIGNS, LIGHTS, AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS" issued by the State of California, Department of Public Works, latest edition.



LOCATION MAP

SCALE 1"=400'

BENCH MARK:

O.C.S. Benchmark C.M. 20-70

In the southeast part of the intersection of Tustin Avenue and Mesa Drive; 59 feet southeast of the centerline of Tustin Avenue; 38 feet southwest of the centerline of Mesa Drive; 0.7 feet northeast of the southwest end of a concrete retaining wall, level with the sidewalk.

1976 elev. 25.871

NOTICE TO CONTRACTORS:

All contractors and subcontractors performing work shown on or related to these plans shall conduct their operations so that all persons are provided a safe place to work and the public is protected. All contractors and subcontractors shall comply with the State of California Department of Industrial Relations, Division of Industrial Safety and Health, "CONSTRUCTION SAFETY ORDERS." The District Engineer shall not be responsible in any way for the contractor's and subcontractor's compliance with these orders.

Contractor further agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the contractor shall defend, indemnify, and hold the Costa Mesa Sanitary District and the District Engineer harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting for liability arising from the sole negligence of the Costa Mesa Sanitary District, or the District Engineer.

The existence, approximate location and extent of any underground utilities or structures shown hereon have been obtained by a search of the available records. The contractor is required to take due precautionary measures to protect the utility lines shown and any other lines not of record or not shown. If the contractor, while performing the contract, discovers utility facilities not shown hereon, he shall immediately notify the District Engineer in writing.

"AS - BUILT" 7-5-83

Project Nº 1112100-74

UTILITIES:

Southern Cal. Edison	714-835-3833
Southern Cal. Gas	714-634-3117
Pacific Telephone	714-633-0811
Santa Ana Heights Water	714-545-1060
Newport Beach Utilities	714-640-2221

CALL

Underground Service Alert 48 hrs. prior to excavating for underground locating.

1-800-422-4133

Revisions

Nº	Date	Description

ENGINEER:
COSTA MESA SANITARY DIST.
Approved:
12/30/82
Robin B. Hamers R.C.E. 31720 Date

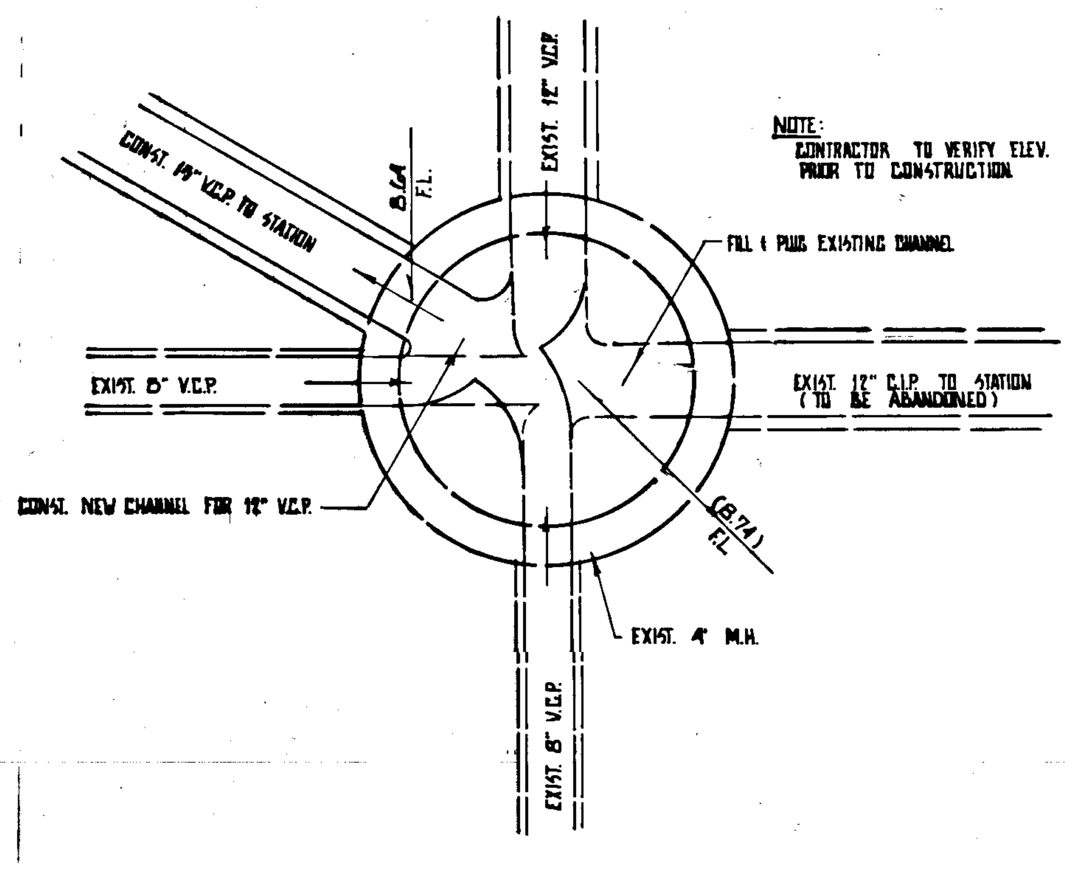
TUSTIN PUMPING STATION
RELOCATION & REMODEL

SHEET 1 OF 5

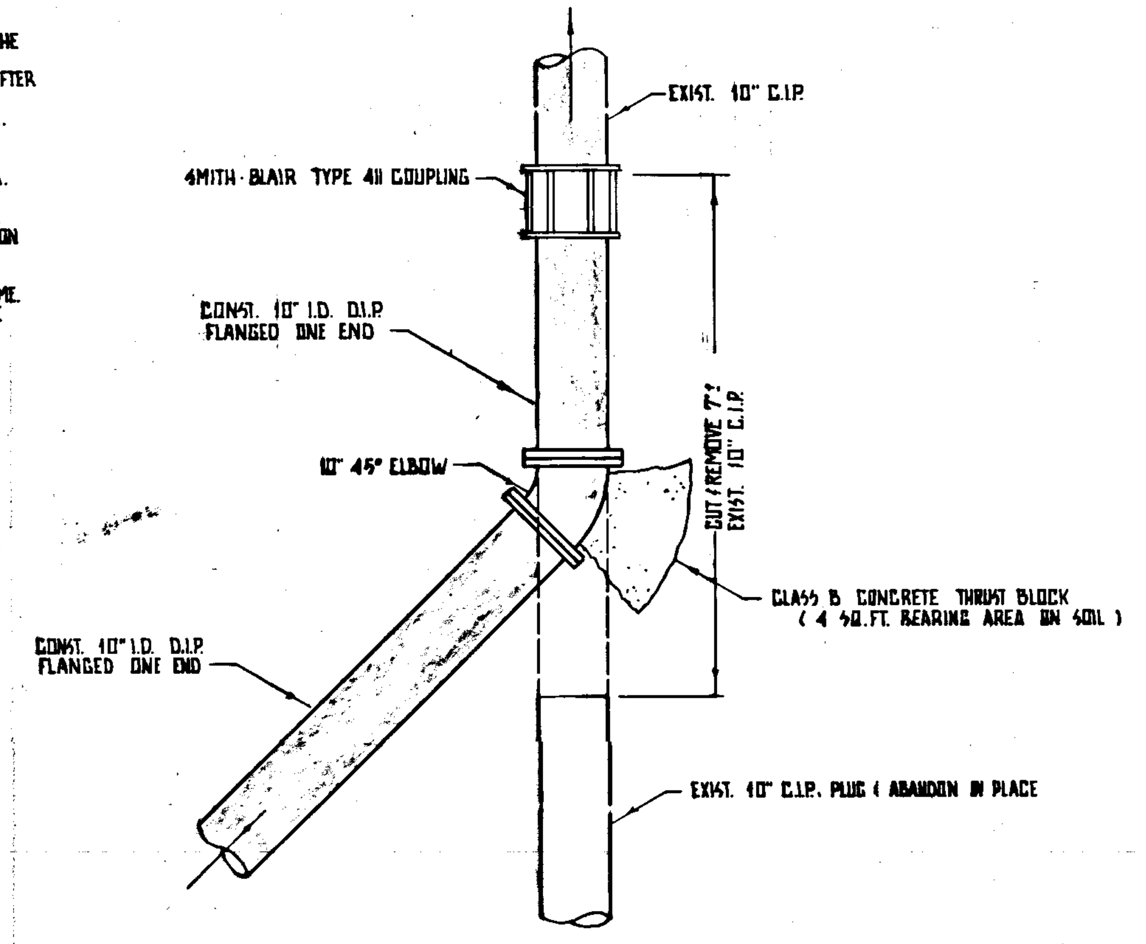
SPECIAL PROVISIONS FOR OPEN CUTS IN IRVINE AVENUE:

ALL STREET CONSTRUCTION & REPLACEMENT OF EXISTING STREET IMPROVEMENTS TO BE MADE UNDER THE DIRECTION OF & TO THE SATISFACTION OF THE E.M.A. INSPECTOR.
TWO SACK CEMENT SLURRY BACKFILL SHALL BE USED IN ALL OPEN CUTS AND SHALL BE PLACED WITHIN 24 HOURS AFTER TRENCHING.
PATCHING OF THE TRENCH SHALL BE OF HIGH QUALITY AND TO THE TOTAL SATISFACTION OF THE E.M.A. INSPECTOR.
TRENCH STEEL PLATING SHALL BE ON THE JOB SITE BEFORE THE TRENCHING BEGINS. PLATES SHALL BE PINNED OR TACKED WHEN PLACED.
A.C. PATCH PERMANENT MATERIAL SHALL BE INSTALLED TO FINISH GRADE AND TO THE SATISFACTION OF THE E.M.A. INSPECTOR NOT LATER THAN TWO WORKING DAYS AFTER THE SLURRY BACKFILL HAS BEEN PLACED.
CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING FINISH GRADE OF A.C. PATCH DUE TO SETTLEMENT COMMENCING NO LESS THAN 10 WORKING DAYS AND COMPLETING NO LATER THAN 20 WORKING DAYS AFTER A.C. PATCH INSTALLATION AS PROVIDED ABOVE. ALL WORK SHALL BE DONE TO THE SATISFACTION OF THE E.M.A. INSPECTOR.
ALL OPEN TRENCHES TO BE COVERED BY 3 P.M. EACH DAY.
CONSTRUCTION TO BE PHASED SUCH THAT THERE WILL BE NO MORE THAN 1 OPEN TRENCH IN IRVINE OR MESA AT ANY TIME.
IRVINE AVENUE & MESA DRIVE TO BE COLD PLANED NEXT TO GUTTER & CAP WITH 0.1' A.C., THEN FOG SEAL & RESTRIPE WITHIN THE AREA INDICATED ON THE PLANS. (SHADED AREA BELOW)

CONTRACTORS NOTE:
ALL EXCAVATIONS TO BE BACKFILLED WITH TWO SACK SLURRY BACKFILL.

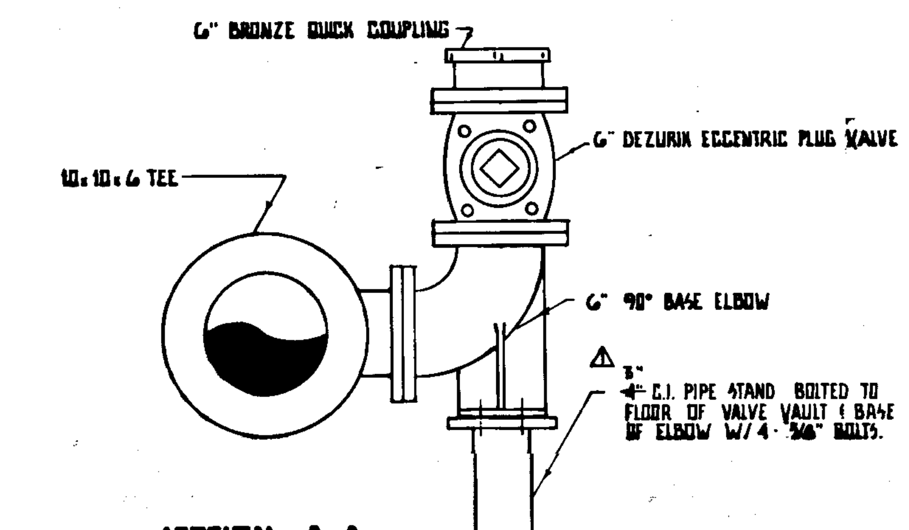


DETAIL 1 - EXIST. MANHOLE
SCALE 1/4" : 1'

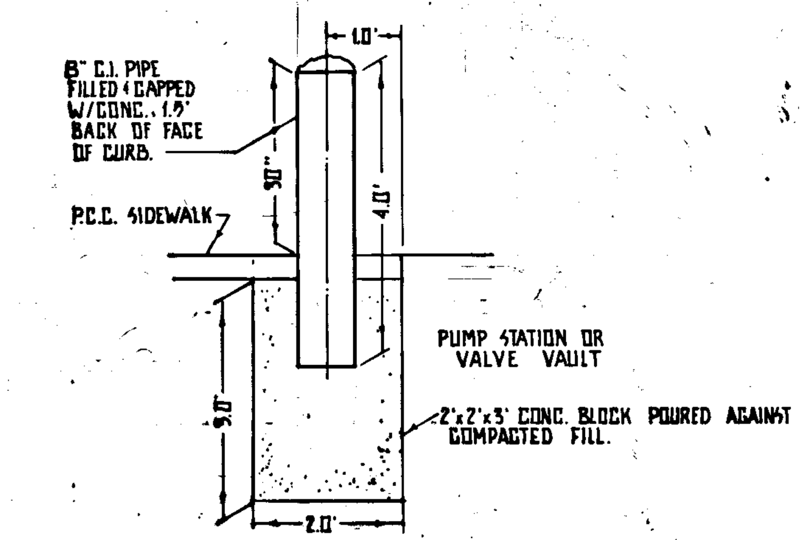


DETAIL 2 - TIE INTO EXIST. MAIN
SCALE 1/2" : 1'

NOTE: AT TIME OF TIE-IN 14" PLUG VALVE IN ELDEN STATION VALVE VAULT MUST BE CLOSED.

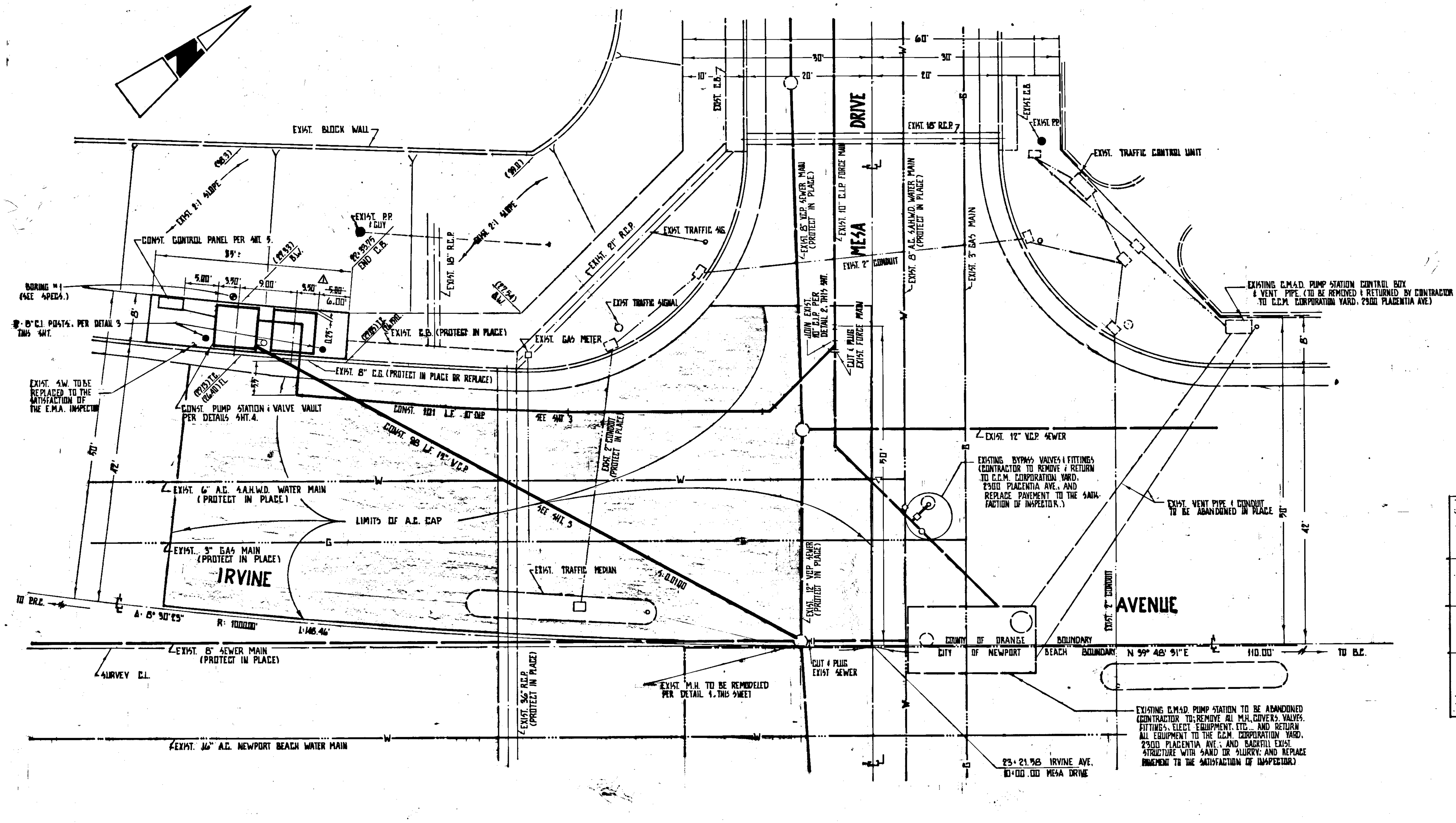


SECTION A-A
BYPASS CONNECTION
SEE SHEET 4
SCALE 1" : 1'

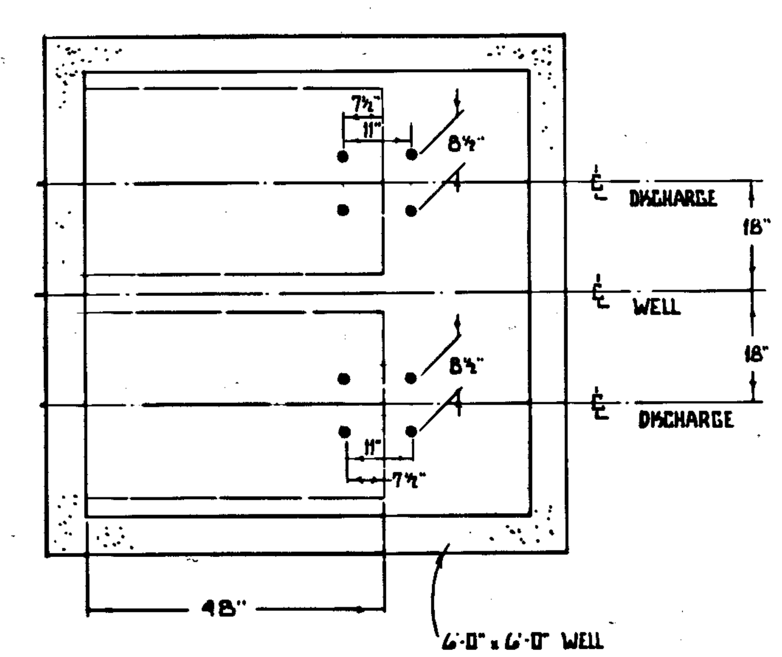


DETAIL 3 - BARRIERS
SCALE 1/2" : 1'

TRAFFIC CONTROL NOTES:
1. CONTRACTOR TO SUBMIT AN ACCEPTABLE TRAFFIC CONTROL PLAN TO THE COUNTY OF ORANGE PRIOR TO BEGINNING CONST.
2. CONTRACTOR TO MAINTAIN 1 LANE OF TRAFFIC IN BOTH DIRECTIONS ALONG IRVINE AVENUE AT ALL TIMES & MAINTAIN 2 LANES OF TRAFFIC IN EACH DIRECTION DURING PEAK TRAFFIC HOURS.
3. PEAK HOURS SHALL BE 7AM TO 9AM AND 3 PM TO 6:30 PM MONDAY THROUGH FRIDAY UNLESS OTHERWISE DETERMINED BY THE COUNTY INSPECTOR.



SITE PLAN
SCALE 1" : 10'

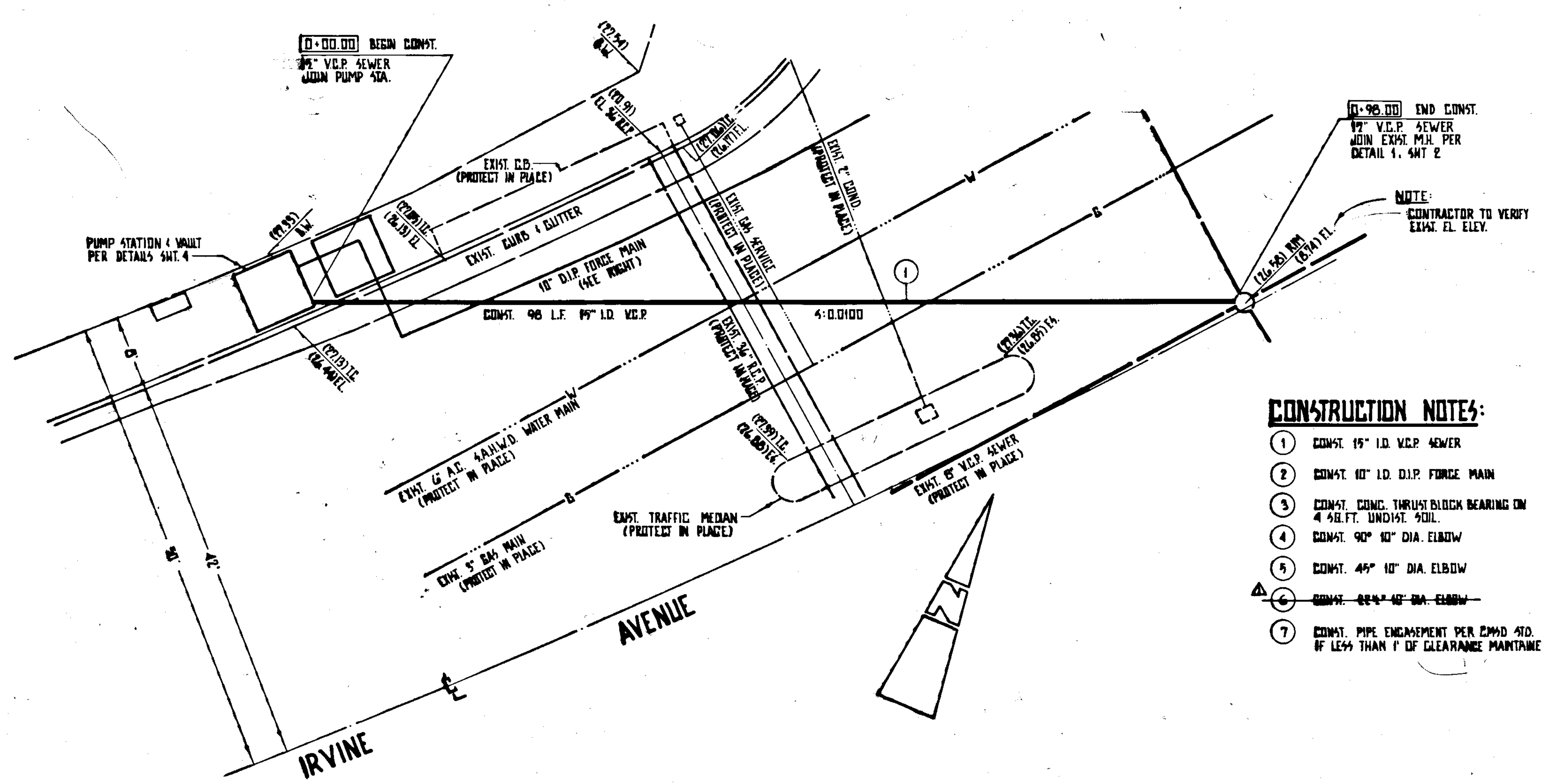


DETAIL 4 - ANCHOR BOLTS
NOT TO SCALE
SEE SHEET 4.

△ AS-BUILT 7-5-83

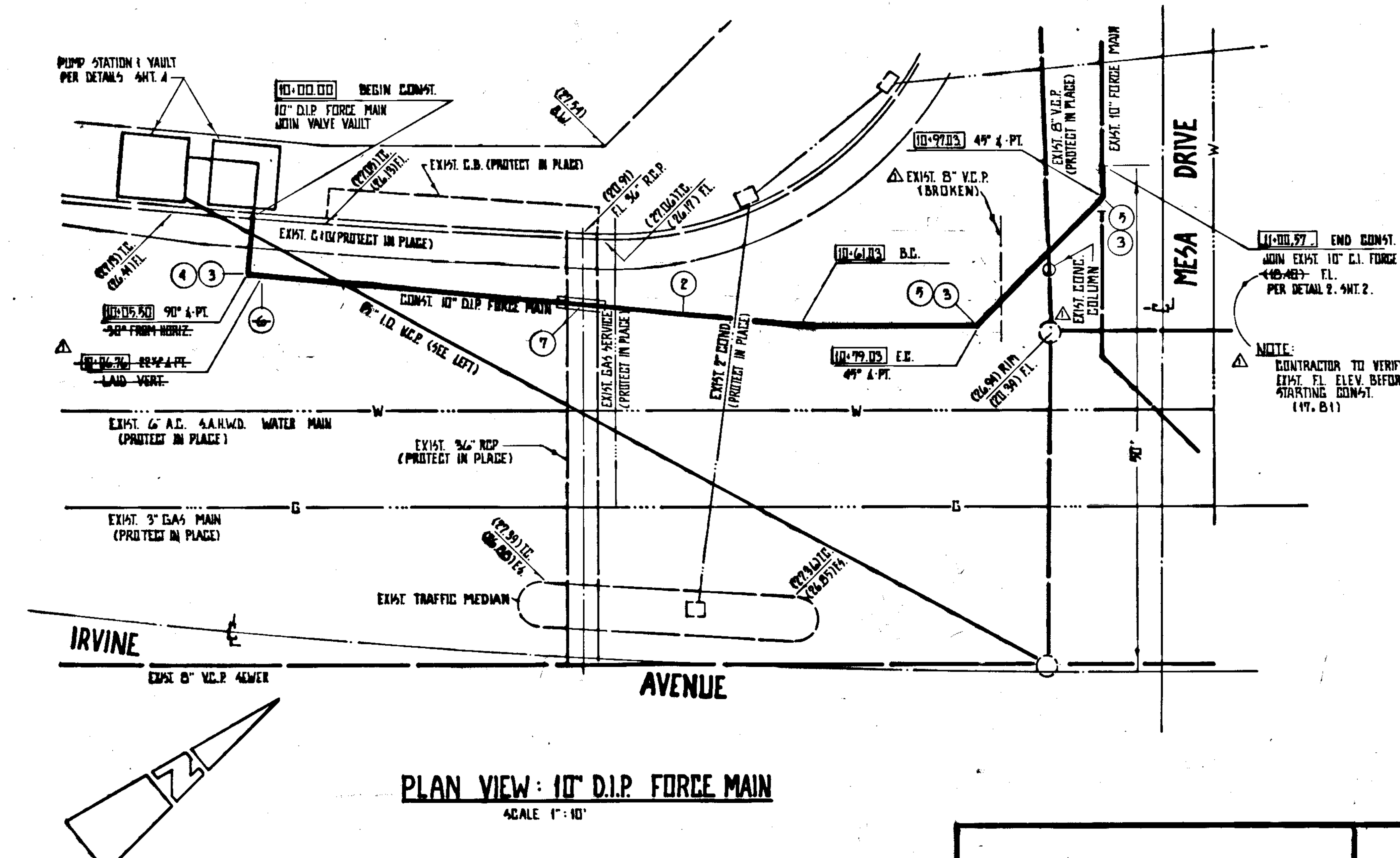
TUSTIN AVENUE PUMP STATION RELOCATION & REMODEL	SHEET 2 OF 5

S-83-4.2



CONSTRUCTION NOTES:

1. CONST. 15" I.D. V.C.P. SEWER
2. CONST. 10" I.D. D.I.P. FORCE MAIN
3. CONST. CONC. THRUST BLOCK BEARING ON 4 SQ.FT. UNDIST. SOIL.
4. CONST. 90° 10" DIA. ELBOW
5. CONST. 45° 10" DIA. ELBOW
6. ~~CONST. 22½° 10" DIA. ELBOW~~
7. CONST. PIPE ENCASEMENT PER CMSD STD. S-109 IF LESS THAN 1' OF CLEARANCE MAINTAINED.



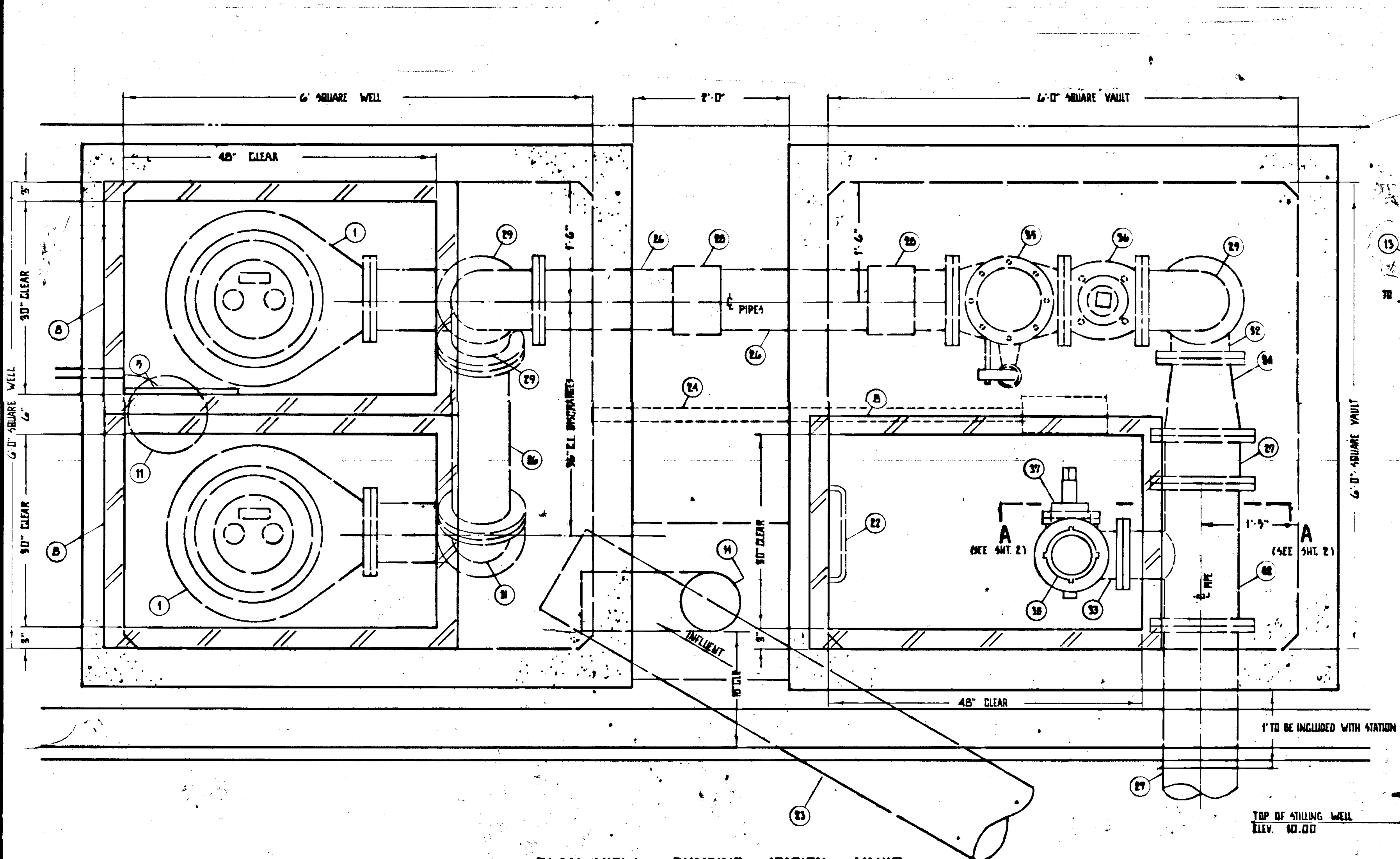
PLAN VIEW: 10" D.I.P. FORCE MAIN

SCALE 1": 10'

Δ AS BUILT 7-7-83

TUSTIN AVENUE PUMP STATION RELOCATION & REMODEL	SHEET 3 OF 5

S-83-43

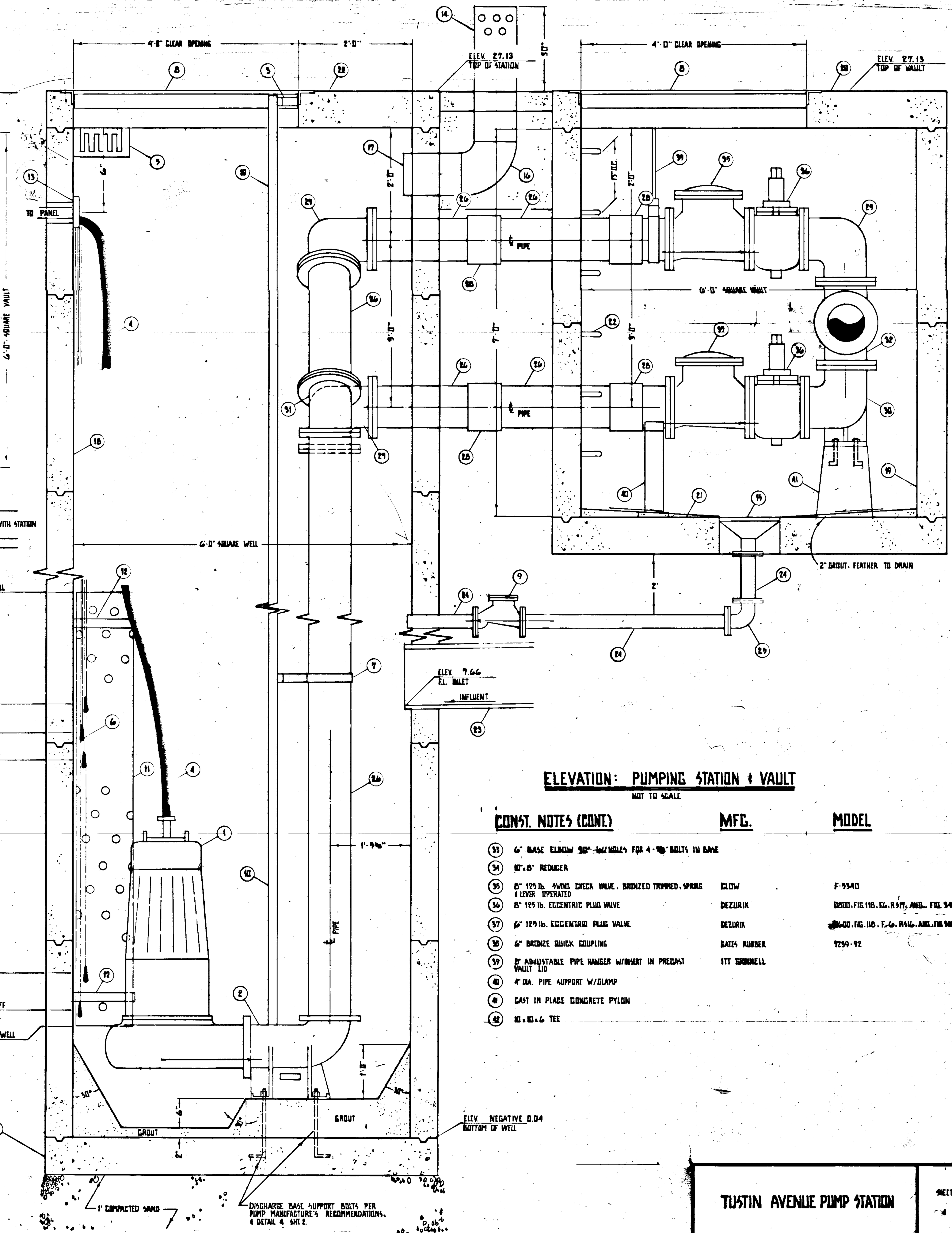


PLAN VIEW: PUMPING STATION & VAULT

NOT TO SCALE

CONSTRUCTION NOTES:

		MFG.	MODEL
1	8" H.H. CP-3201 SEWAGE PUMP WITH IMPELLER 457, 460 V., 3 Ø, 60 HZ, 47 H.P. (FURNISHED BY DISTRICT)	FLYGT	8" H.H. CP-3201
2	8" DISCHARGE BASE & ELBOW. (FURNISHED BY DISTRICT)	FLYGT	321-31-05
3	UPPER GUIDE BAR BRACKET. (FURNISHED BY DISTRICT)	FLYGT	14-58-93-25
4	POWER CABLE WITH WATER TIGHT CONNECTIONS. (FURNISHED BY DISTRICT)		
5	CABLE HOLDER ASSEMBLY. (FURNISHED BY DISTRICT)	FLYGT	14-58-94-05
6	DISPLACEMENT TYPE LIQUID LEVEL REGULATORS (FURNISHED BY DISTRICT)	FLYGT	ENH-10
7	INTERMEDIATE GUIDE BAR BRACKET, 1 PER PUMP. (STAINLESS STEEL)	FLYGT	
8	ALUMINUM ACCESS COVER, W/ STAINLESS STEEL HARDWARE, FRAME TO BE CAST INTO VAULT LID. CONTRACTOR TO DRILL EIGHT (8) 1/2" DIA. HOLES IN COVERS, SPACING PER INSPECTOR.	FLYGT	C-AL 485360000
9	3" HDL BALL CHECK VALVE, TYPE 2016.	FLYGT	
10	3" O.D. A 304 STAINLESS STEEL GUIDE BARS, 2 PER PUMP		
11	12" DIA. PERFORATED FIBERGLASS PIPE STILLING WELL		
12	SUPPORT BRACKET FOR FIBERGLASS PIPE STILLING WELL (STAINLESS STEEL)		
13	NEMA 6 JUNCTION BOX (2 REQ'D.)	KILLARK	DBS 886
14	8" C.I. VENT PIPE EMBEDDED IN 2'x2'x3' DEEP CONCRETE BLOCK	ALHAMBRA FOUNDRY	A-2155
15	GRATE AND FRAME	ALHAMBRA FOUNDRY	A-332-3
16	8" V.C.P. 90° BEND		
17	8" V.C.P. VENT PIPE		
18	72" x 72" REINFORCED CONCRETE PRECAST VAULT SECTIONS WITH T-LOCK AMERPLATE COATING	ASSOCIATED CONCRETE PRODUCTS	6060
19	72" x 72" REINFORCED CONCRETE PRECAST VAULT SECTIONS	ASSOCIATED CONCRETE PRODUCTS	6060
20	REINFORCED CONCRETE PRECAST VAULT LID. (ACCESS COVER FRAMES TO BE PRECAST IN LID.)	ASSOCIATED CONCRETE PRODUCTS	6060
21	REINFORCED CONCRETE PRECAST VAULT BASE. (SUPPORT BOLTS FOR PUMP DISCHARGE BASE TO BE ANCHORED IN BASE)	ASSOCIATED CONCRETE PRODUCTS	6060
22	ACCESS STEPS, 15" OC. 6 REQUIRED. (GALVANIZED STEEL)		
23	10" V.C.P. SEWER, SEE SHT 3.		
24	3" C.I. DRAIN PIPE		
25	3" 90° ELBOW		
26	8" DUCTILE IRON PIPE		
27	10" DUCTILE IRON PIPE		
28	8" FLEX-COUPLING	SMITH-BLAIR	TYPE 431
29	8" 90° ELBOW		
30	8" 90° BASE ELBOW W/ HOLES DRILLED FOR 4-¾" BOLTS IN BASE		
31	8" 45° ELBOW		
32	8"x8"x8" TEE		



ELEVATION: PUMPING STATION & VAULT

NOT TO SCALE

CONST. NOTES (CONT.)

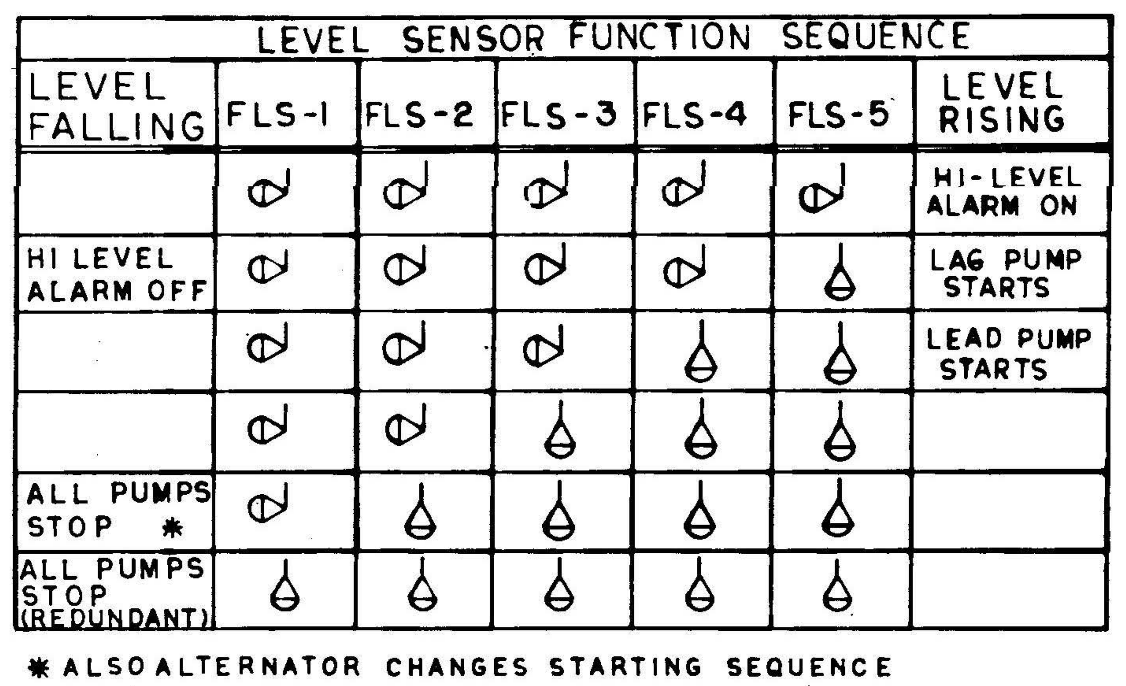
		MFG.	MODEL
33	6" BASE ELBOW 90° W/ HOLES FOR 4-¾" BOLTS IN BASE		
34	10"x8" REDUCER		
35	8" 125 lb. SWING CHECK VALVE, BRONZED TRIMMED, SPRING & LEVER OPERATED	CLOW	F-5340
36	8" 125 lb. ECCENTRIC PLUG VALVE	DEZURIK	0800, FIG. 118, F6, R517, ANG. FIG. 344.0000
37	6" 125 lb. ECCENTRIC PLUG VALVE	DEZURIK	0600, FIG. 118, F6, R416, ANG. FIG 341.06.00
38	6" BRONZE QUICK COUPLING	GATES RUBBER	7239-92
39	8" ADJUSTABLE PIPE HANGER W/ INSERT IN PRECAST VAULT LID	ITT GRINNELL	
40	4" DIA. PIPE SUPPORT W/ CLAMP		
41	CAST IN PLACE CONCRETE PYLON		
42	10x10x6 TEE		

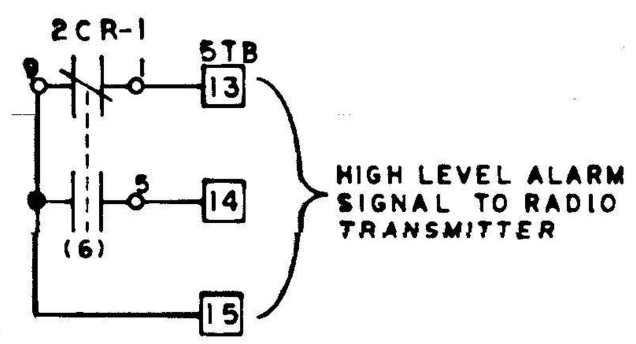
TUSTIN AVENUE PUMP STATION

RELOCATION & REMODEL

SHEET 4 OF 5

S-83-4.4





NOTES:

1. CIRCUIT CONDITION:
   POWER OFF
   SELECTOR SWITCHES IN "AUTO"
   LIQUID AT LOWEST LEVEL
2. WIRING SHOWN AS DASHED LINES REPRESENT CONNECTIONS MADE BY CUSTOMER.
3. INTRINSICALLY SAFE RELAYS (ISR) ARE U.L. APPROVED FOR ACTUATION BY LOW ENERGY PILOT CIRCUITS EXTENDING INTO HAZARDOUS AREA.

NEMA 4 ENCLOSURE: 42 X 30 X 8"

U.L. APPROVED

COSTA MESA SANITARY DISTRICT

'AS-BUILT' - ELECTRICAL DIAGRAM

TUSTIN PUMP STATION REMODEL — 'SHEET 5A'

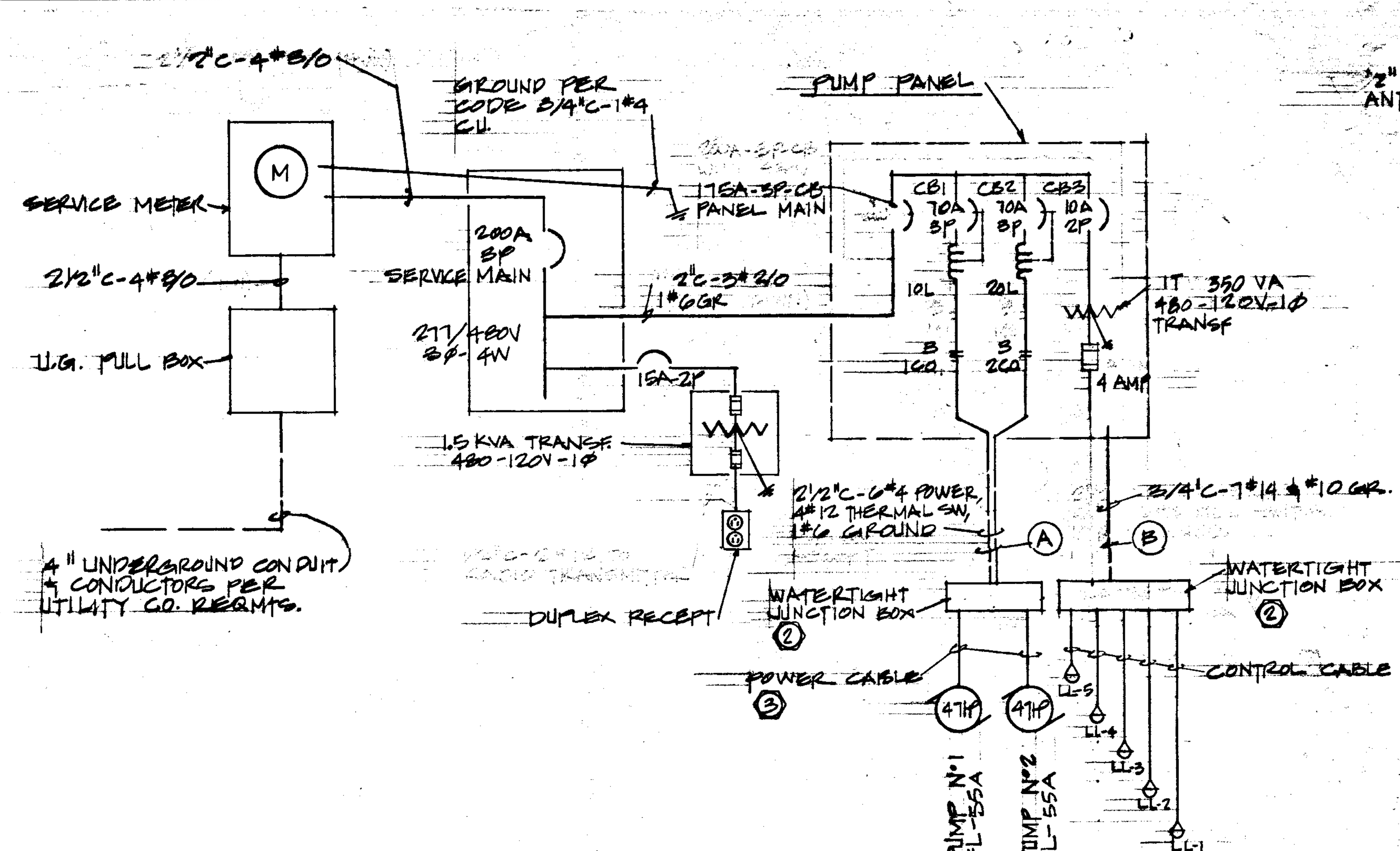
FLYGT
FLYGT CORPORATION NORWALK CONN 06856

F404 DUPLEX CONTROL FOR FM APPROVED PUMPS

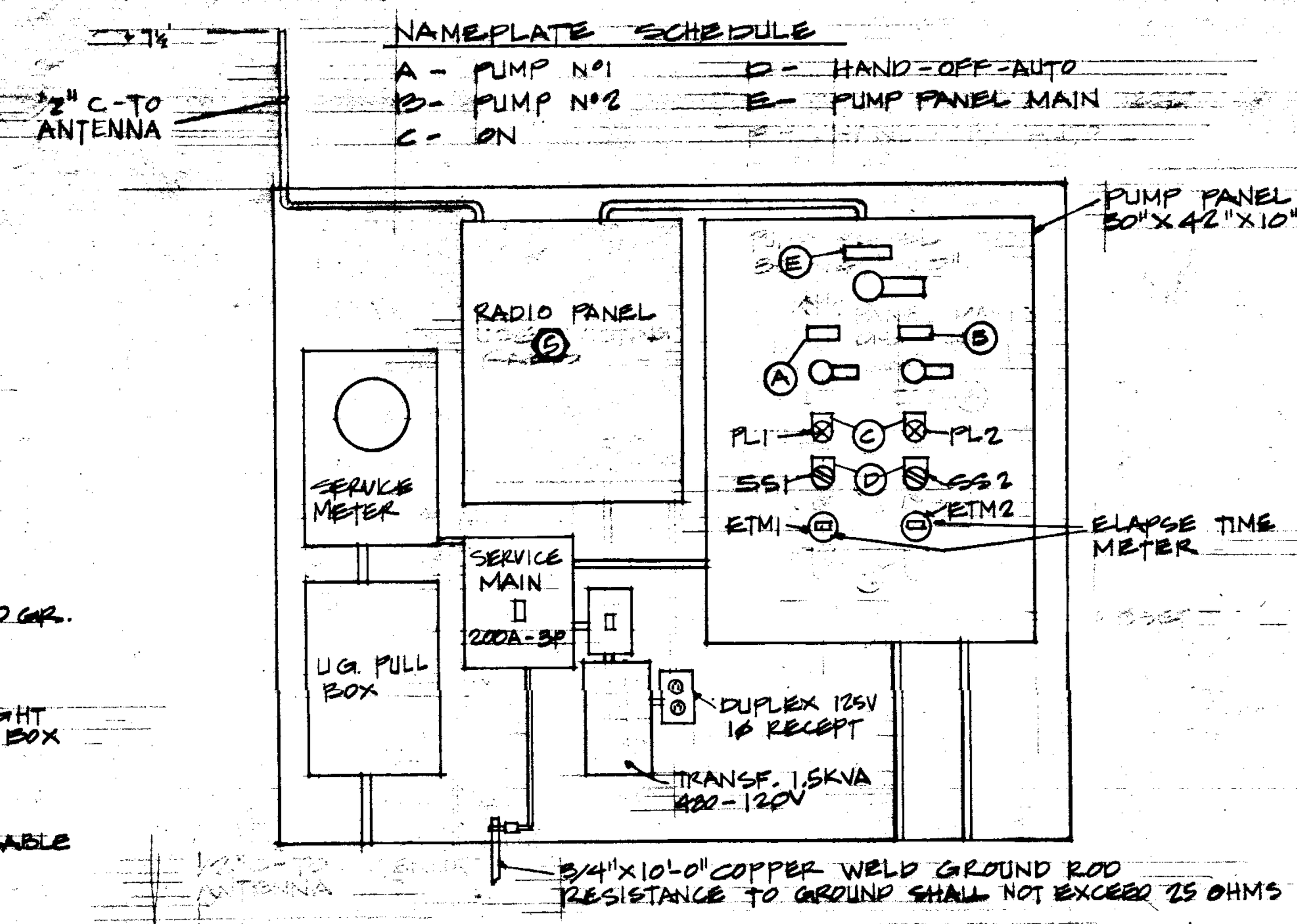
A	REVISED TO U.L. STANDARDS	JCM	83-2-28	
	REVISION	BY	DATE	APPVD

DRAWN 83-1-20 JCM
CHECKED 83-1-21
MADE FROM 11D0597
C-14271
DRAWING NO 11D0784
REV A

S-83-45A



SINGLE LINE DIAGRAM
N.T.S.



CONTROL CENTER INTERIOR ELEVATION
N.T.S.

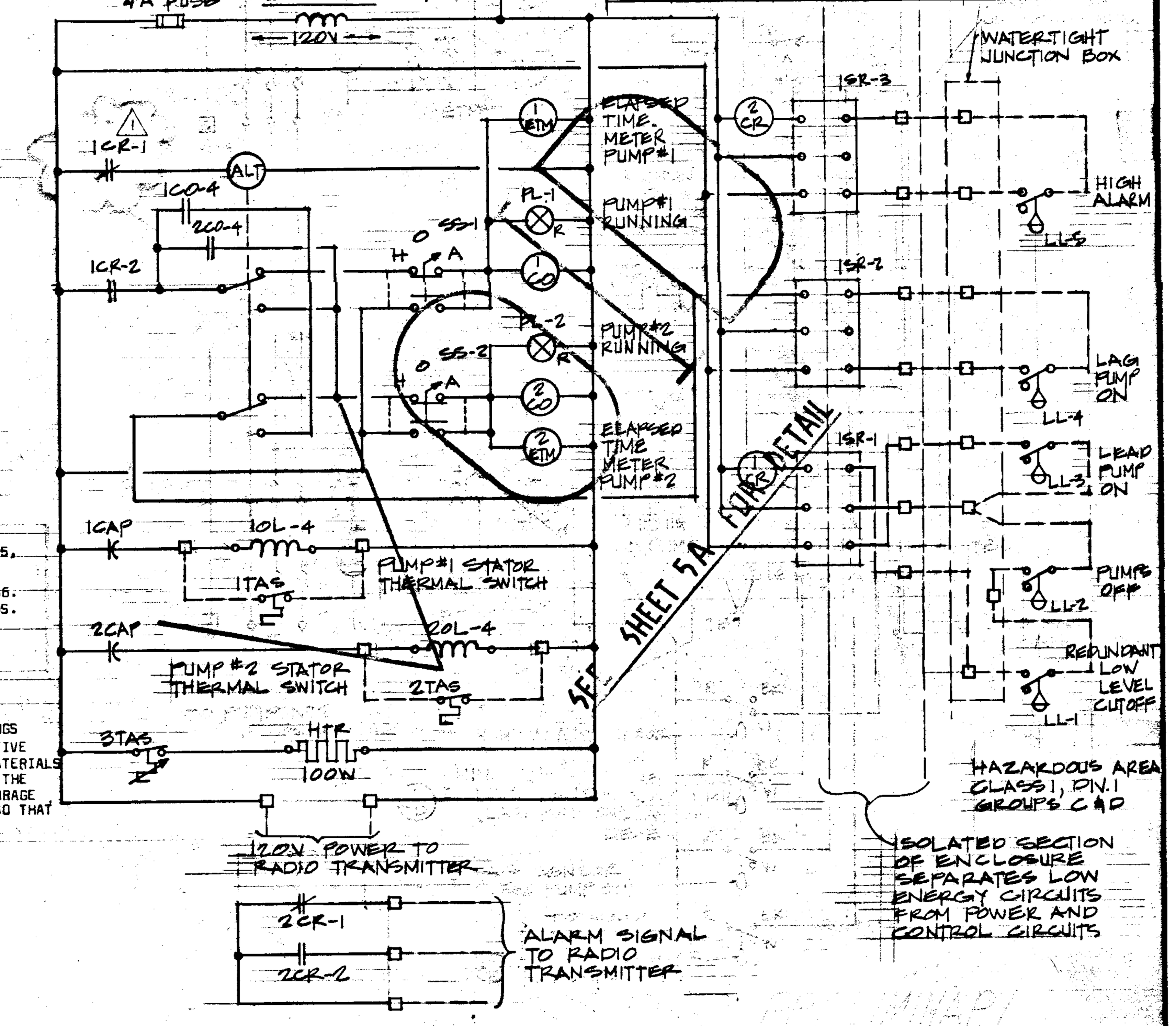
REFERENCE NOTES:

1. CONTACT BOB ACHZIGER, SOUTHERN CALIFORNIA EDISON CO., 714/973-5491, EXT. 54275, 48 HOURS IN ADVANCE FOR UNDERGROUND INSPECTION.
2. SUBMERSIBLE JUNCTION BOX, 8" X 8" X 6"--EQUAL TO KILLARK DBS SERIES NO. DBS886. ALL CONDUIT AND CABLE CONNECTIONS SHALL BE IN ACCORDANCE WITH NEMA 6 STANDARDS.
3. SUPPLY CABLE: 3 #6 POWER, 2 #10 THERMAL SWITCH, 1 #8 GROUND.
4. WINDOW WITH WIRE GLASS IN FRONT OF SERVICE METER.
5. REMOVE RADIO EQUIPMENT FROM EXISTING PUMP CONTROL CENTER AND INSTALL IN NEW CONTROL CENTER.
6. WHERE EXISTING DEVICES ARE TO BE ABANDONED, THE BOXES, CONDUITS, WIRES, FITTINGS ETC. THAT ARE NO LONGER ACTIVE SHALL BE REMOVED BACK TO THE PANEL OR LAST ACTIVE DEVICE. PLUG ALL UNUSED OPENINGS IN BOXES AND ELECTRICAL ENCLOSURES. ALL MATERIALS AND EQUIPMENT SALVAGED FROM THE EXISTING SYSTEM SHALL REMAIN THE PROPERTY OF THE OWNER. THE E. C. SHALL DEPOSIT THESE SALVAGED MATERIALS AND EQUIPMENT IN STORAGE AREAS PER THE OWNERS INSTRUCTIONS. THE E. C. SHALL SCHEDULE ALL SHUT-DOWNS SO THAT THERE IS NO INTERRUPTION TO THE NORMAL OPERATION OF THE FACILITY.

* ALTERNATOR CHANGES STARTING SEQUENCE.

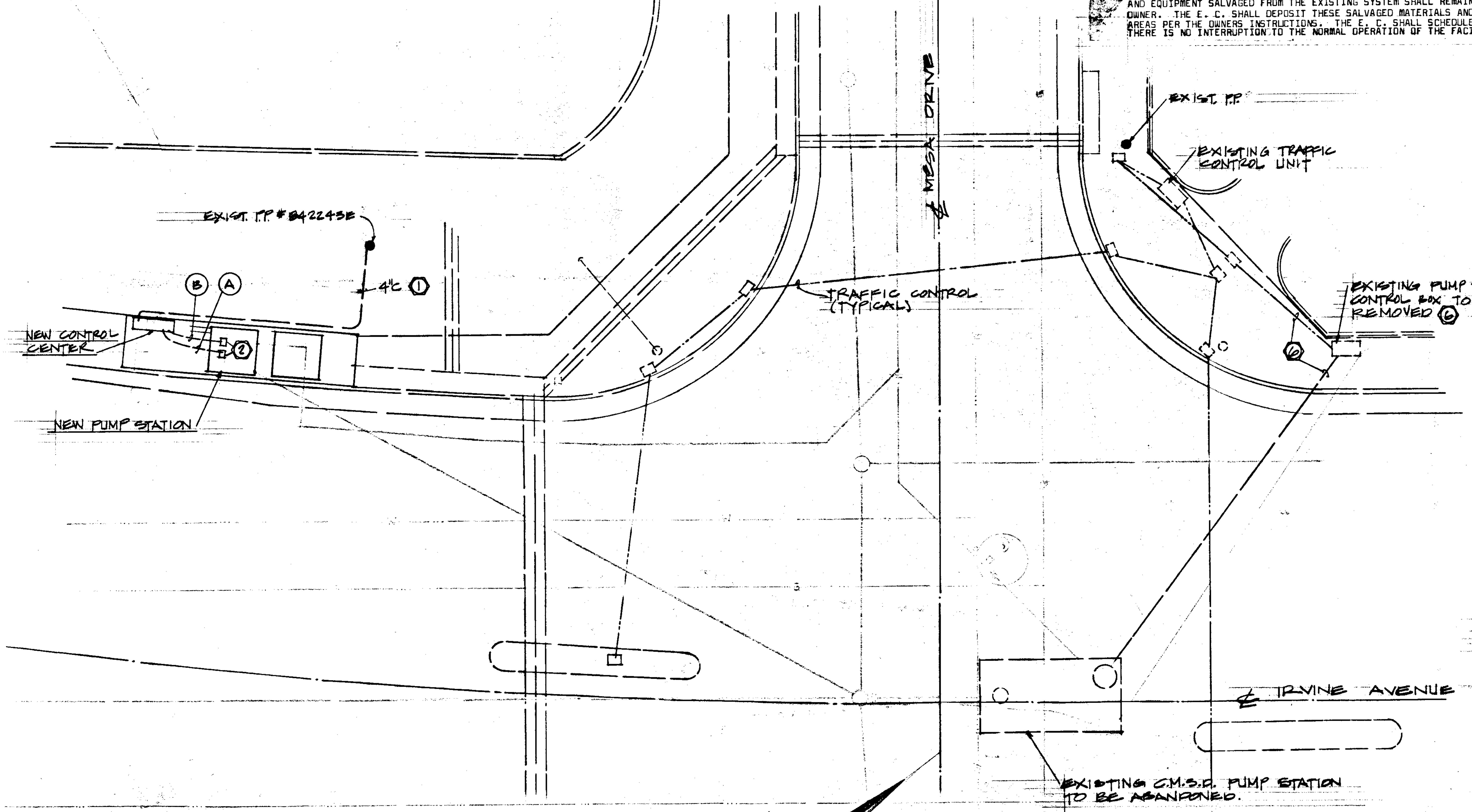
LEVEL SENSOR FUNCTION SEQUENCE

LEVEL FALLING	LL-1	LL-2	LL-3	LL-4	LL-5	LEVEL RISING
						HIGH ALARM
						LAG PUMP STARTS
						LEAD PUMP STARTS
ALL PUMPS STOP *						
ALL PUMPS STOP						

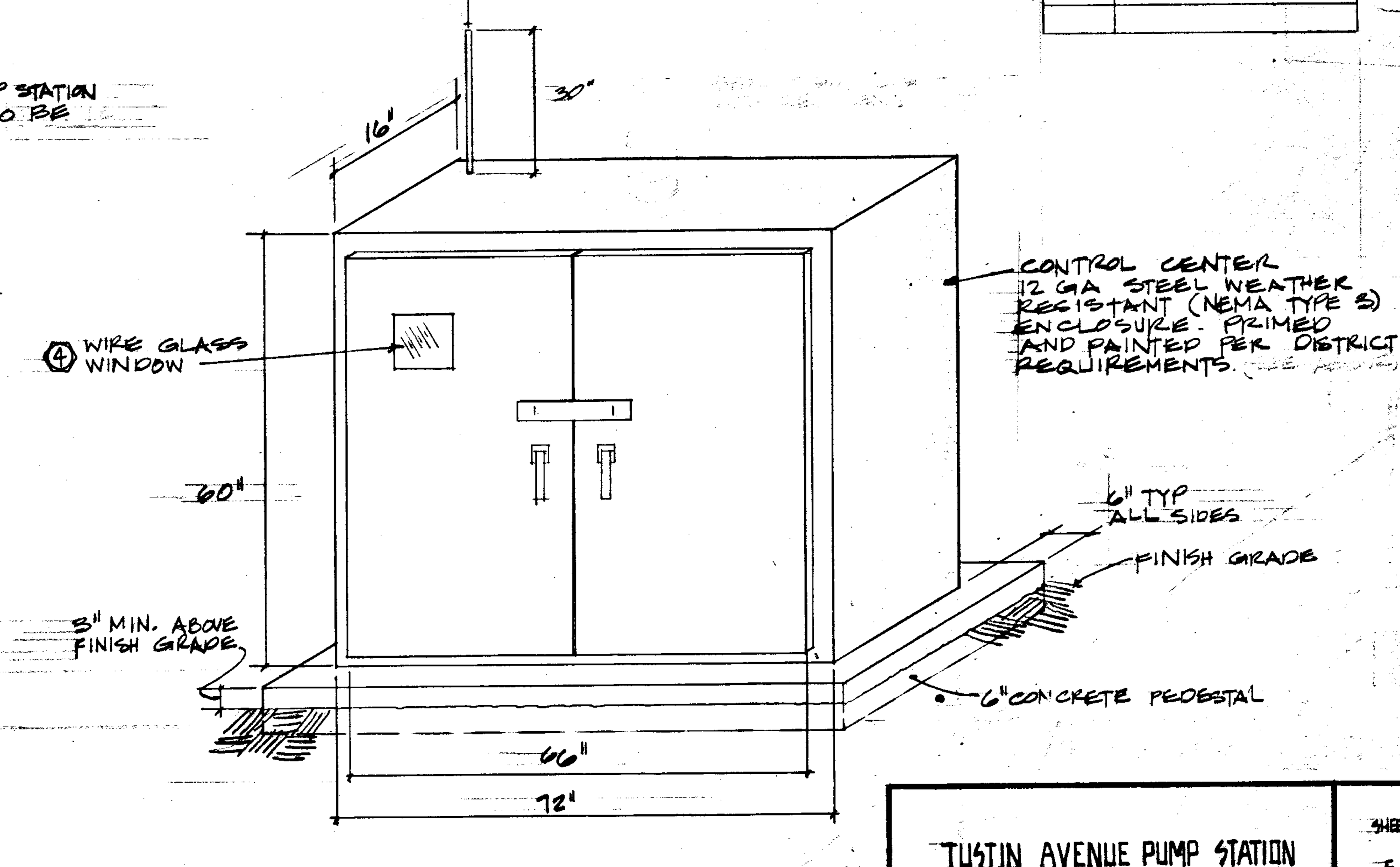


CONTROL DIAGRAM
N.T.S.

DATE	REVISION	
1-18-83	⚠ CHANGED 1CR-1	AB



ELECTRICAL SITE PLAN
SCALE: 1" = 10'-0"



CONTROL CENTER
N.T.S.

TUSTIN AVENUE PUMP STATION RELOCATION & REMODEL	SHEET 5 OF 5

S-83-4.5

Appendix 3.3

Eldon Avenue Pump Station

As-Built Plans

S-75-6.1

Project Nº 1112100-33

PLAN AND PROFILE FOR THE CONSTRUCTION OF

SANITARY SEWER FORCE MAIN
IN
MESA DRIVE, NEWPORT BLVD. & FAIR DRIVE
FOR
ELDEN AVENUE PUMPING STATION

ESTIMATE OF QUANTITIES

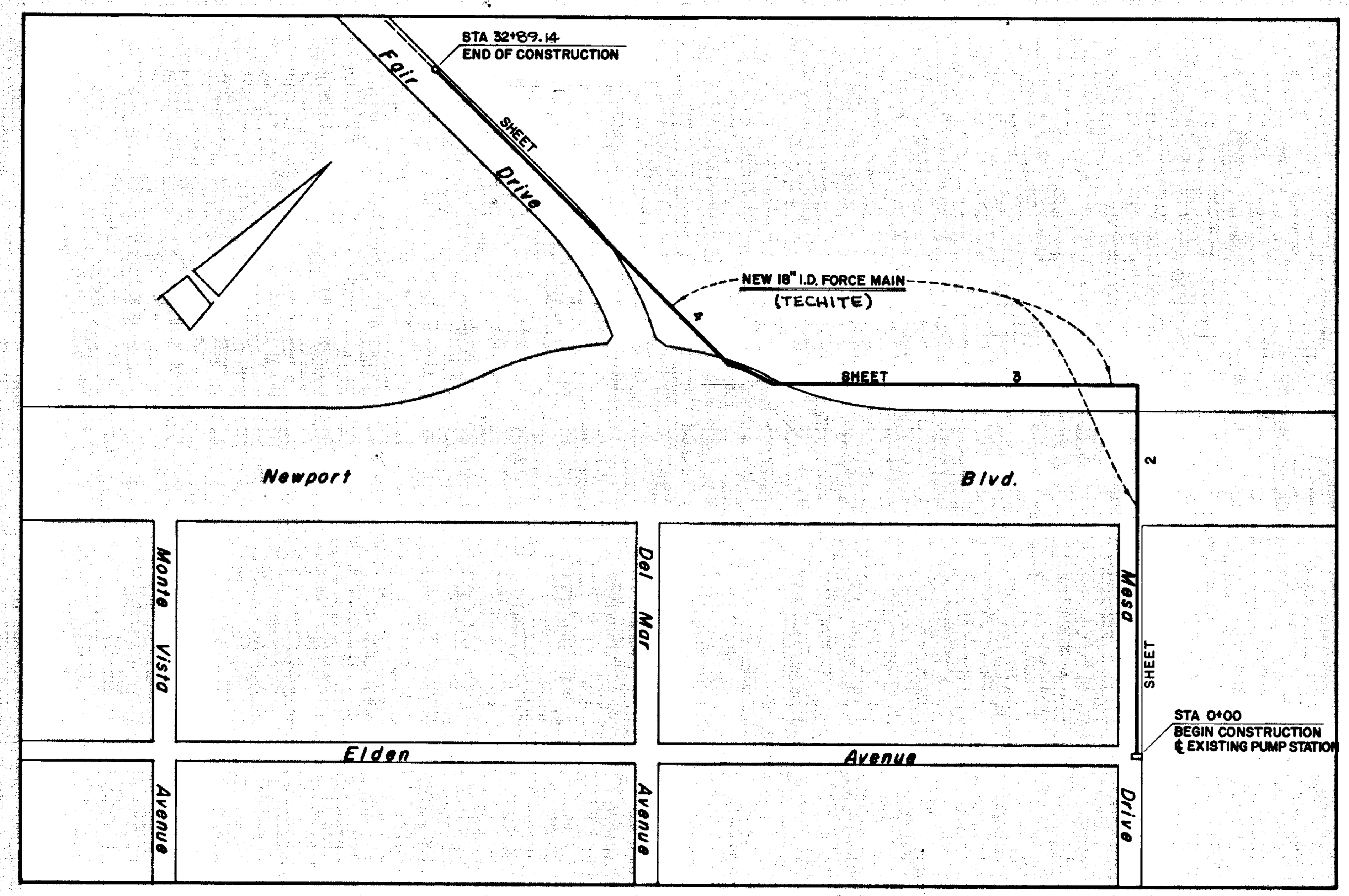
Item Nº	Description	Quantity
1	18" I.D. Force Main (Techite)	3243 L.F.
2	Modify Existing 60" I.D. Special Manhole (Plastic Lined)	1 Each
3	Class "B" Concrete Thrust Blocks	9 C.Y.
4	Connections To Existing Force Main	2 Each
5	Concrete Vault, Valves, Appurtenances & Connection To Existing Pump Station	Lump Sum
6	Aggregate Bedding	380 Tons
7	Adequate sheeting, shoring, & bracing as required	Lump Sum
8	30" I.D. Steel Casing ($\frac{3}{8}$" thick walls)	143 L.F.

GENERAL NOTES

1. All sewer construction shall conform to the Standards of the Costa Mesa Sanitary District and shall be completed to the satisfaction of the District Engineer.
2. Stationing refers to the centerline of proposed sewer force main.
3. Manholes shall be brick or precast concrete as manufactured by Associated Concrete Products, Inc., or approved equal. Sewer manhole frame and cover shall be Alhambra Foundry A-1270 or approved equal.
4. Clay pipe joint compound shall be "CPI-2", "JC-60". Mechanical compression joints shall be "WEDGE-LOCK", "SPEED-SEAL MAINLINE" or approved equal. In no case will jointing material using neat Portland Cement, mortar or grout be permitted.
5. Contractor shall obtain a permit from the City of Costa Mesa Street Department prior to starting work. Request for inspection by the District Engineer shall be made 48 hours in advance of performing any work. Telephone (714) 556-5400.
6. Contractor shall be responsible for maintaining warning devices, lights, and flagmen in accordance with "Manual of warning signs, lights, and devices for use in performance of work upon Highways" issued by the State of California, Department of Public Works, 1973.

UTILITY COMPANIES:

- Pacific Telephone – (714) 633-0811
- So. California Edison – (714) 835-3833
- So. California Gas Co. – (714) 538-0211
- Costa Mesa County Water Dist. – (714) 556-5210
- Santa Ana Heights Water Co. – (714) 545-1060



LOCATION MAP

SCALE: 1" = 300'

BENCH MARK

"△" center of curb return at northeast corner of Fair Drive and Orange County Fair Main Entrance. City of Costa Mesa Datum.

Bench Mark Nº 106 Elevation = 67.80

NOTICE TO CONTRACTORS

The existence and location of any underground pipes or structures shown on these plans are obtained by a search of the available records. To the best of our knowledge there are no known existing utilities except as shown on these plans. The contractor is required to take due precautionary measures to protect the utility lines shown and any other lines not of record or not shown. If the contractor, while performing the contract, discovers utility facilities not shown in the plans, he shall immediately notify the district engineer, in writing.

Engineer: Costa Mesa Sanitary District

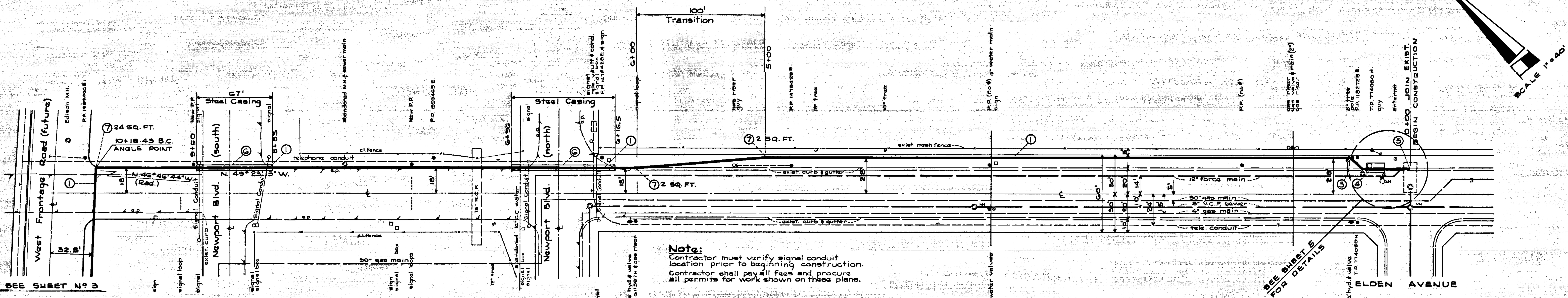
Approved: Donald E. Stevens Date: 1-13-75
Donald E. Stevens R.C.E. 11066

"AS BUILT" 6-30-1975 M.D.T. PERMIT Nº 013

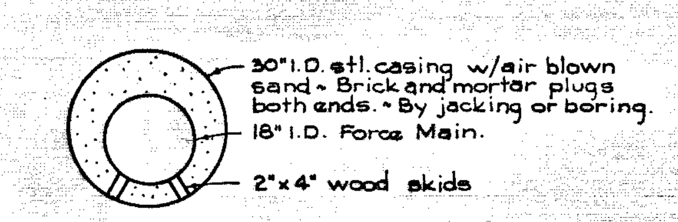
CITY OF COSTA MESA, ORANGE COUNTY, CALIFORNIA

(Elden Ave. P.S. ~ Force Main)
SHEET 1 OF 6

J.N. 1276 F.B. 17/46-48~50-52



Note:
Contractor must verify signal conduit location prior to beginning construction.
Contractor shall pay all fees and procure all permits for work shown on these plans.



30" I.D. STEEL CASING

CONSTRUCTION NOTES

1. CONST. 18" FORCE MAIN (TECHITE).
3. JOIN EXIST. 12" FORCE MAIN ~ SEE SHEET 5.
4. CONST. VAULT W/ BY-PASS ~ SEE SHEET 5.
5. JOIN PUMP STATION ~ SEE SHEET 5 FOR DETAIL.
6. INSTALL 30" I.D. STEEL CASING (3/8" THICK WALL) BY JACKING OR BORING.
7. CONST. CONCRETE THRUST BLOCK. (AREA AGAINST UNDISTURBED SOIL AS SHOWN.)

S-75-62

J.N. 1276 F.B. 17/46-48 ~ 50-52 & 23/13

S-75-6.3


CONSTRUCTION NOTES
① CONST. 18" FORCE MAIN (TECHITE).
⑤ JOIN EXIST. 12" FORCE MAIN ~ SEE SHEET 6.
⑦ CONST. CONCRETE THRUST BLOCKS (AREA AGAINST UNDISTURBED SOIL AS SHOWN)
SCALE 1"=40'
22+65.60 B.C.
ANGLE POINT
SEE SHEET 5 FOR DETAILS
N.37°20'41"W. (Rad.)
exist. ch. link fence
exist. 30" gas main
20+04.90 B.C.
Data ~ ℄ 18" Force Main
Δ: 02°11'45"
R: 5032.50'
L: 192.62'
T: 96.42'
telephone conduit
West
Frontage
(Under Construction)
Road
18+28.47 B.C.
ANGLE POINT
⑦ 13 SQ. FT.
176.43'
16+55.65 B.C.
14+63.65 B.C.
Data ~ ℄ 18" Force Main
Δ: 18°06'19"
R: 825.00'
L: 260.70'
T: 131.44'
Data ~ ℄ 18" Force Main
Δ: 05°08'07"
R: 4967.60'
L: 445.22'
T: 222.76'
10+18.43 B.C.
ANGLE POINT
⑦ 24 SQ. FT.
Mesa Drive
Newport Blvd. (south)
12" force main
30" gas main
SEE SHEET Nº 2
22 21 20 19 18 17 16 15 14 13 12 11 10
PROFILE SCALES
HORIZ. 1"=40'
VERT. 1"=4'
Profile: West Frontage Road (centerline finished grade)
Profile: Existing ground over force main
60
50
tele. conduit
18" Force Main
S=0.0120
18" Force Main (Techite)
S=0.0012
54" R.C.P.
22+00 59.44 F.L.
58.22 F.L.
20+04.90 B.C. 57.08 F.L.
55.62 F.L.
18+28.47 B.C. 54.96 F.L.
54.90 F.L.
54.78 F.L.
16+55.65 B.C. 54.70 F.L.
54.66 F.L.
54.54 F.L.
14+63.65 B.C. 54.50 F.L.
54.42 F.L.
54.30 F.L.
54.18 F.L.
54.06 F.L.
10+18.43 B.C. 53.96 F.L.
Sheet 3 of 6 sheets
J.N. 1276 F.B. 17/46-52 & 23/19

Sheet 4 of 6 sheets

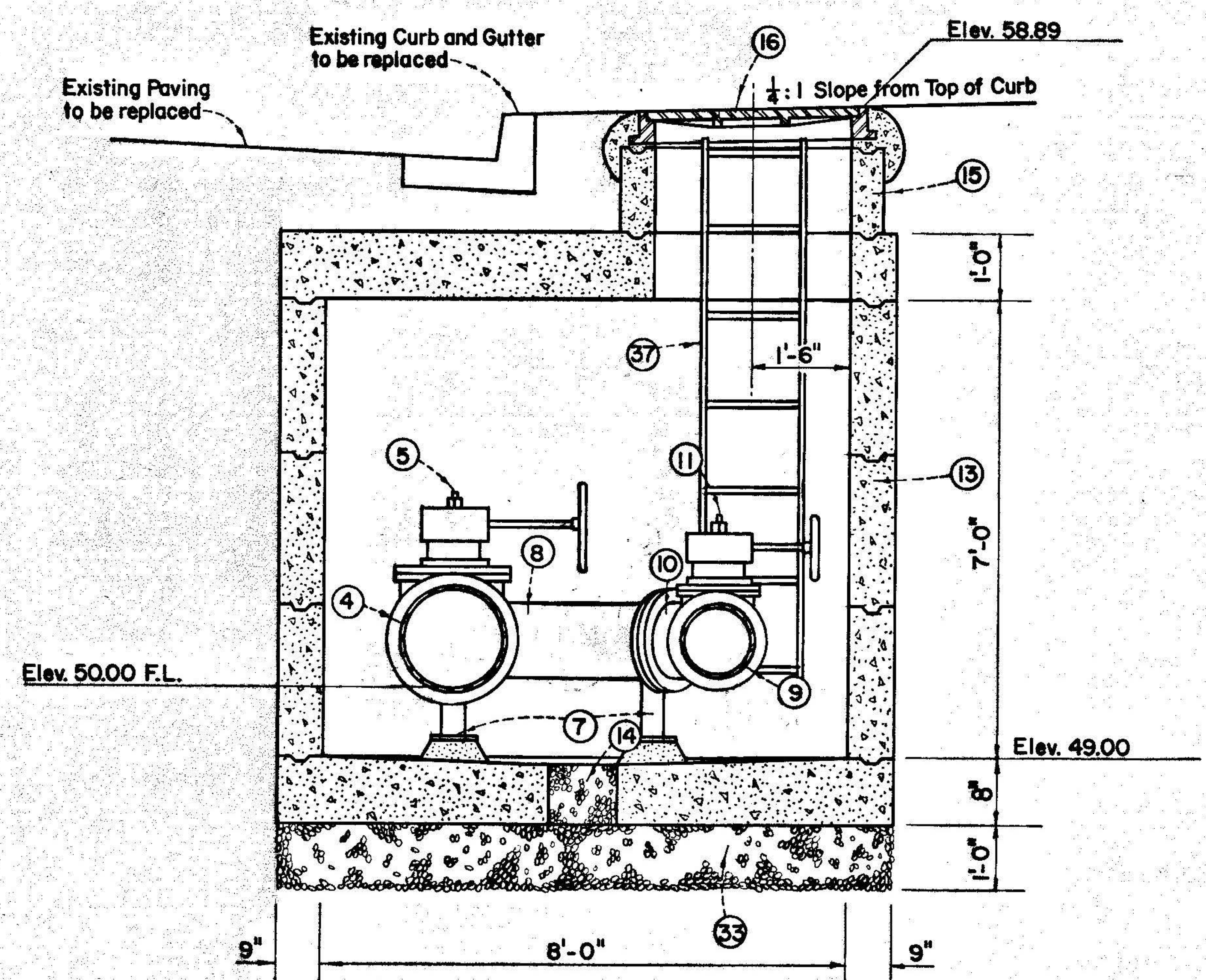
J.N. 1276 F.B. 17/46-48~50-52 & 29/10

S-75-6.4

S-75-6.5

Plan of Force Main Connection to the Existing Elden Avenue Pump Station

Scale: ½"=1'-0"

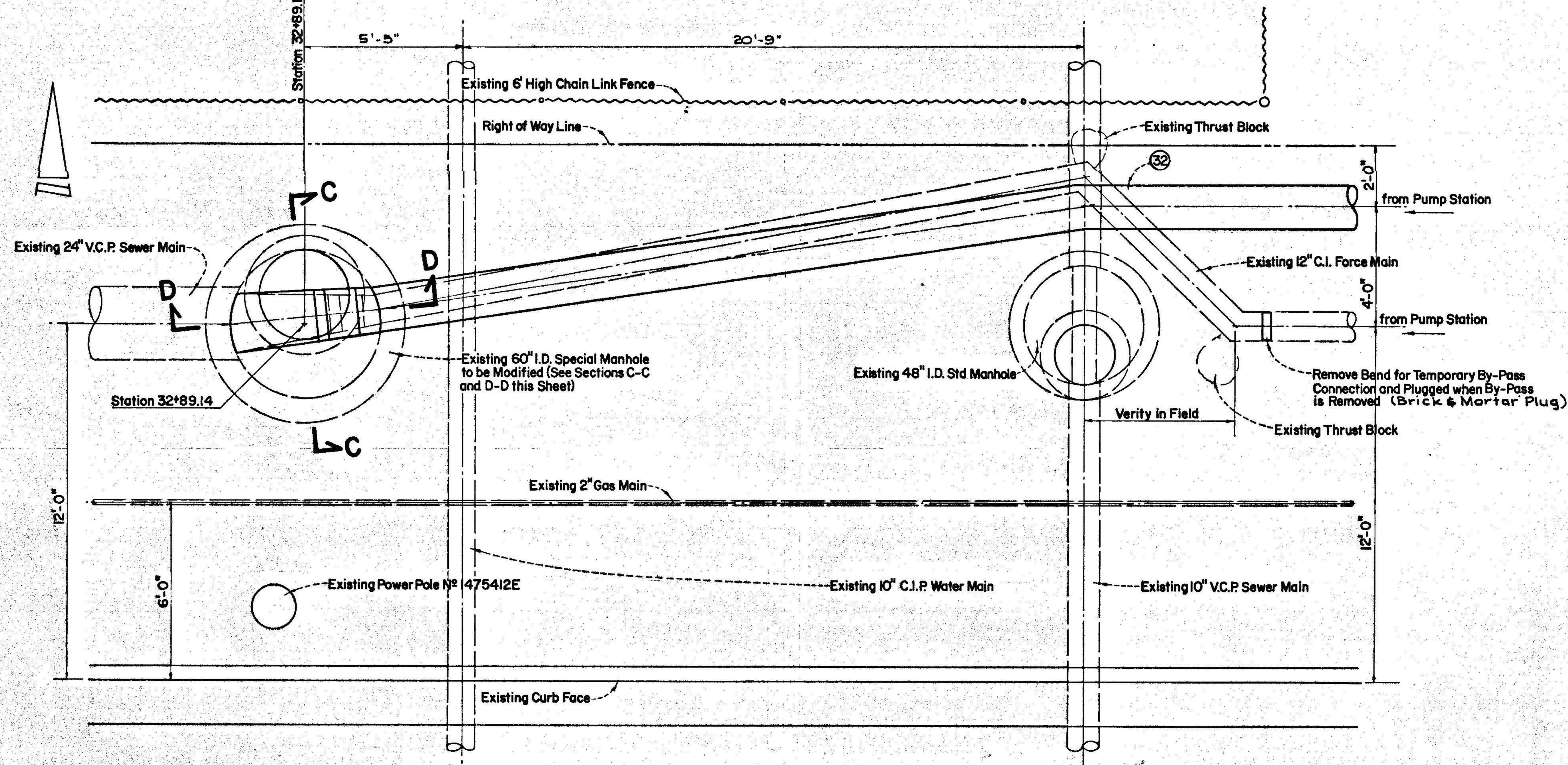


Section A-A of the Valve Vault

Scale: ½"=1'-0"

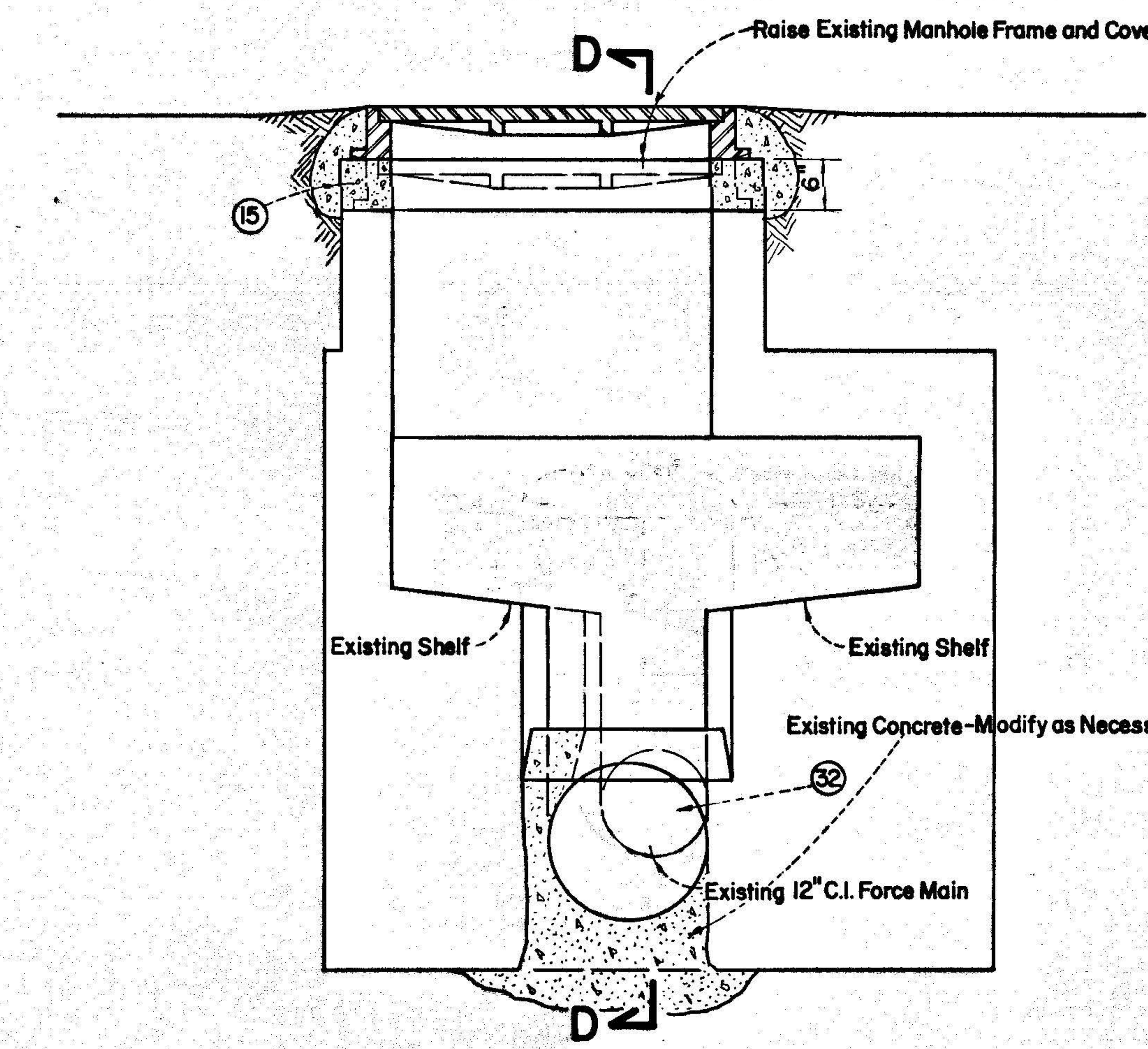
Nº	DESCRIPTION	MFG'R	MODEL
1	PIPE-18" I.D. CML & Epoxy Coated with 18"x8" I.D. CML & Epoxy Coated Reducer	-	-
2	PIPE-18" I.D. CML & CMC	-	-
3	COUPLING ADAPTER-18" I.D. Flanged	Smith-Blair, Inc.	Type 913
4	PIPE-18" I.D. CML & Epoxy Coated	-	-
5	VALVE-18" I.D. Flanged Eccentric, Worm Gear Actuated	DeZurik Corp.	Model 1532
6	PIPE-18" I.D. CML & CMC with 6" I.D. CML & CMC Tee Branch	-	-
7	PIPE REST-4" C.I. with Base Plate One End and Pipe Clamp One End	Alhambra Fdry Co. Ltd.	A-609
8	PIPE-18" I.D. CML & Epoxy Coated with 14" I.D. CML & Epoxy Coated Wye Branch	-	-
9	PIPE-14" I.D. CML, ½ CMC & ½ Epoxy Coated	-	-
10	BEND-14" I.D. Flanged C.I. 45° Short Body	-	-
11	VALVE-14" I.D. Flanged Eccentric, Worm Gear Actuated	DeZurik Corp.	Model 1532
12	BLIND FLANGE-for 14" I.D. Flanged C.I. Pipe	-	-
13	VAULT-8'x14'x7' Height I.D. Concrete, Quikset	Associated Conc. Prod., Inc.	Nº PV-954
14	SUMP DRAIN-14" Dia. Hole Filled with Gravel	-	-
15	GRADE RING-36" I.D. Concrete	-	-
16	FRAME and COVER-36" I.D. Manhole	Alhambra Fdry Co. Ltd.	A-1251
17	THRUST BLOCK-Concrete, minimum area against undisturbed soil as shown	-	-
18	PIPE-18" I.D. CML & CMC with 12" I.D. CML & CMC Tee Branch	-	-
19	GATE VALVE-6" I.D., Non-Rising Stem, Iron Body, Flanged, A.W.W.A. C-500 Specs, 125 lbs	-	-
20	VALVE BOX-Concrete with Extension Pipe	Brooks Prod. Inc.	4-TT Series
21	PIPE-6" I.D. Flanged C.I. 6" Long	-	-
22	Bend-6" I.D. Flanged C.I. 90° Long Body	-	-
23	PIPE-6" I.D. Galv. Threaded Both Ends with Screw-On Flange One End	-	-
24	COUPLING-6" I.D. Bronze Quick Connecting	Gates Rubber Co.	Nº 7239-92
25	GRADE RING-24" I.D. x 16" Long Concrete	-	-
26	FRAME and COVER-24" I.D. Manhole	Alhambra Fdry Co. Ltd.	A-1270
27	PIPE-12" I.D. CML	-	-
28	Coupling-Flexible 12" I.D.	-	-
29	GATE VALVE-12" I.D., Non-Rising Stem, Iron Body, Flanged, A.W.W.A. C-500 Specs, 125 lbs	-	-
30	PIPE-12" I.D. C.I.	-	-

Nº	DESCRIPTION	MFG'R	MODEL
31	COUPLING ADAPTER-12" I.D. Flanged	Smith-Blair, Inc.	Type 912
32	FORCE MAIN-18" I.D. Techite	-	-
33	AGGREGATE BEDDING	-	-
34	PIPE-18" I.D. CML & CMC with 18"x12" CML & CMC Reducer & 18" I.D. CML & CMC Wye Branch	-	-
35	PIPE-12" I.D. CML & CMC	-	-
36	PIPE-12" I.D. CML & CMC with 12" I.D. CML & CMC Tee Branch	-	-
37	LADDER-Galv.	-	-
38	COUPLING-Flexible 18" I.D.	Smith-Blair, Inc.	Type 411



Plan of Force Main Connection to 60" I.D. Special Manhole

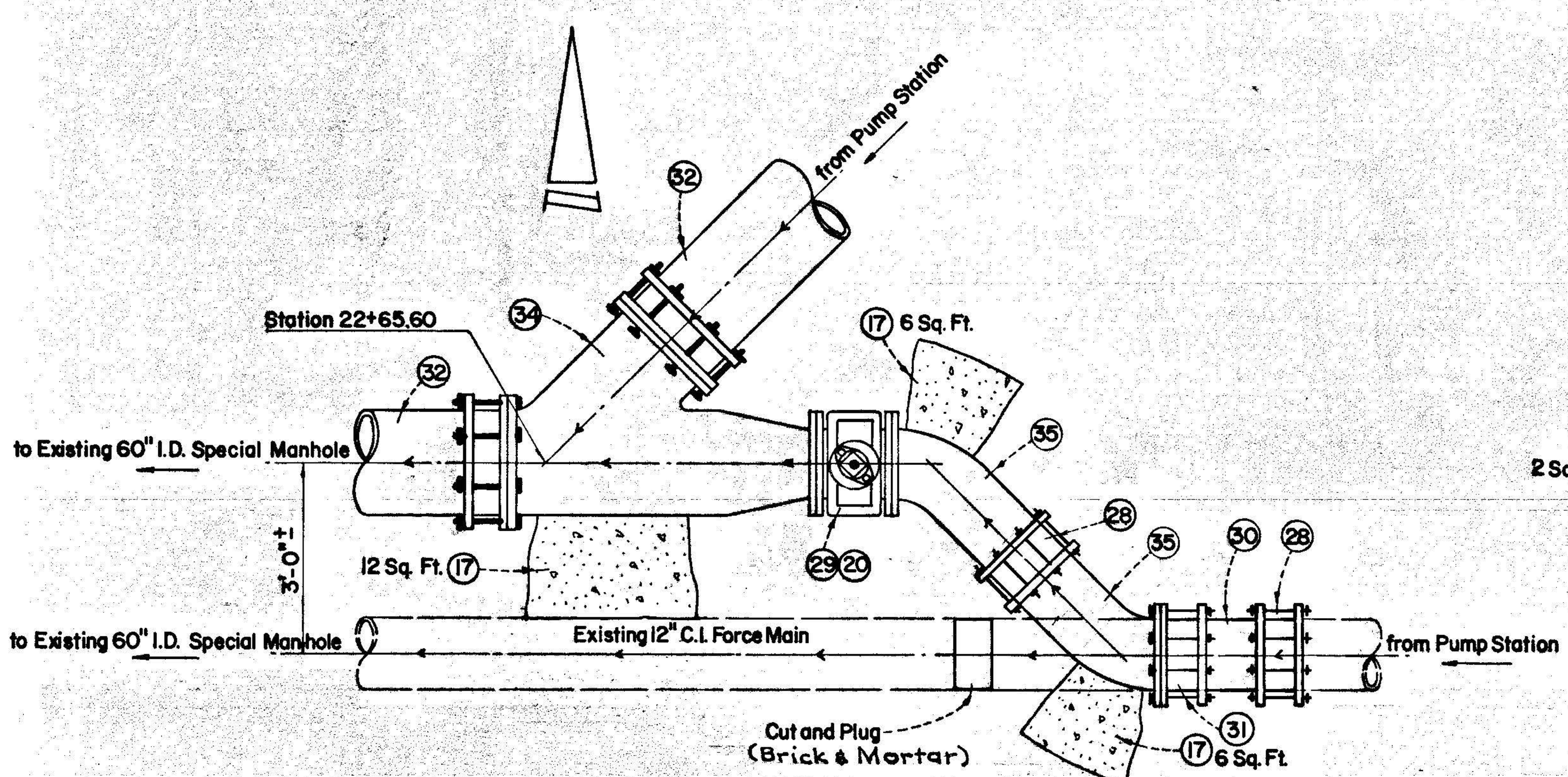
Scale: $\frac{3}{8}$"=1'-0"



Section C-C of the 60" I.D. Special Manhole

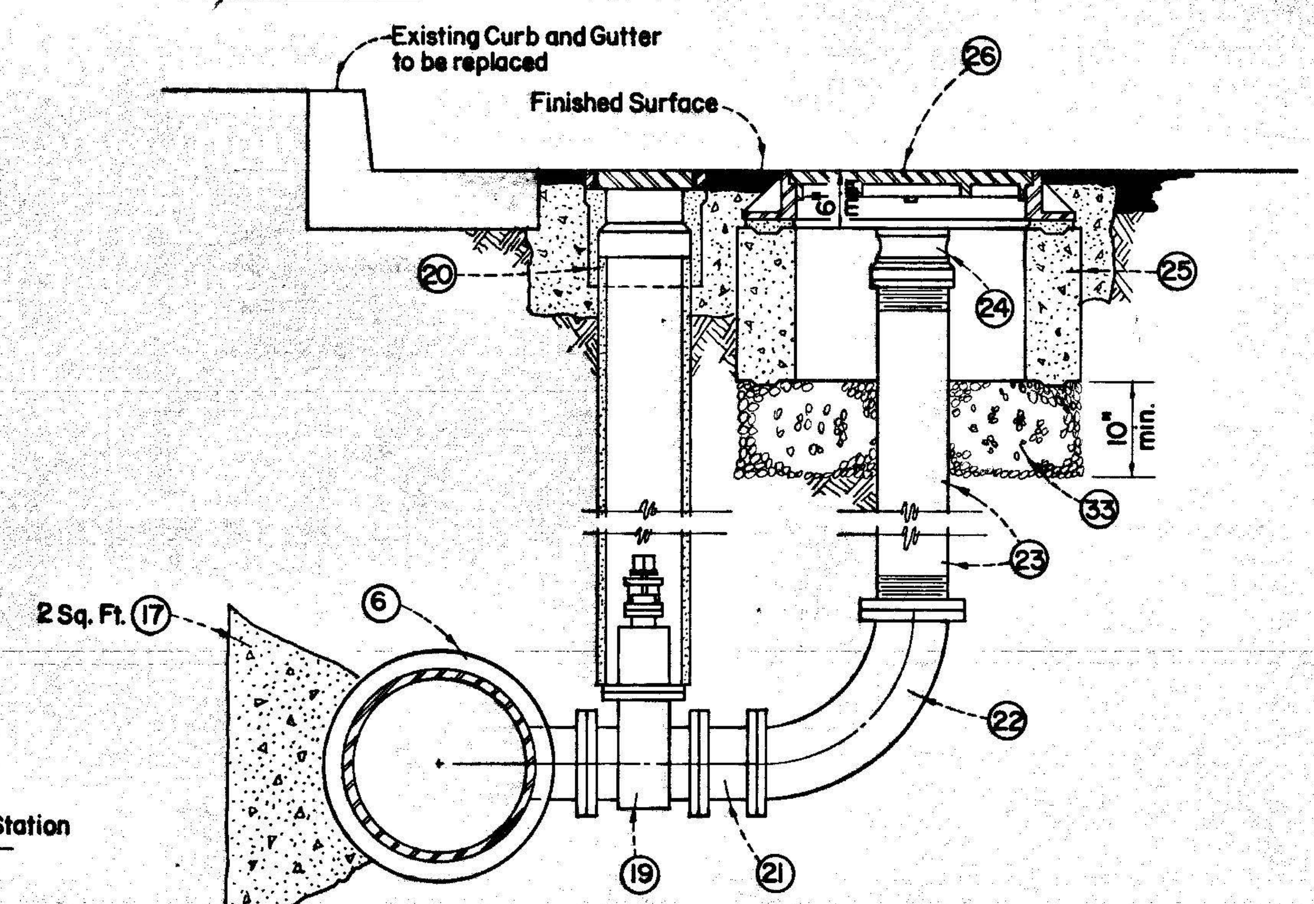
Scale: $\frac{3}{4}$"=1'-0"

NOTE: THE GRADE & MANHOLE RINGS, MANHOLE TOP, SHELVES & CHANNEL TO SPRING LINE OF THE 60" I.D. SPECIAL MANHOLE INTERIOR SHALL BE PLASTIC LINED WITH AMER-PLATE OR APPROVED EQUAL



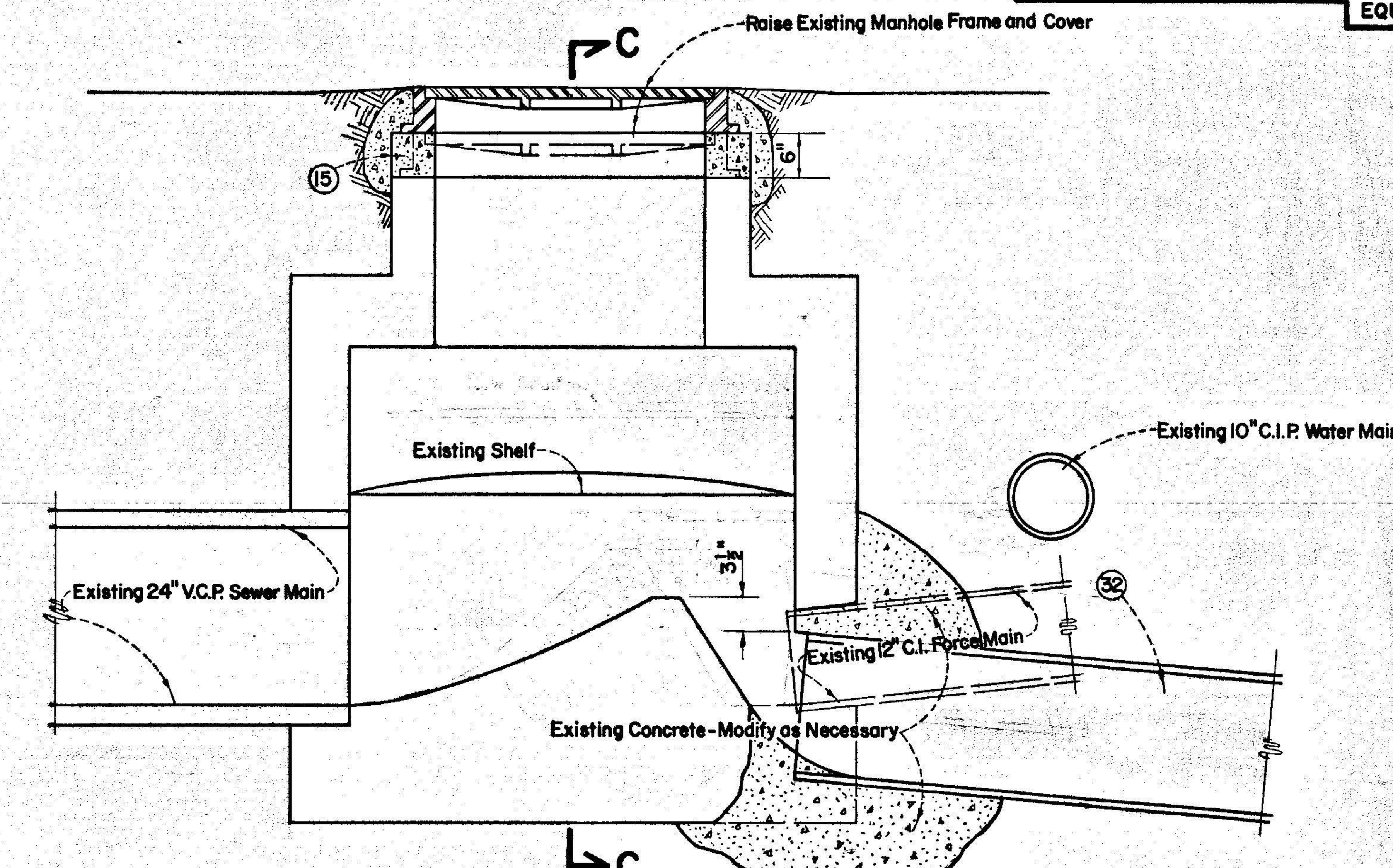
Plan of By-Pass Connection Station 22+65.60

Scale: $\frac{1}{2}$"=1'-0"



Section B-B of By-Pass Connection

Scale: $\frac{3}{4}$"=1'-0"



Section D-D of the 60" I.D. Special Manhole

Scale: $\frac{3}{4}$"=1'-0"

NOTE: SEE SHEET 5 FOR MATERIAL LISTING

S-75-6.6

Appendix 4

Design Criteria

STANDARD PLANS
AND SPECIFICATIONS
FOR
THE CONSTRUCTION OF
SANITARY SEWERS

COSTA MESA SANITARY DISTRICT
ORANGE COUNTY, CALIFORNIA

2018 LOS ANGELES COUNTY

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow
Apartment Buildings:		
Bachelor or Single dwelling units	Apt	150 gal/D.U.
1 bedroom dwelling units	Apt	200 gal/D.U.
2 bedroom dwelling units	Apt	250 gal/D.U.
3 bedroom or more dwelling units	Apt	300 gal/D.U.
Auditoriums, churches, etc.	Aud	5 gal/seat
Automobile parking	P	25 gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20 gal/seat
Commercial Shops & Stores clubhouse	CS	100 gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500 gal/bed
Hospitals (convalescent)	HC	85 gal/bed
Hotels athlete accommodations	H	150 gal/room
Medical Buildings	MB	300 gal/1000 sq ft gross floor area
Motels	MB	150 gal/unit
Office Buildings	Off	200 gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50 gal/seat
Schools:		
Elementary or Jr. High	S	10 gal/student
High Schools	HS	15 gal/student
Universities or Colleges	U	20 gal/student
College Dormitories	CD	85 gal/student

*Multiply the average daily flow by 2.5 to obtain the peak flow

Zoning Coefficients

Zone	Coefficient (cfs/Acre)
Agriculture ----------------------------------	0.001
Residential*:	
R-1 --	0.004
R-2 --	0.008
R-3 --	0.012
R-4 --	0.016*
Commercial:	
C-1 through C-4 ---------------------------	0.015*
Heavy Industrial:	
M-1 through M-4 --------------------------	0.021*

* Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown

* Use 0.001 (cfs/unit) for condominiums only

easements. After reviewing flow coefficients from other districts, Land Use Population statistics for the City of Costa Mesa, Zoning and Development Codes for the Cities of Costa Mesa and Newport Beach, and the County of Orange, it was decided to use the flow coefficients from the prior Master Plan but apply them to the net areas of the parcels. This change reduces the total expected flow from the land uses by between 20 and 25 percent, which is in general agreement with the reduced flows per capita measured by OCSD over the last few decades. The flow coefficients are shown below in Table 4.

Table 4: Land Use Flow Coefficients

Land Use	Ultimate Build-out Density Sewer Flow Coefficient (GPD/Acre)
Commercial	5,000
Industrial	3,500
Public/Institutional/School	2,525
Streets	0
Parks/Golf Course	200
High Density Residential (30 DU/A)	4,625
Medium Density Residential (15 DU/A)	2,525
Low Density Residential (8 DU/A)	1,545
Storm Inflow/Infiltration	800

The Costa Mesa Sanitary District boundaries include approximately 10,555 acres, including 1155 acres of commercial land use, 1054 acres of industrial land use, 4122 acres of residential land use, 560 acres of golf courses and 1584 acres of public land uses. A breakdown of the General Plan Land Uses is included in Table 5 below.

Table 5: Costa Mesa Sanitary District Land Uses

Land Use Type	Land Use Code	Acres
Commercial Center	CC	101.16
Commercial-Residential	CR	47.81
General Commercial	GC	690.90
Neighborhood Commercial	NC	40.49
Regional Commercial	RC	148.66
Urban Center Commercial	UCC	126.33
	Total Commercial	1155.36
Industrial Park	IP	675.44
Light Industrial	LI	378.83
	Total Industrial	1054.27
High Density Residential	HDR	849.79

SECTION 2 - DESIGN REQUIREMENTS

2-1 Design Criteria

(a) Minimum Size - The minimum size for sewer mains shall be 8" and for laterals 6".

(b) Sewer Slope - Minimum pipeline slopes shall be:

Pipe Size (Mains)	Grade
8 inch	0.40%
10 inch	0.28%
12 inch	0.22%
15 inch	0.16%
18 inch	0.12%
6 inch (laterals)	2.0 %

(c) Pipe Capacity - Pipelines shall be designed to carry estimated peak flow as follows:

18" or smaller - flowing 1/2 full
21" or larger - flowing 3/4 full

(d) Manholes - Manhole construction is required at the following locations:

(1) at changes of slope
(2) at changes of direction
(3) at changes of pipe size
(4) at junction of laterals larger than 6 inches
(5) at intervals not exceeding 350 feet
(6) at termination of sewer mains
(7) at special locations as designated by the District Engineer

Elevation drop through manholes shall be 0.10 foot minimum.

Appendix 5

Sewer Monitoring Report

Site Report

September 3, 2024

Customer Name: Fuscoe Engineering Inc.	Site Address:~88 Fair Dr Costa Mesa CA 92626 United States	Site Name: Fair Dr MH 104411

Access:

MH is south of address, located on grass area next to sidewalk on Fair Dr

System Type		
Sanitary	Storm	Combined
X		

Install Date:

September 3, 2024

Install Time:

08:20

Map

Traffic Safety

Gas			
O2	H2S	CO	LEL
20.9%	0ppm	0ppm	0%

Flow Meter	
Meter Depth (in): 112.99"	
MH Coordinates: 33.663981, -117.906248	
Meter SN: FD10033	
Avg Measured Level (in)	9.69"
Avg Measured Velocity	1.90FPS
Multiplier	1.00

Notes

Slow to moderate open channel hydraulics with some turbulence due to inflow from lateral.

Traffic Safety

Used arrow board, cones & signs in accord w/site-specific CATTCH requirements.

Land Use			
Residential	Commercial	Industrial	Trunk
X			

Manhole Depth (in)	147.00"
Monitored Pipe Size (in)	24"
Inner Pipe Size (in) (In/Out)	24"/24"
Pipe Shape	Round
Pipe Condition	Good
Manhole Material	Lined
Silt (in)	0.00"
Sensor Offset (in)	34.01"
Sensor Dist. to Crown (in)	9.01"
Flow Direction	West
Sensor Direction	Downstream

Site Report

September 3, 2024

Customer Name: Fuscoe Engineering Inc.	Site Address:~88 Fair Dr Costa Mesa CA 92626 United States	Site Name: Fair Dr MH 104411

Site

Before Install

Sewer Map

Installed

Downstream

Downstream Pipe Size

Site Report

September 3, 2024

Customer Name: Fuscoe Engineering Inc.	Site Address:~2675 Irvine Ave Suite E Costa Mesa CA 92627	Site Name: Irvine Ave MH 119942

Access:

MH is south east of address, located on west lane of Irvine Ave

System Type		
Sanitary	Storm	Combined
X		

Install Date:
September 3, 2024
Install Time:
10:15

Map

Traffic Safety

Gas			
O2	H2S	CO	LEL
20.9%	0ppm	0ppm	0%

Flow Meter	
Meter Depth (in): 231.36"	
MH Coordinates: 33.658253, -117.884842	
Meter SN:	
Avg Measured Level (in)	5.47"
Avg Measured Velocity	2.69FPS
Multiplier	1.00

Notes

Moderate to rapid open channel hydraulics

Traffic Safety

Used arrow board, cones & signs in accord w/site-specific CATTCH requirements.

Land Use			
Residential	Commercial	Industrial	Trunk
X			

Manhole Depth (in)	260.00"
Monitored Pipe Size (in)	21"
Inner Pipe Size (in) (In/Out)	21"/21"
Pipe Shape	Round
Pipe Condition	Good
Manhole Material	Lined
Silt (in)	0.00"
Sensor Offset (in)	28.64"
Sensor Dist. to Crown (in)	7.64"
Flow Direction	Northwest
Sensor Direction	Upstream

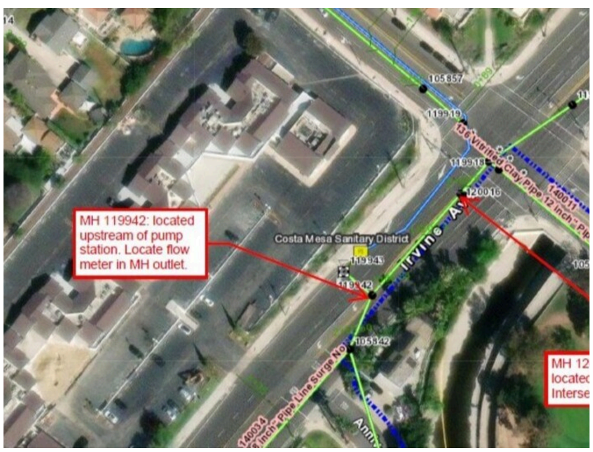
Site Report

September 3, 2024

Customer Name: Fuscoe Engineering Inc.	Site Address:~2675 Irvine Ave Suite E Costa Mesa CA 92627	Site Name: Irvine Ave MH 119942

Site

Before Install



Sewer Map

Installed

Upstream

Upstream Pipe Size

Site Report

September 3, 2024

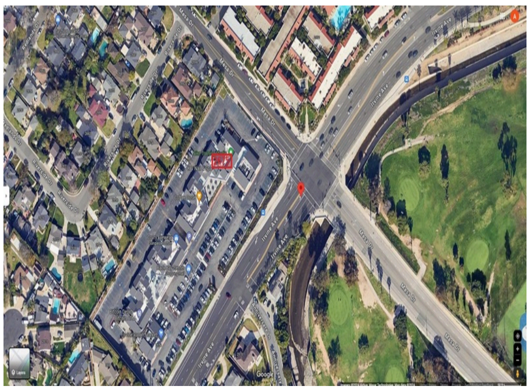
Customer Name: Fuscoe Engineering Inc.	Site Address:~2675 Irvine Ave Suite A2 Costa Mesa CA 92627 United States	Site Name: Irvine Ave MH 120016

Access:

MH is east of address, located on left turn lane at traffic light of Irvine Ave and Mesa Dr intersection

System Type		
Sanitary	Storm	Combined
X		

Install Date:
September 3, 2024
Install Time:
12:28



Map

Traffic Safety

Gas			
O2	H2S	CO	LEL
20.9%	0ppm	0ppm	0%

Flow Meter	
Meter Depth (in): 208.87"	
MH Coordinates: 33.65855, -117.884436	
Meter SN: FD10082	
Avg Measured Level (in)	4.78"
Avg Measured Velocity	2.02FPS
Multiplier	1.00

Notes
Slow to moderate open channel hydraulics

Traffic Safety
Used arrow board, cones & signs in accord w/site-specific CATTCH requirements.

Land Use			
Residential	Commercial	Industrial	Trunk
X			

Manhole Depth (in)	237.00"
Monitored Pipe Size (in)	21"
Inner Pipe Size (in) (In/Out)	21"/21"
Pipe Shape	Round
Pipe Condition	Good
Manhole Material	Lined
Silt (in)	0.00"
Sensor Offset (in)	28.13"
Sensor Dist. to Crown (in)	7.13"
Flow Direction	Southwest
Sensor Direction	Downstream

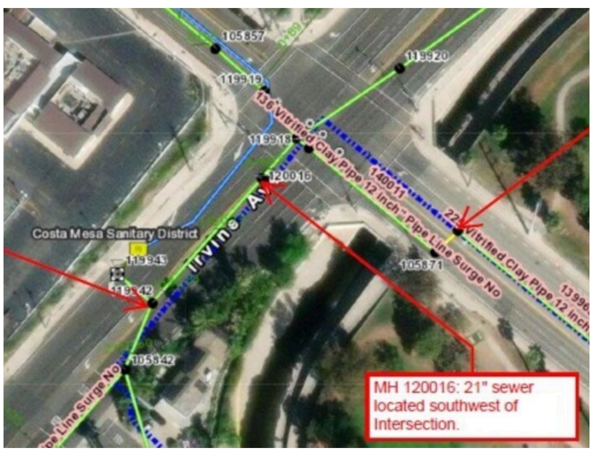
Site Report

September 3, 2024

Customer Name: Fuscoe Engineering Inc.	Site Address:~2675 Irvine Ave Suite A2 Costa Mesa CA 92627 United States	Site Name: Irvine Ave MH 120016

Site

Before Install



Sewer Map

Installed

Upstream

Uptream Pipe Size

Site Report

September 3, 2024

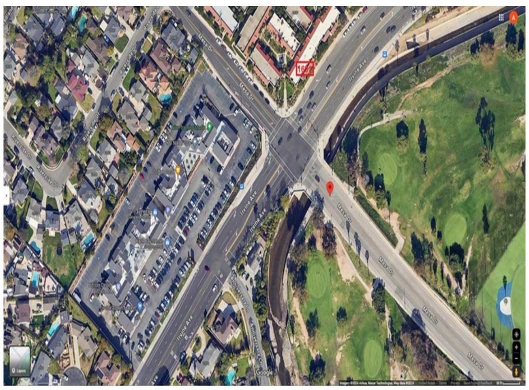
Customer Name: Fuscoe Engineering Inc.	Site Address:~1691 Mesa Dr Newport Beach CA 92660 United States	Site Name: Mesa Dr MH 105877

Access:

MH is southeast of address, located on left turn line at the traffic light of Mesa Dr and Irvine Ave intersection

System Type		
Sanitary	Storm	Combined
X		

Install Date:
September 20, 2024 Install Time:
18:00



Map

Traffic Safety

Gas			
O2	H2S	CO	LEL
20.9%	0ppm	0ppm	0%

Flow Meter	
Meter Depth (in): 125.97"	
MH Coordinates: 33.65841, -117.883936	
Meter SN: FD10076	
Avg Measured Level (in)	2.00"
Avg Measured Velocity	2.28FPS
Multiplier	1.00

Notes

Slow to moderate open channel hydraulics

Traffic Safety

Used arrow board, cones & signs in accord w/site-specific CATTCH requirements.

Land Use			
Residential	Commercial	Industrial	Trunk
X			

Manhole Depth (in)	146.00"
Monitored Pipe Size (in)	12"
Inner Pipe Size (in) (In/Out)	12"/12"
Pipe Shape	Round
Pipe Condition	Good
Manhole Material	Lined
Silt (in)	0.00"
Sensor Offset (in)	20.03"
Sensor Dist. to Crown (in)	8.03"
Flow Direction	South
Sensor Direction	Upstream

UTILITY SYSTEMS SCIENCE & SOFTWARE

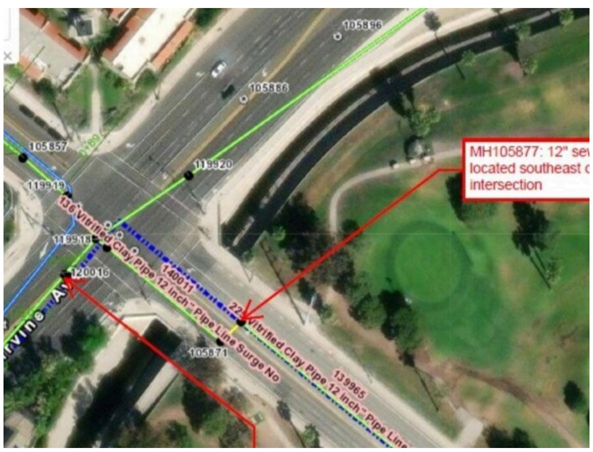
Site Report

September 3, 2024

Customer Name: Fuscoe Engineering Inc.	Site Address:~1691 Mesa Dr Newport Beach CA 92660 United States	Site Name: Mesa Dr MH 105877

Site

Before Install



Sewer Map

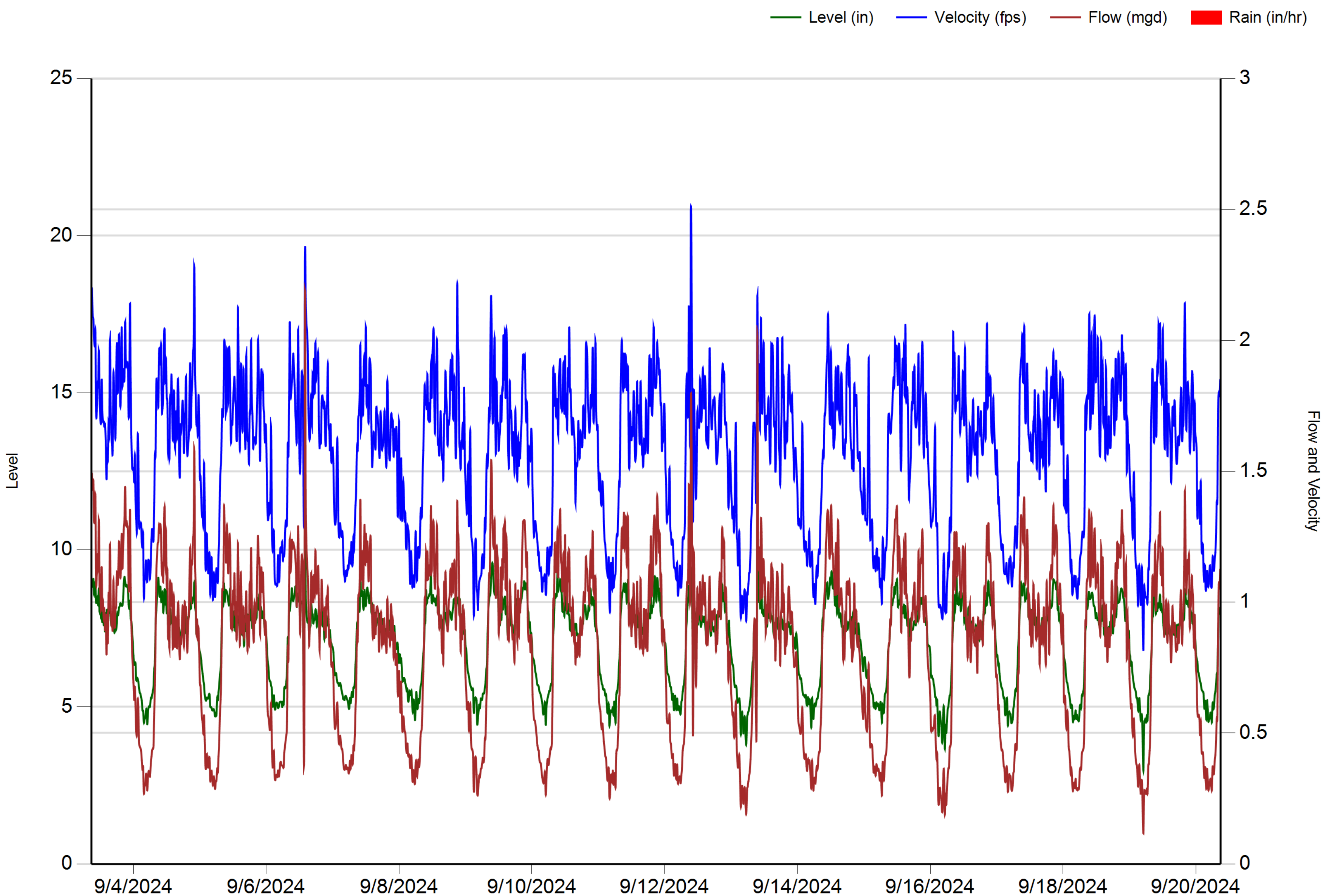
Installed

Upstream

Upstream Pipe Size

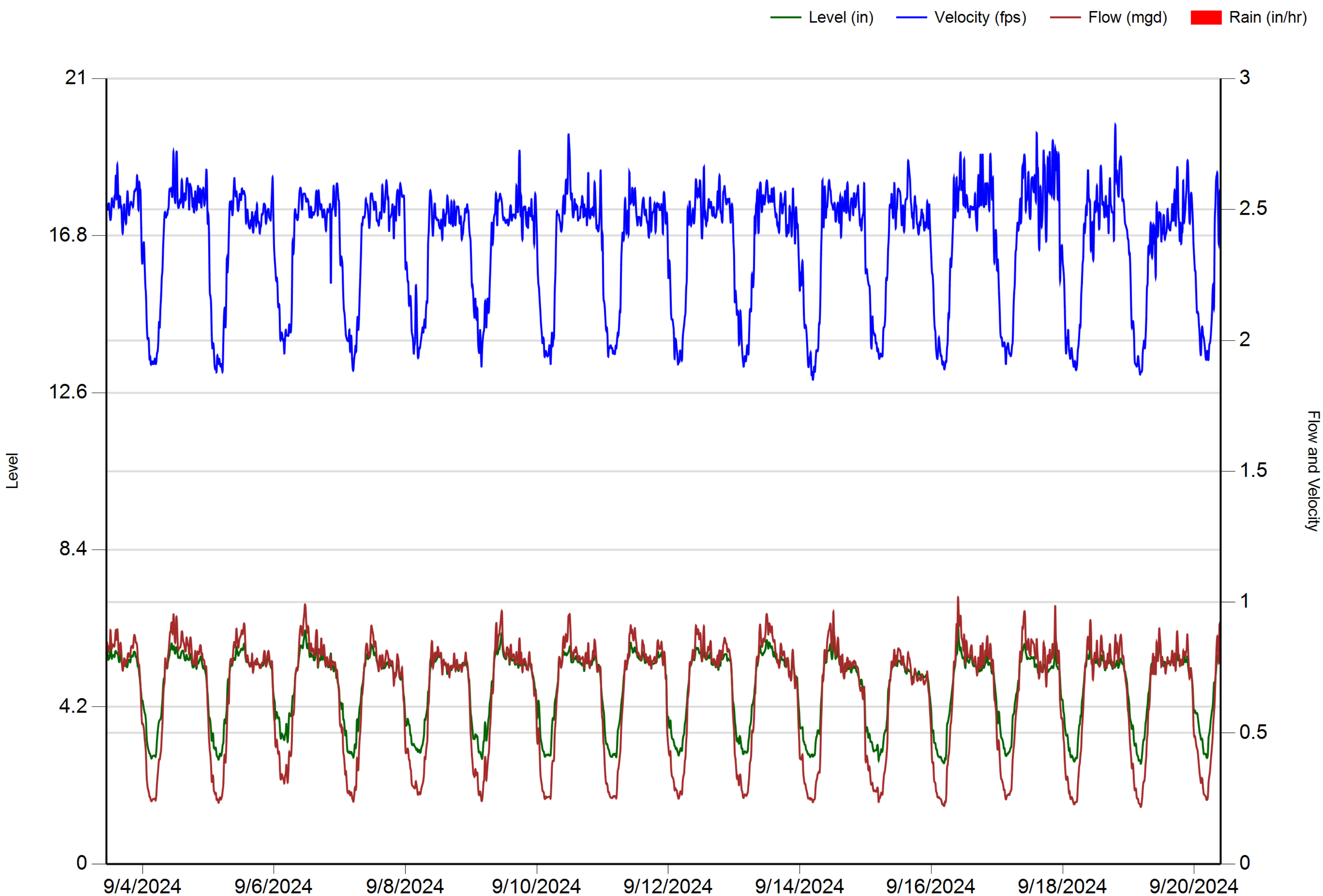
2024.07 Fair Dr MH 104411:
09/03/2024 thru 09/20/2024

Report Date: 09/26/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Fair Dr MH 104411



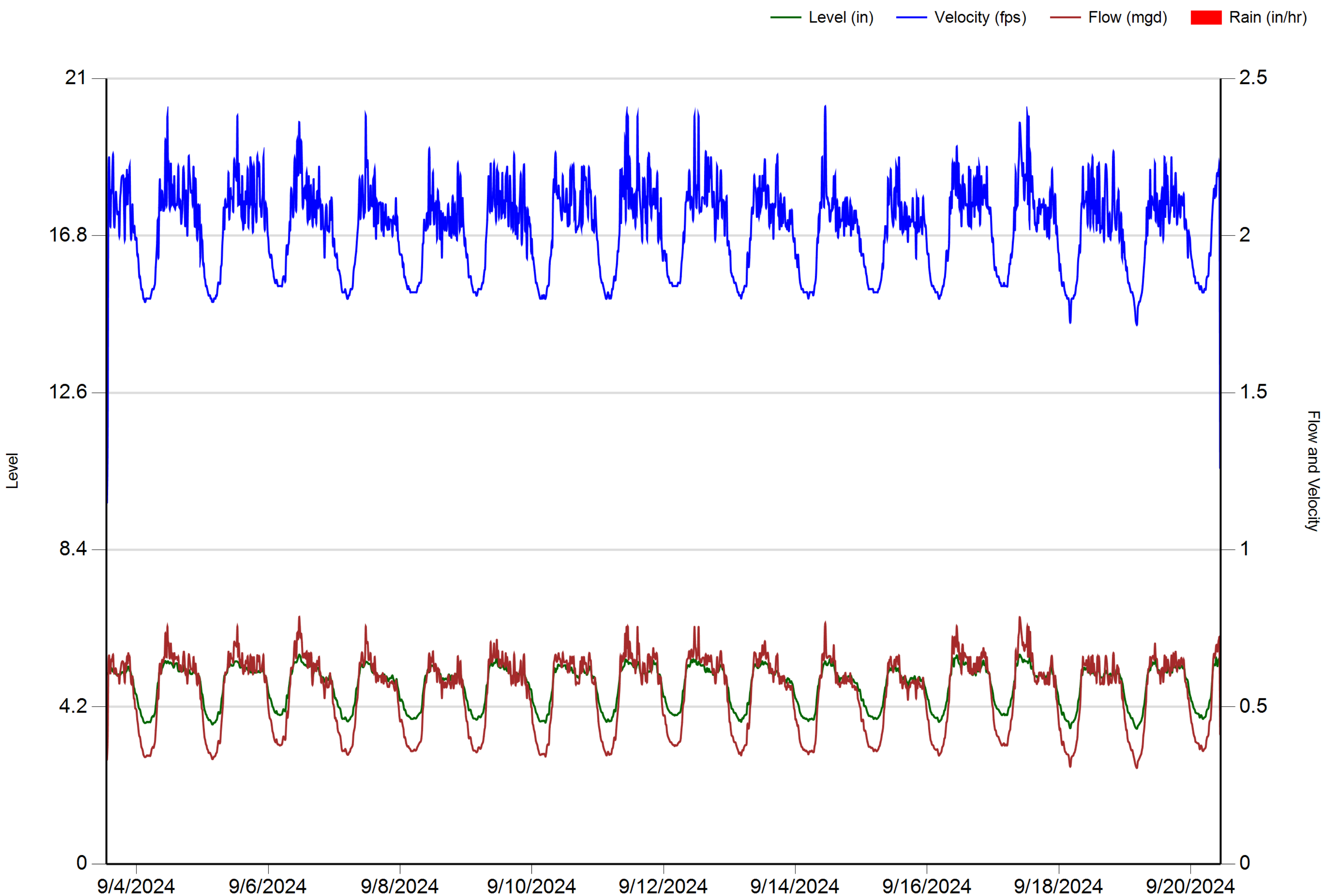
Report Date: 09/25/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Irvine Ave MH 119942

2024.07 Irvine Ave MH 119942:
09/03/2024 thru 09/20/2024



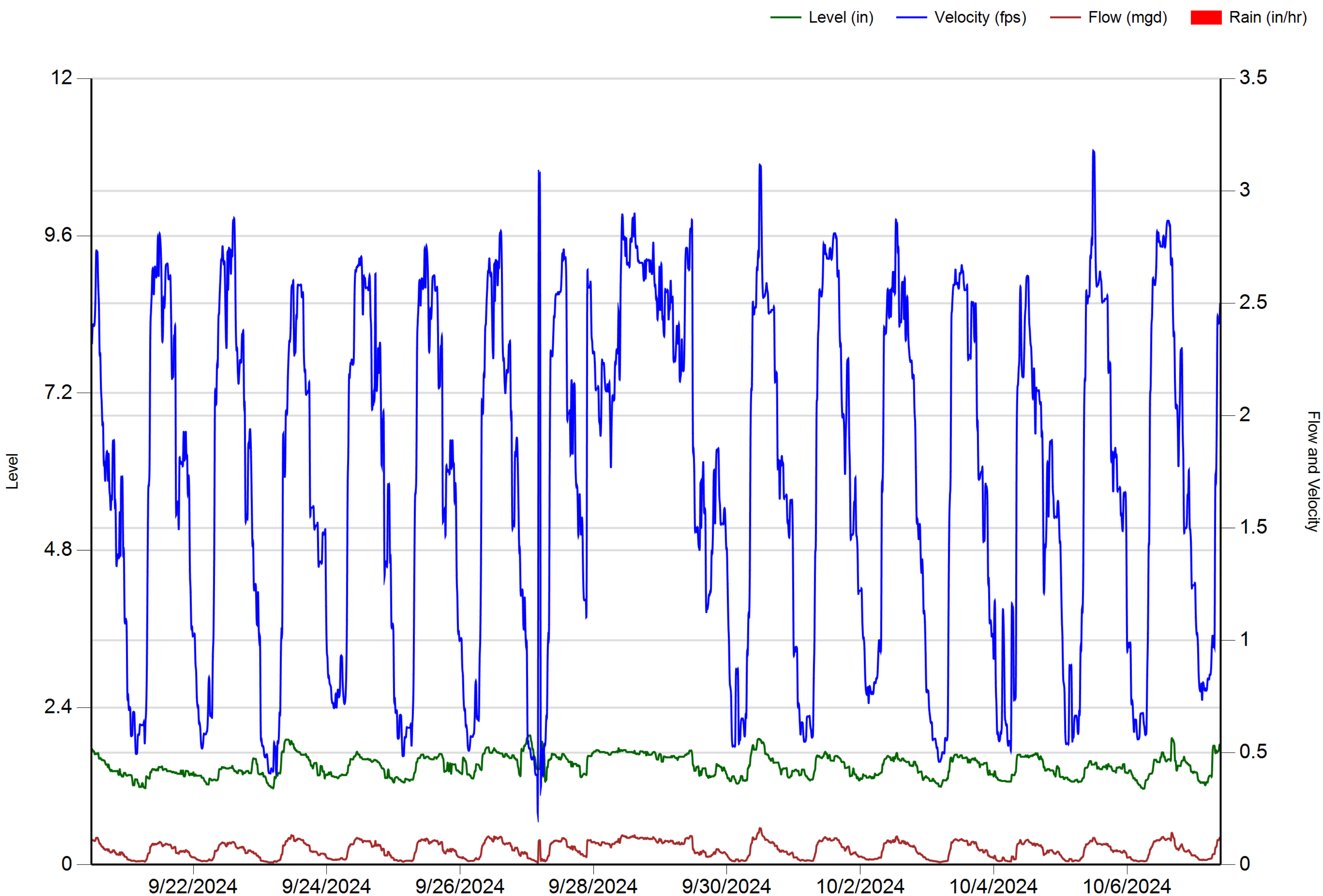
Report Date: 09/26/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Irvine Ave MH 120016

2024.07 Irvine Ave MH 120016:
09/03/2024 thru 09/20/2024

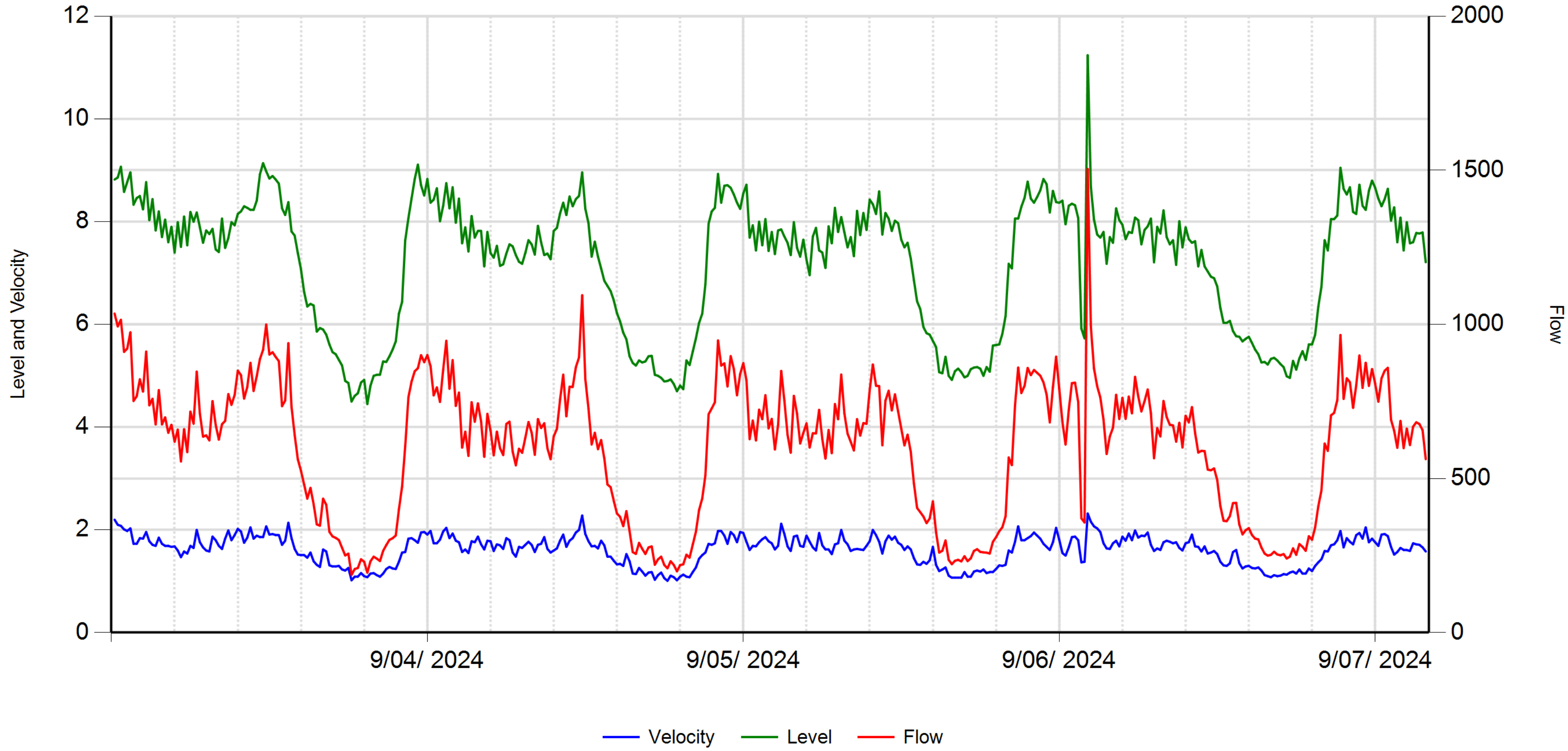


Report Date: 10/08/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Mesa Dr MH 105877

2024.07 Mesa Dr MH 105877:
09/20/2024 thru 10/07/2024



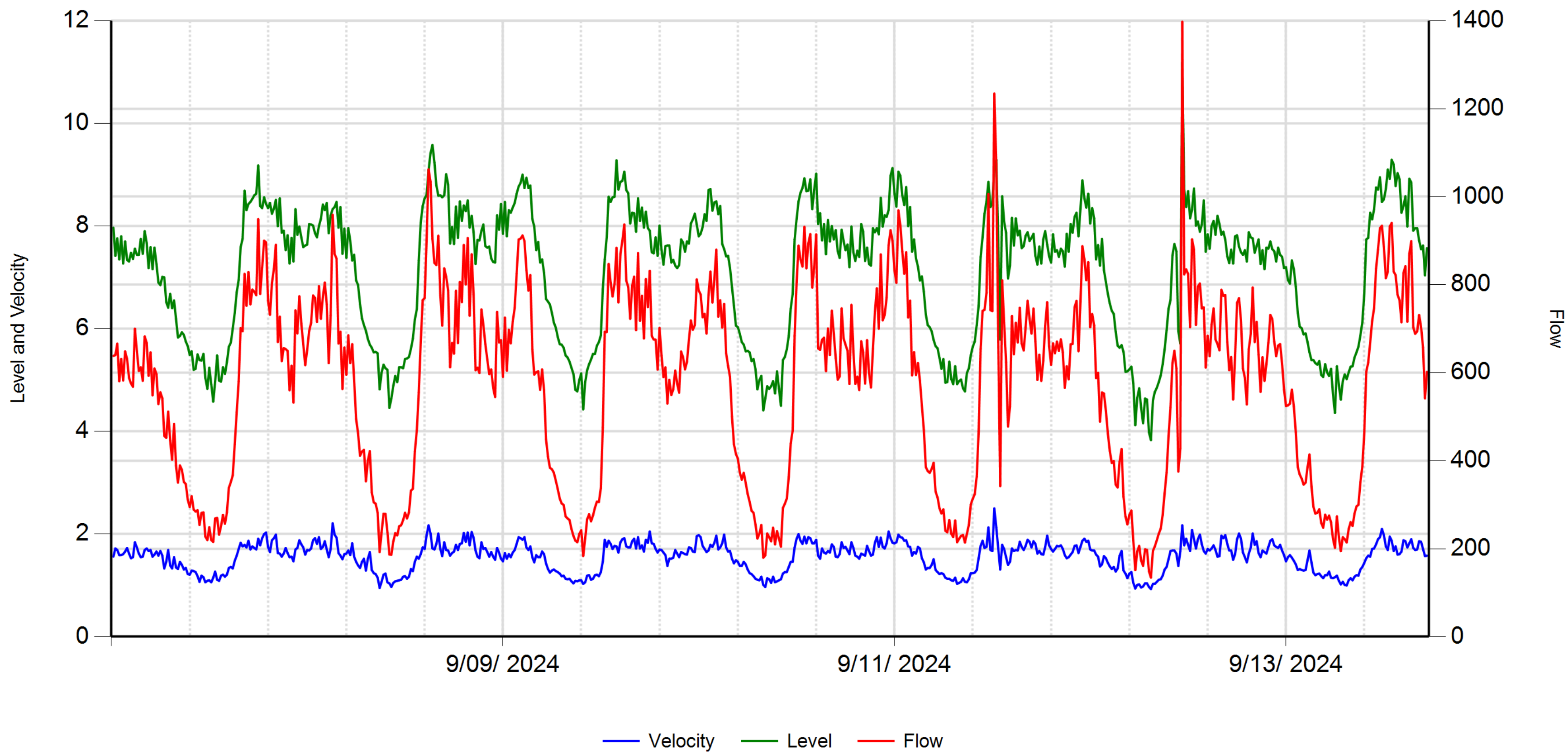
2024.07 Fair Dr MH 104411



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.611	7.215	600.748	**RainFall**	Inches
Maximum	2.320	11.240	1504.400		
Minimum	1.010	4.450	187.550		

9/26/2024

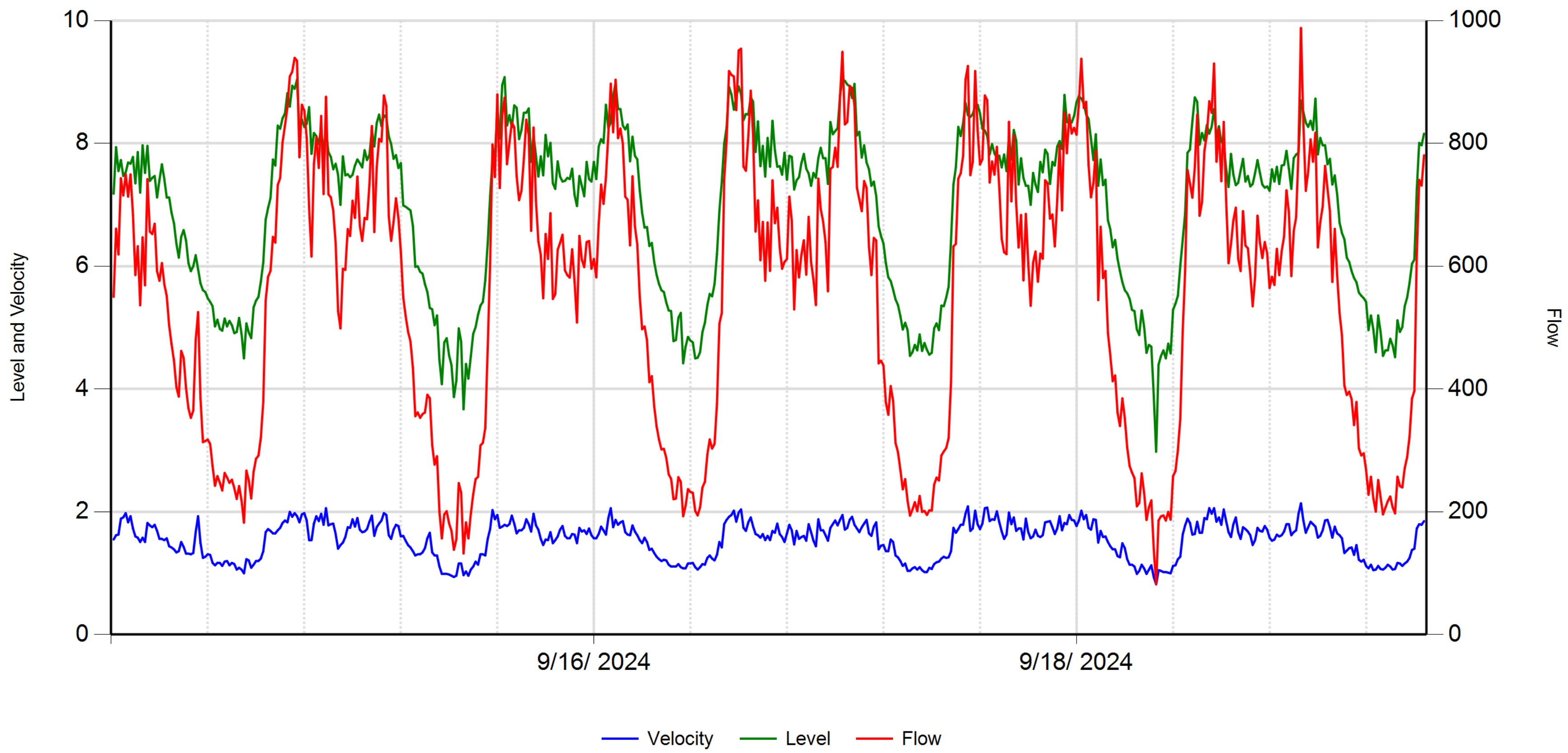
2024.07 Fair Dr MH 104411



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.560	7.120	573.206	**RainFall**	Inches
Maximum	2.500	11.190	1397.500		
Minimum	0.930	3.830	134.580		

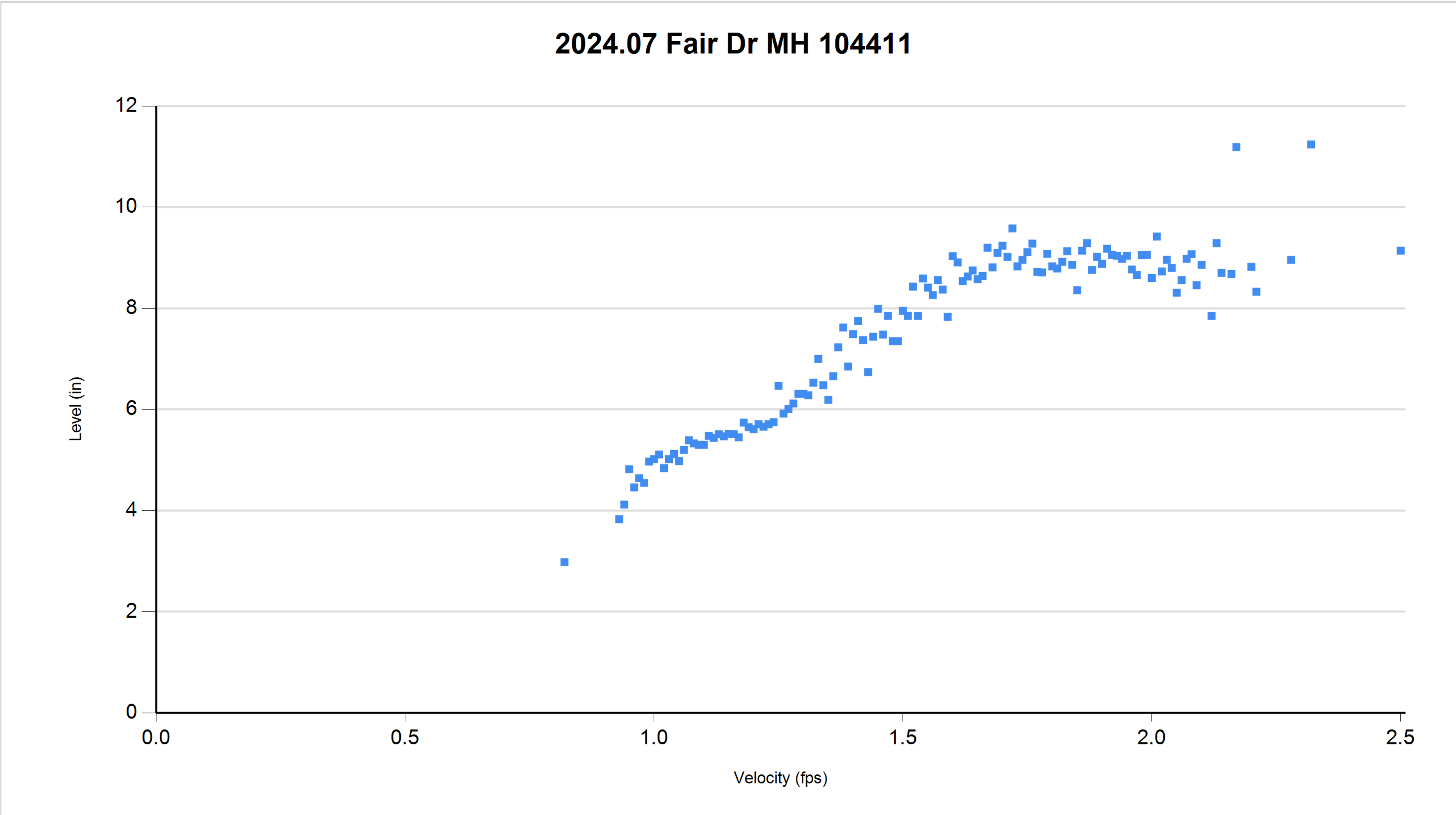
9/26/2024

2024.07 Fair Dr MH 104411



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.549	6.965	555.329	**RainFall**	Inches
Maximum	2.140	9.080	988.060		
Minimum	0.820	2.980	82.350		

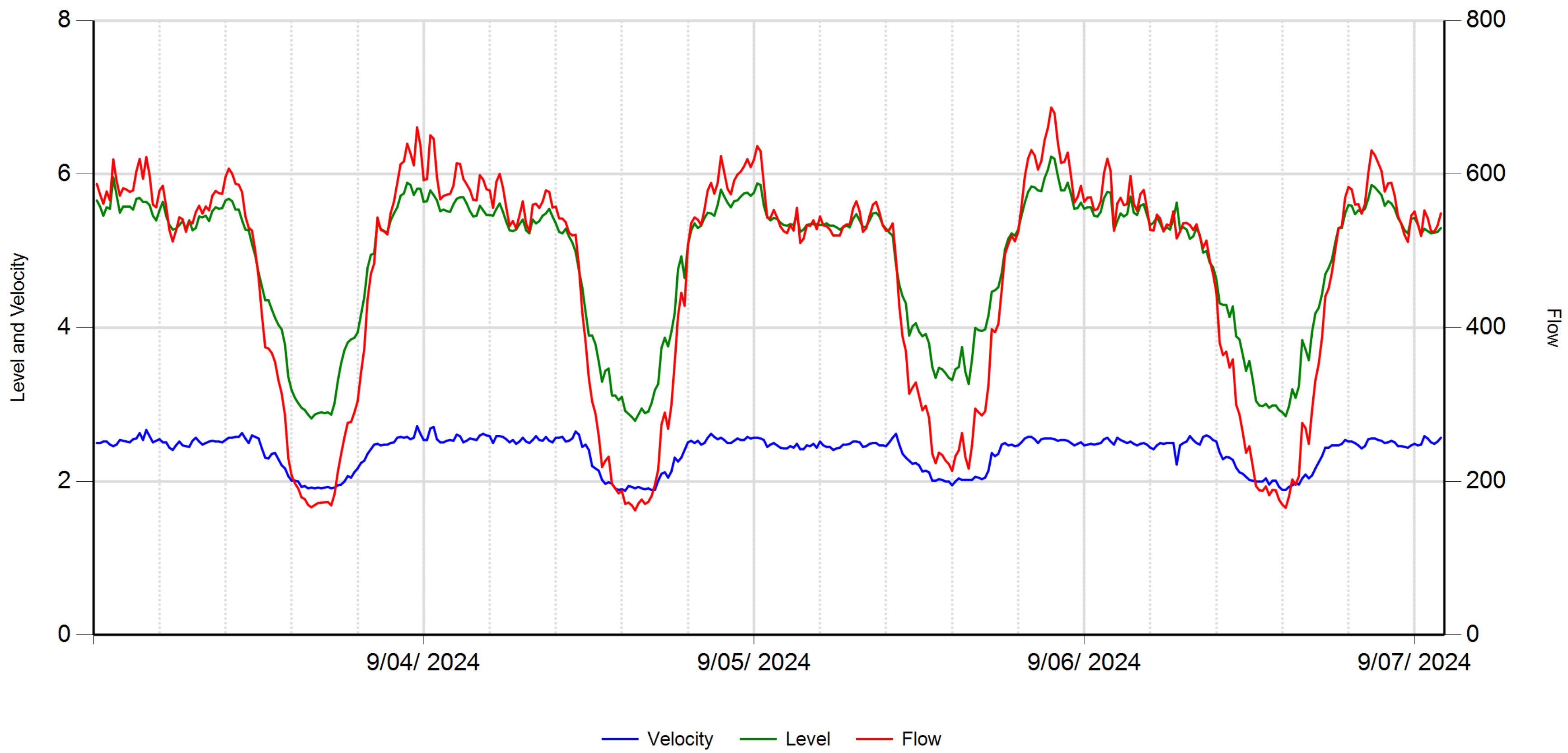
9/26/2024



9/3/2024 thru 9/20/2024

9/26/2024 3:00:57 PM

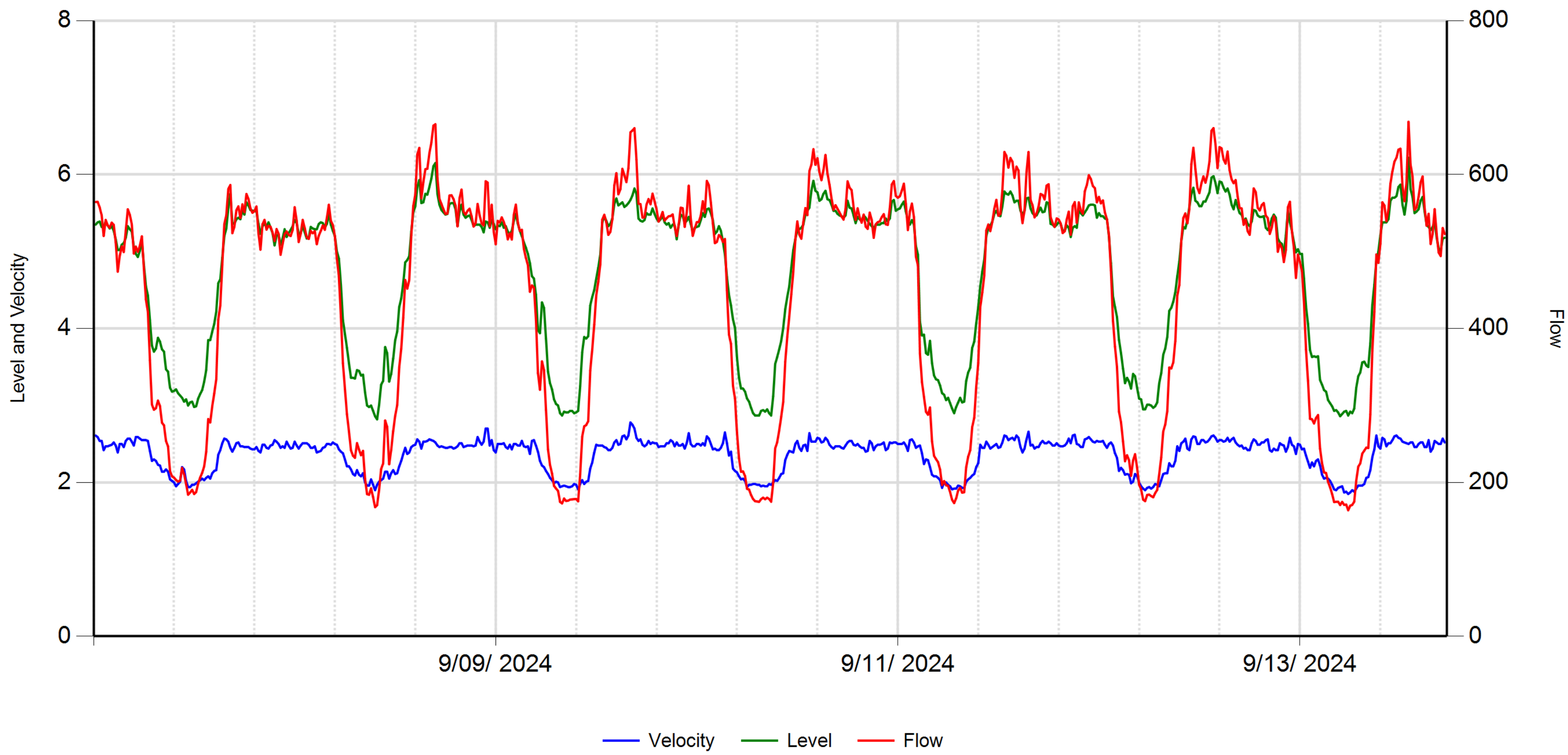
2024.07 Irvine Ave MH 119942



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	2.385	4.875	468.121	RainFall	Inches
Maximum	2.720	6.230	686.860		
Minimum	1.880	2.790	162.330		

9/25/2024

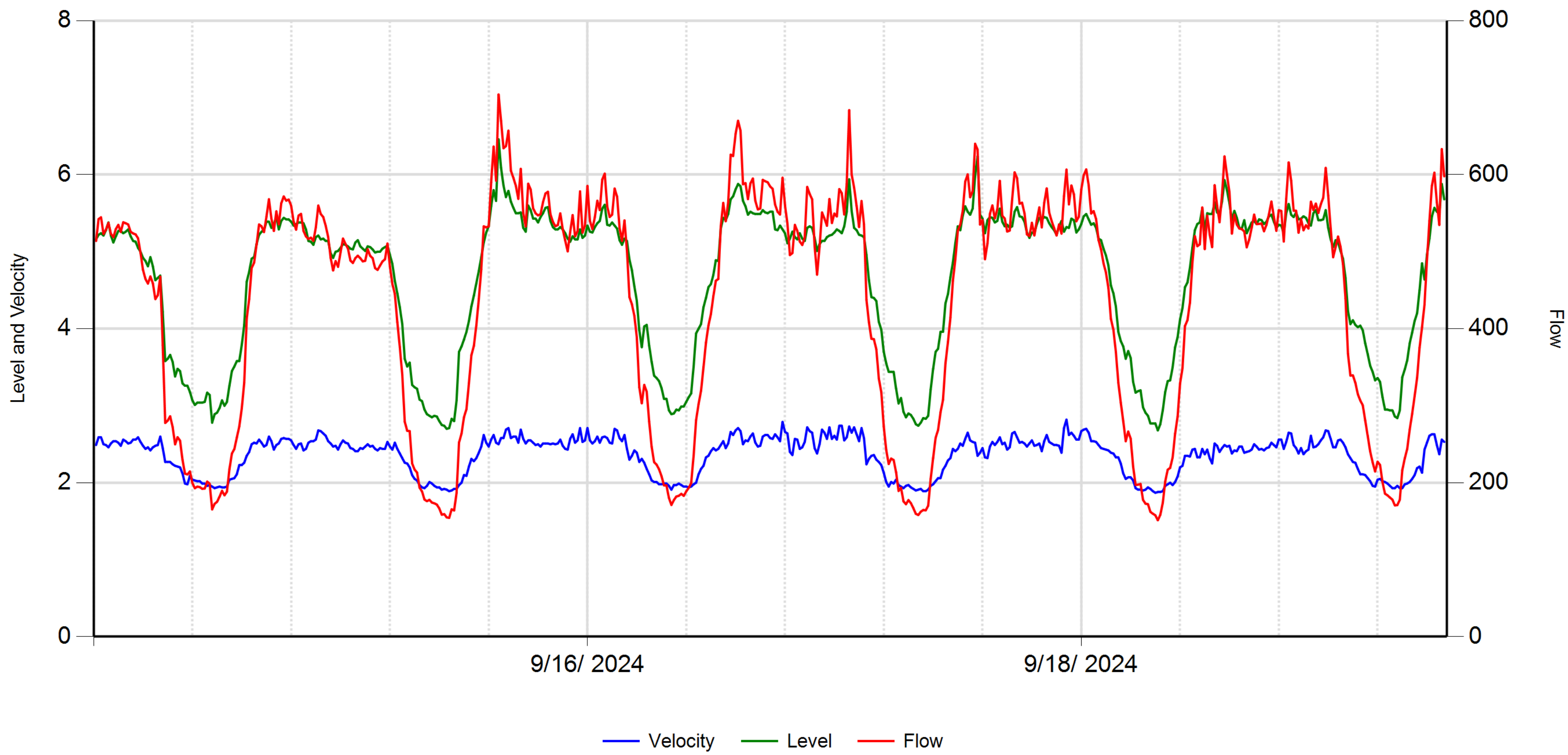
2024.07 Irvine Ave MH 119942



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	2.362	4.752	448.462	**RainFall**	Inches
Maximum	2.780	6.220	668.680		
Minimum	1.850	2.820	163.810		

9/25/2024

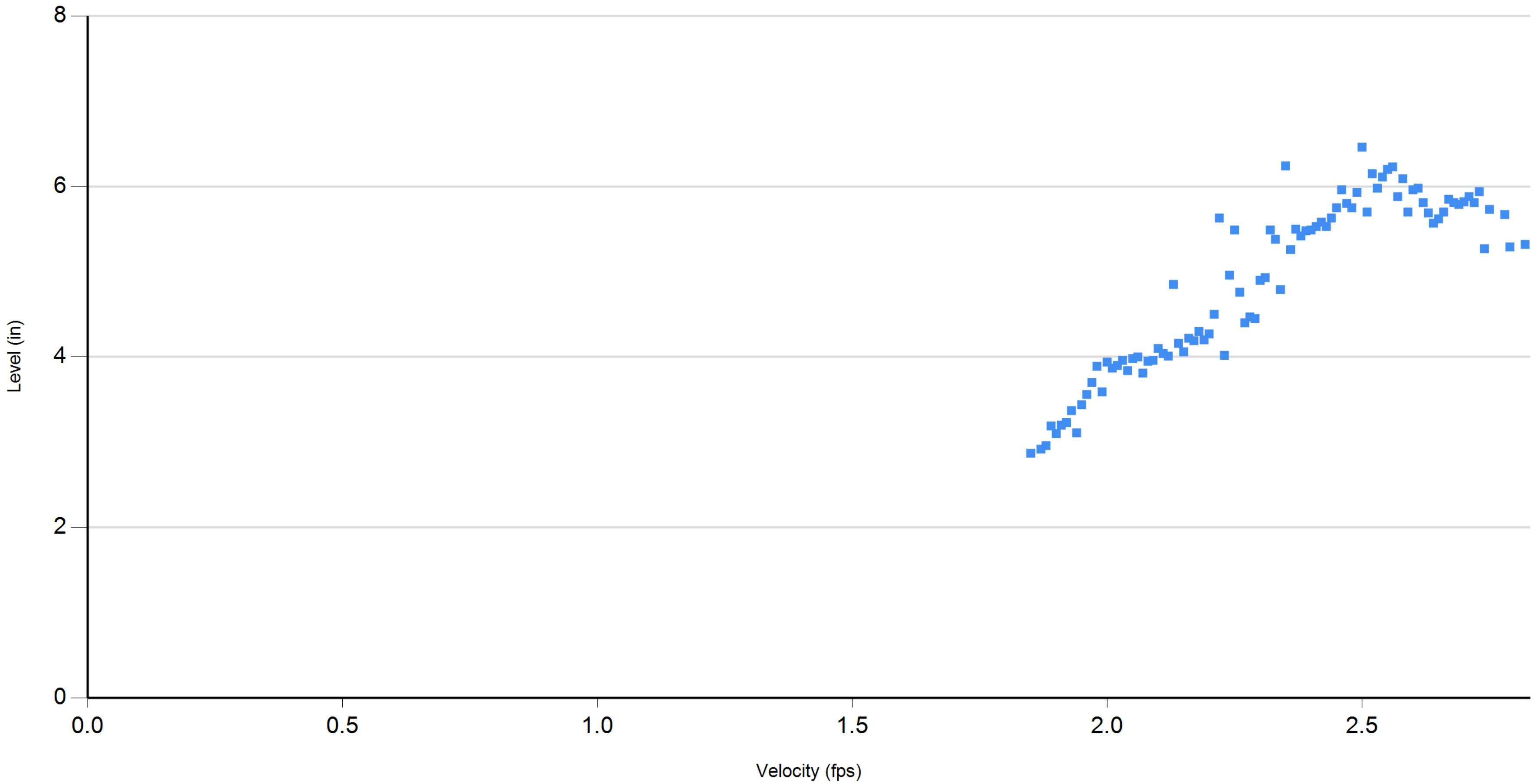
2024.07 Irvine Ave MH 119942



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	2.361	4.653	436.202	**RainFall**	Inches
Maximum	2.820	6.460	704.240		
Minimum	1.870	2.680	151.260		

9/25/2024

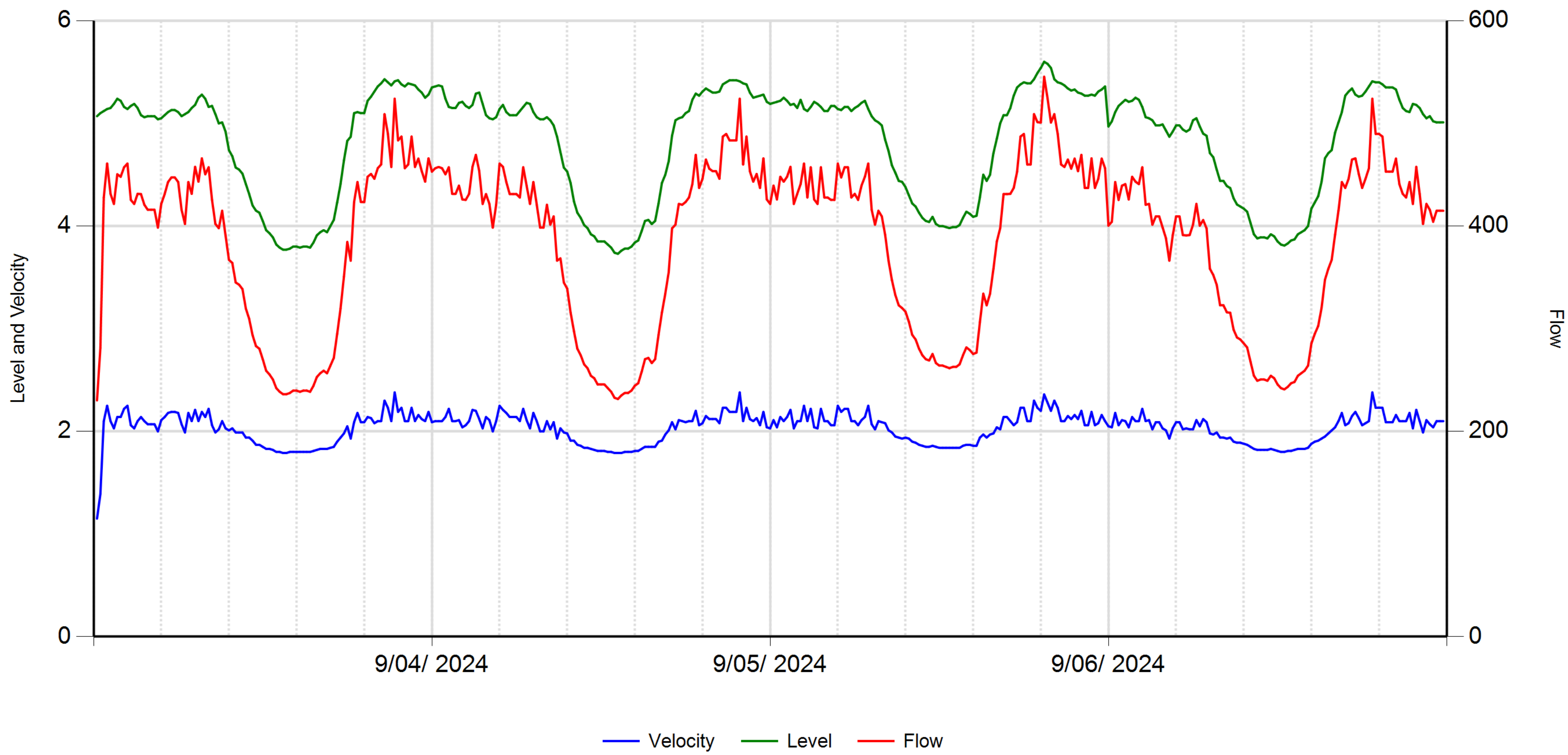
2024.07 Irvine Ave MH 119942



9/3/2024 thru 9/20/2024

9/25/2024 10:21:16 AM

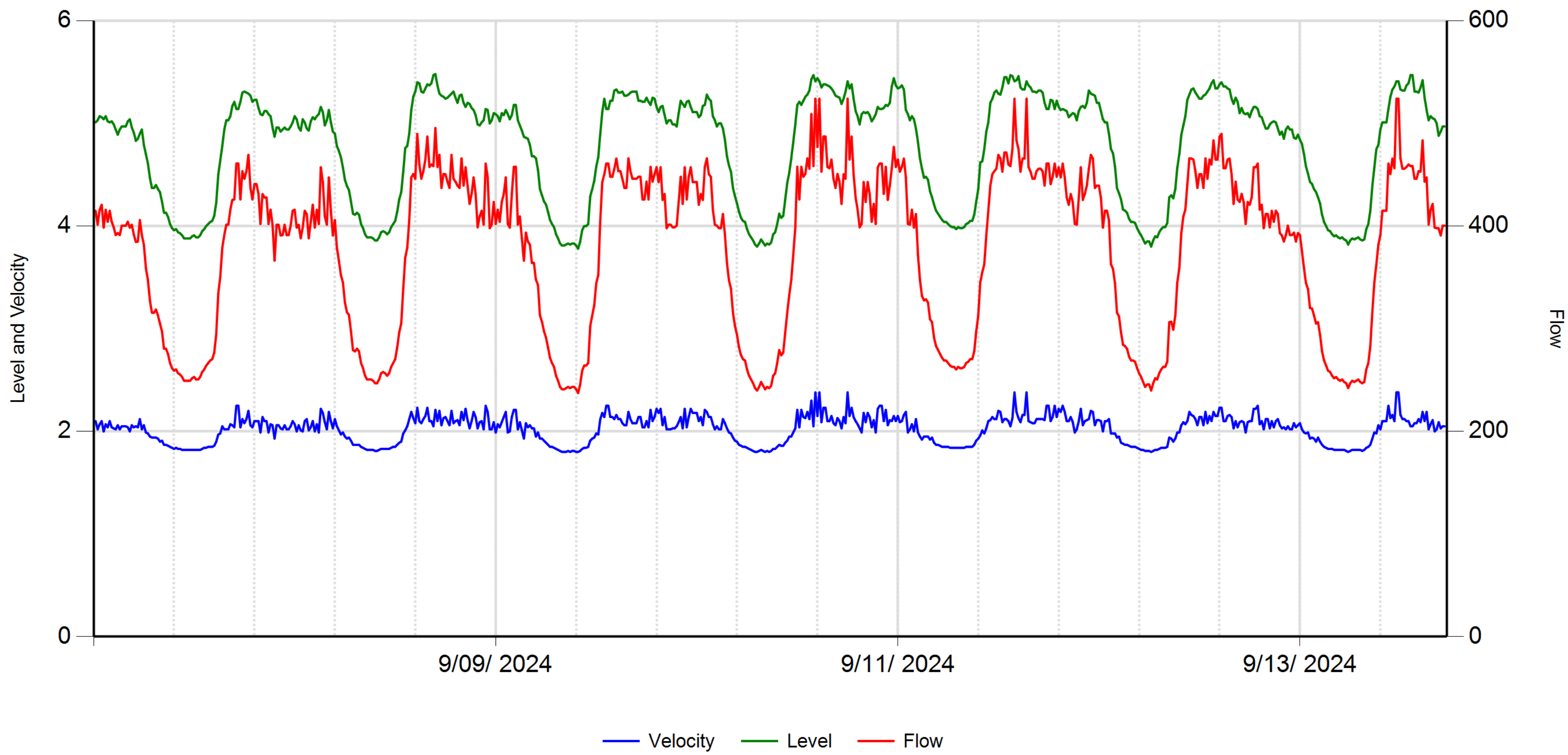
2024.07 Irvine Ave MH 120016



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	2.031	4.823	385.121	**RainFall**	Inches
Maximum	2.380	5.600	545.420		
Minimum	1.150	3.730	230.150		

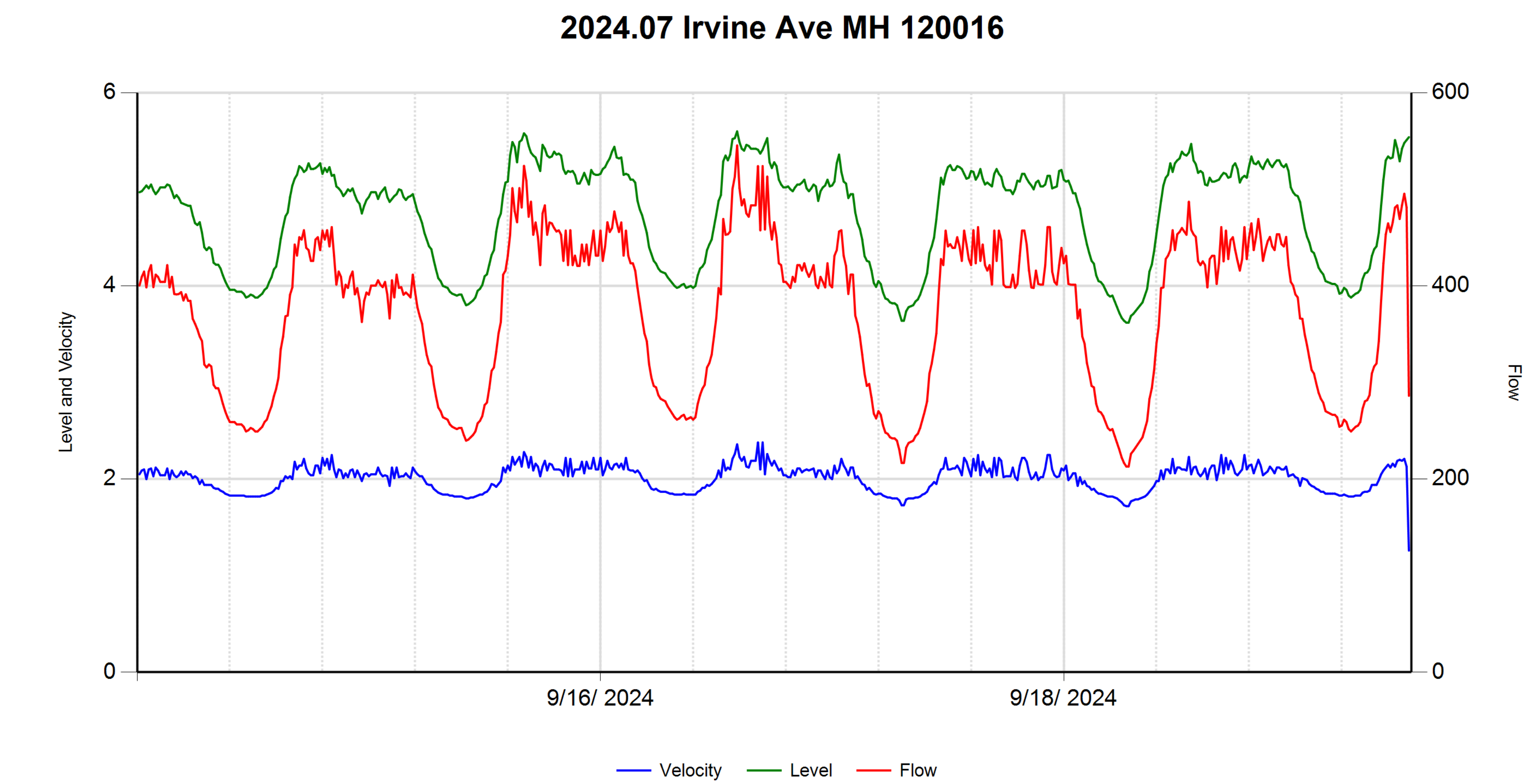
9/26/2024

2024.07 Irvine Ave MH 120016



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	2.021	4.779	378.182	**RainFall**	Inches
Maximum	2.380	5.480	524.010		
Minimum	1.800	3.780	237.410		

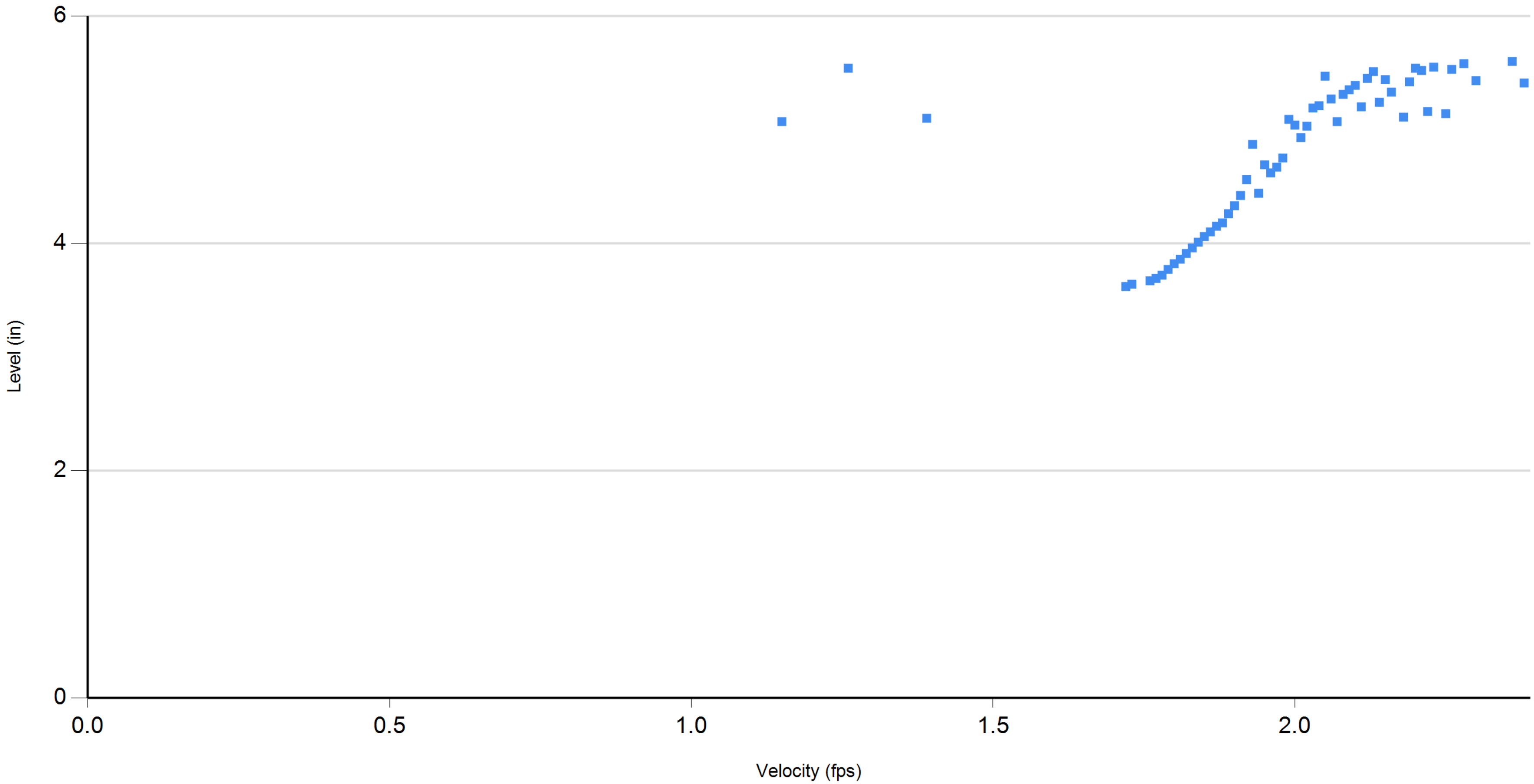
9/26/2024



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	2.012	4.747	372.964	**RainFall**	Inches
Maximum	2.380	5.600	545.420		
Minimum	1.260	3.620	213.060		

9/26/2024

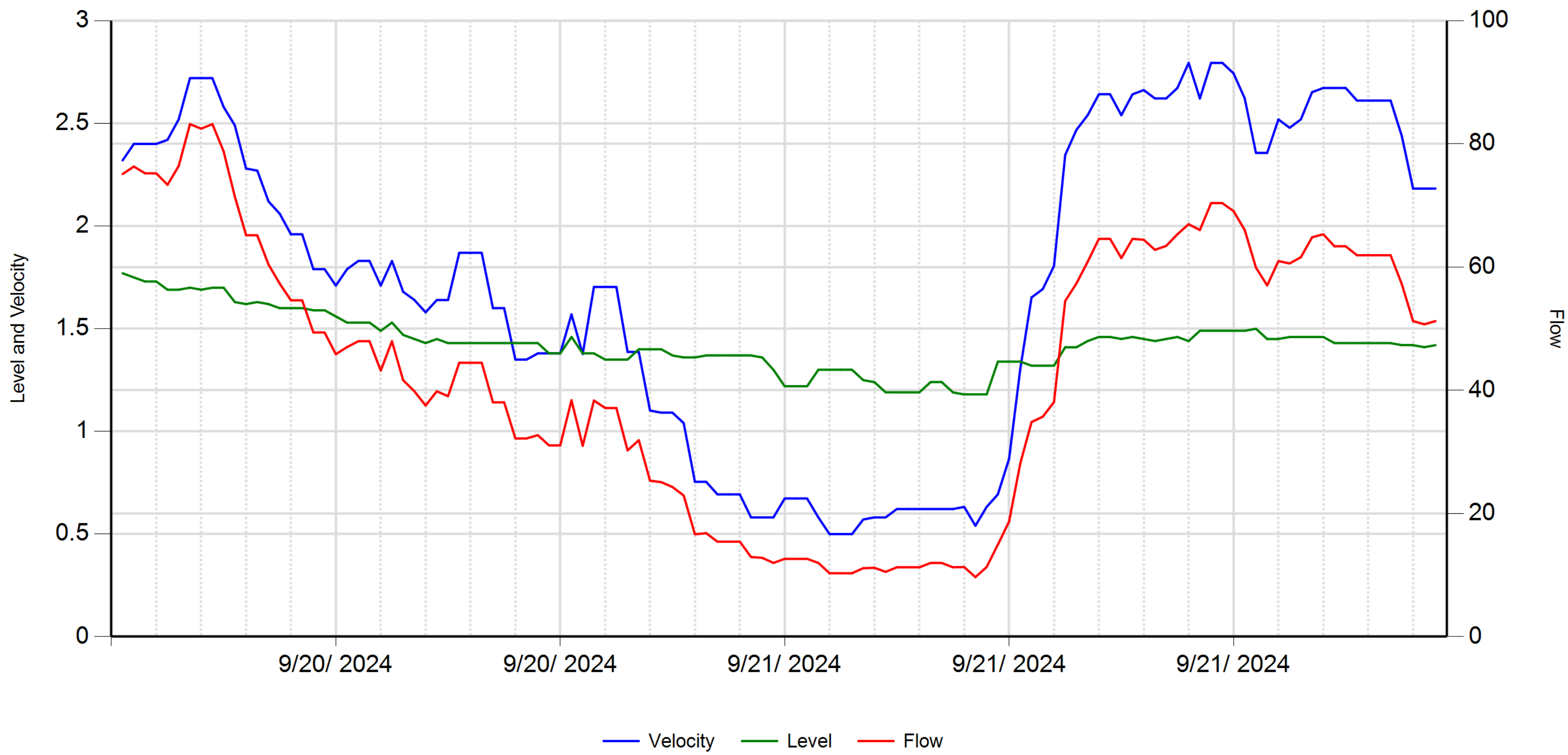
2024.07 Irvine Ave MH 120016



9/3/2024 thru 9/20/2024

9/26/2024 3:00:01 PM

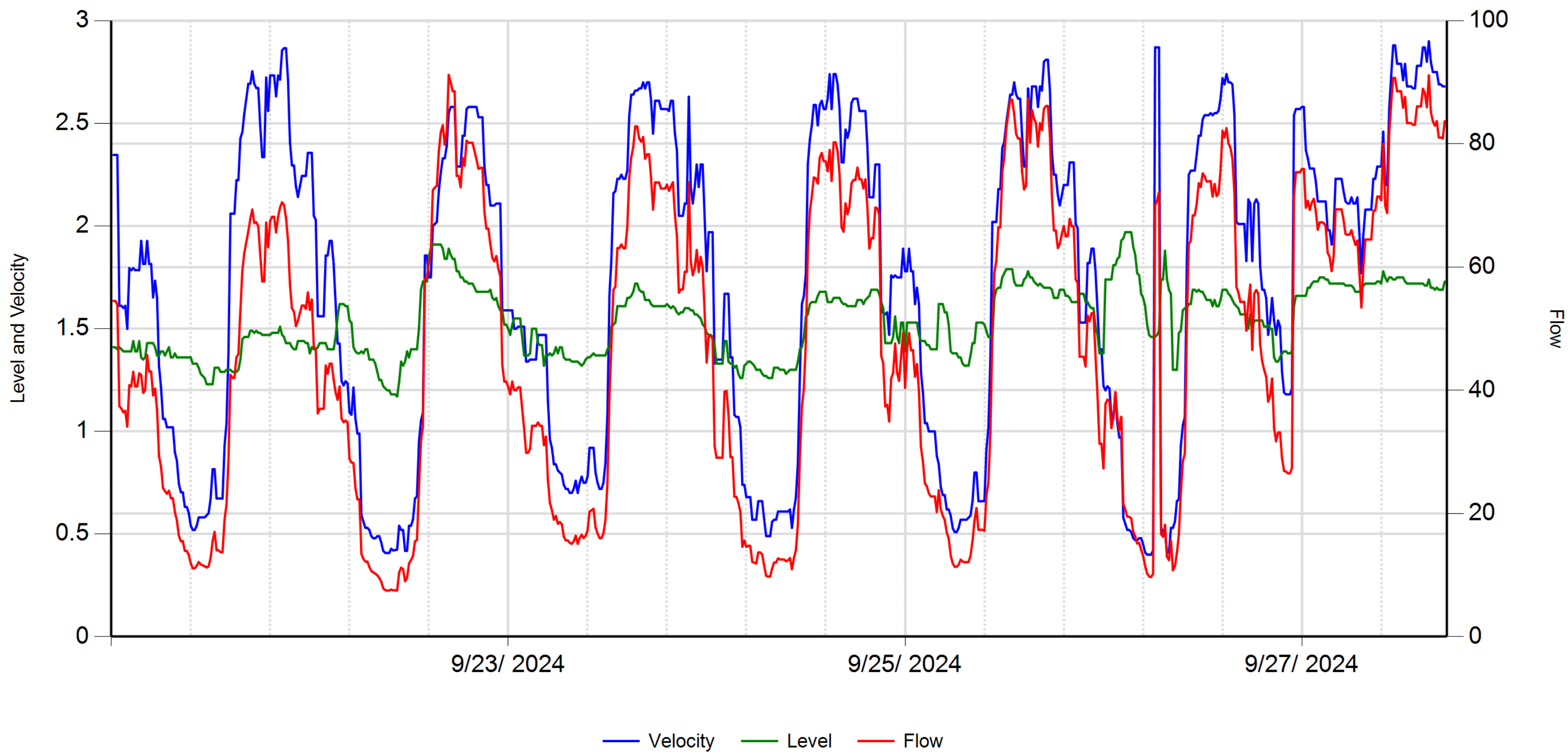
2024.07 Mesa Dr MH 105877



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.741	1.431	43.278	**RainFall**	Inches
Maximum	2.795	1.770	83.210		
Minimum	0.500	1.180	9.680		

10/08/2024

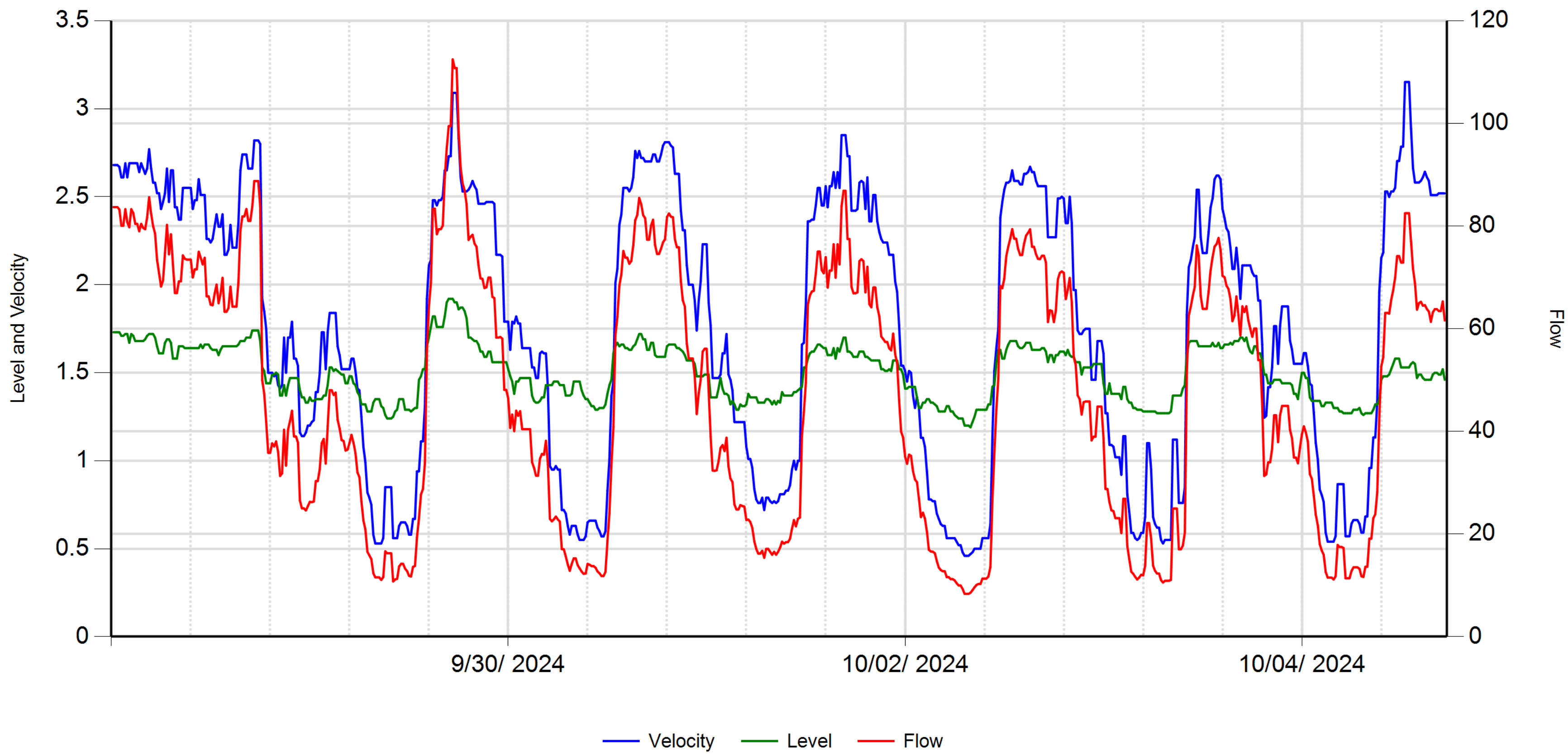
2024.07 Mesa Dr MH 105877



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.721	1.537	47.444	**RainFall**	Inches
Maximum	2.900	1.970	91.200		
Minimum	0.400	1.170	7.490		

10/08/2024

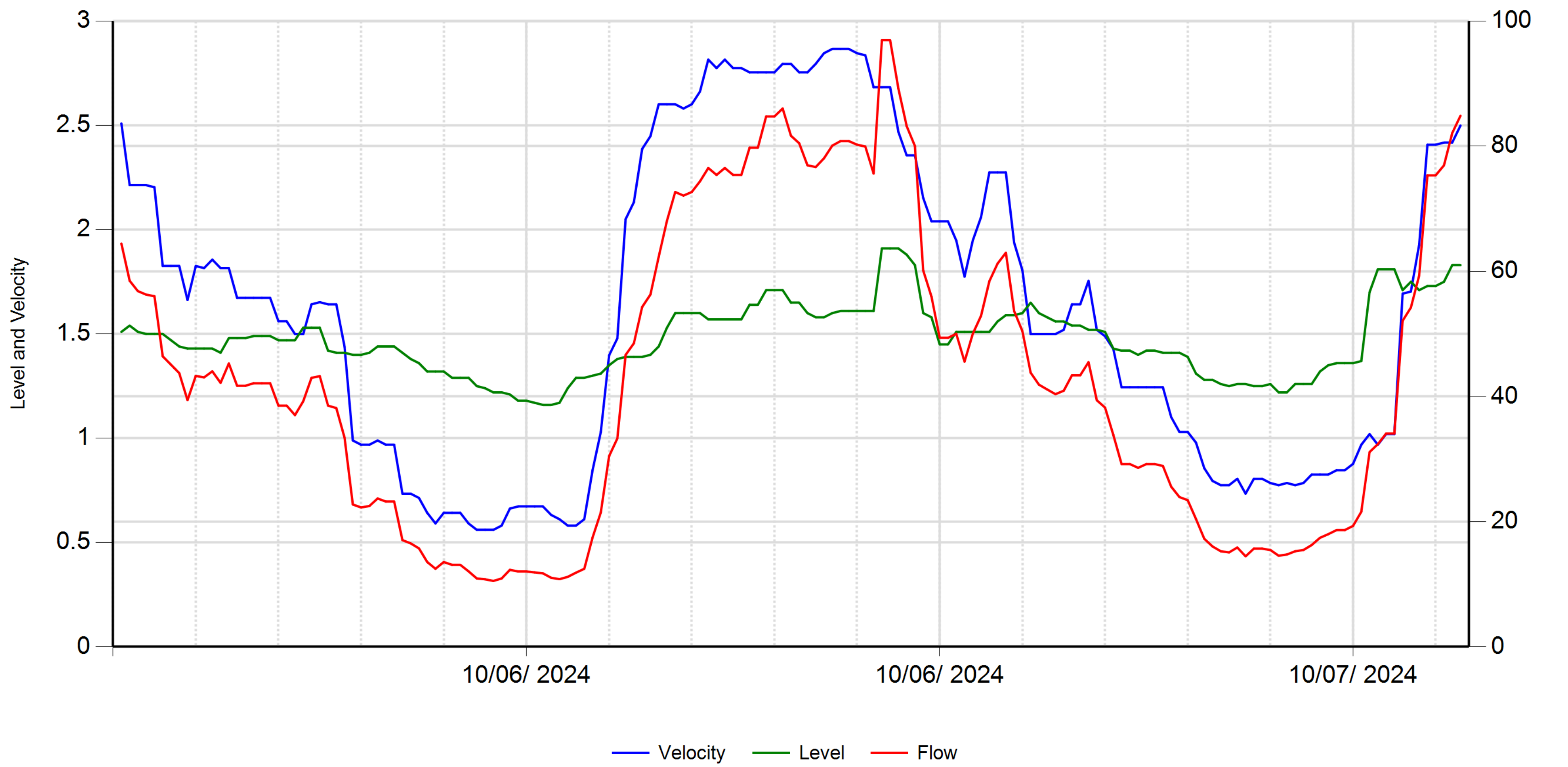
2024.07 Mesa Dr MH 105877



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.752	1.497	47.166	**RainFall**	Inches
Maximum	3.152	1.920	112.470		
Minimum	0.460	1.190	8.360		

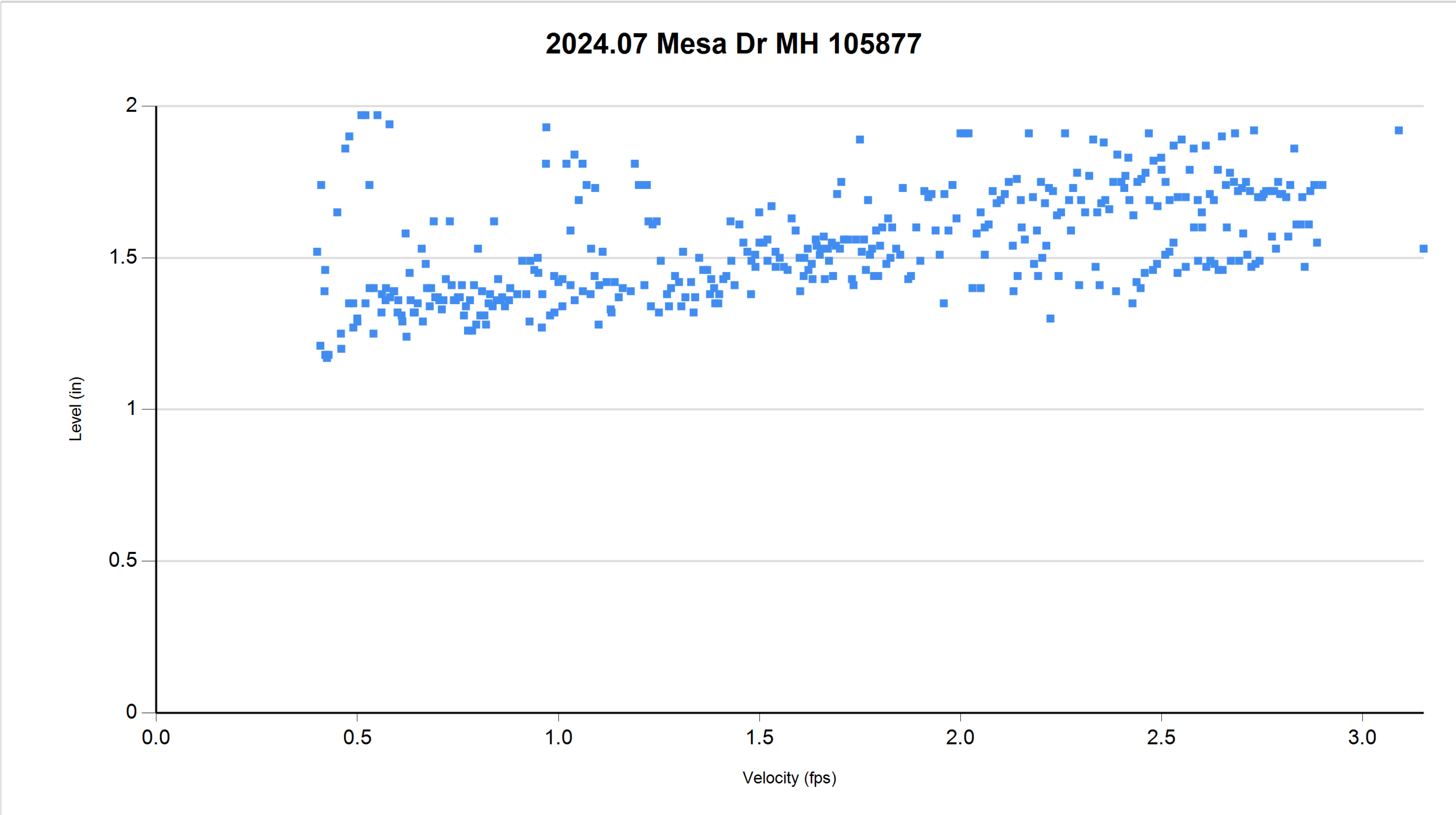
10/08/2024

2024.07 Mesa Dr MH 105877



	Velocity (fps)	Level (in)	Flow (gpm)		
Average	1.620	1.474	42.671	**RainFall**	Inches
Maximum	2.866	1.910	96.930		
Minimum	0.561	1.160	10.540		

10/08/2024



9/20/2024 thru 10/7/2024

10/8/2024 9:23:08 AM

Utility Systems Science and Software

Report Date: 09/26/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Fair Dr MH 104411

Statistics for 2024.07 Fair Dr MH 104411:
09/03/2024 thru 09/20/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Total Gal	Rain
9/3/24	769.84	1035.31	525.20	1.11	1.49	0.76	1.81	2.20	1.47	8.16	9.14	7.07	1,108,575	
9/4/24	580.77	1094.81	187.55	0.84	1.58	0.27	1.60	2.28	1.02	7.07	9.11	4.45	836,309	
9/5/24	579.30	948.02	198.96	0.83	1.37	0.29	1.59	2.12	1.01	7.10	8.93	4.70	834,194	
9/6/24	589.94	1504.40	222.22	0.85	2.17	0.32	1.60	2.32	1.07	7.13	11.24	4.92	849,519	
9/7/24	546.84	965.72	240.64	0.79	1.39	0.35	1.53	2.05	1.08	7.02	9.05	4.96	787,456	
9/8/24	576.48	958.78	215.62	0.83	1.38	0.31	1.57	2.21	1.06	7.13	9.18	4.58	830,130	
Week:	**607.20**	**1504.40**	**187.55**	**0.87**	**2.17**	**0.27**	**1.62**	**2.32**	**1.01**	**7.27**	**11.24**	**4.45**	**5,246,183**	
9/9/24	597.68	1062.04	186.31	0.86	1.53	0.27	1.56	2.17	0.95	7.34	9.58	4.46	860,666	
9/10/24	588.02	936.86	183.57	0.85	1.35	0.26	1.57	2.05	1.03	7.24	9.28	4.43	846,748	
9/11/24	590.61	969.14	179.70	0.85	1.40	0.26	1.59	2.05	0.97	7.18	9.13	4.41	850,485	
9/12/24	571.12	1234.29	214.14	0.82	1.78	0.31	1.57	2.50	1.03	7.10	9.29	4.78	822,417	
9/13/24	544.05	1397.50	134.58	0.78	2.01	0.19	1.55	2.17	0.93	6.85	11.19	3.83	783,425	

Statistics for 2024.07 Fair Dr MH 104411:
09/03/2024 thru 09/20/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Total Gal**	**Rain**
9/14/24	546.64	940.22	194.64	0.79	1.35	0.28	1.53	2.10	1.00	6.98	9.29	4.36	787,162	
9/15/24	564.88	939.43	182.41	0.81	1.35	0.26	1.57	2.06	1.00	7.01	9.04	4.50	813,421	
Week:	**571.86**	**1397.50**	**134.58**	**0.82**	**2.01**	**0.19**	**1.56**	**2.50**	**0.93**	**7.10**	**11.19**	**3.83**	**5,764,325**	
9/16/24	553.45	903.81	132.22	0.80	1.30	0.19	1.54	2.06	0.94	6.97	9.08	3.67	796,966	
9/17/24	577.93	954.34	192.83	0.83	1.38	0.28	1.55	2.04	1.06	7.17	9.04	4.42	832,218	
9/18/24	587.58	937.95	193.96	0.85	1.35	0.28	1.60	2.09	1.02	7.09	8.79	4.54	846,118	
9/19/24	557.18	988.06	82.35	0.80	1.42	0.12	1.55	2.14	0.82	6.96	8.75	2.98	802,342	
9/20/24	343.76	780.91	195.90	0.50	1.13	0.28	1.29	1.85	1.05	5.67	8.16	4.52	495,010	
Week:	**523.98**	**988.06**	**82.35**	**0.76**	**1.42**	**0.12**	**1.51**	**2.14**	**0.82**	**6.77**	**9.08**	**2.98**	**3,772,655**	
Totals:	**570.34**	**1504.40**	**82.35**	**0.82**	**2.17**	**0.12**	**1.56**	**2.50**	**0.82**	**7.07**	**11.24**	**2.98**	**14,783,162**	

Utility Systems Science and Software

Report Date: 09/25/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Irvine Ave MH 119942

Statistics for 2024.07 Irvine Ave MH 119942:
09/03/2024 thru 09/20/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Total Gal**	**Rain**
9/3/24	559.31	622.47	374.78	0.81	0.90	0.54	2.52	2.67	2.31	5.43	5.96	4.36	805,400	
9/4/24	464.91	661.05	166.40	0.67	0.95	0.24	2.40	2.72	1.91	4.82	5.89	2.82	669,468	
9/5/24	454.27	636.60	162.33	0.65	0.92	0.23	2.36	2.62	1.88	4.80	5.88	2.79	654,148	
9/6/24	476.23	686.86	213.69	0.69	0.99	0.31	2.39	2.60	1.95	4.96	6.23	3.27	685,778	
9/7/24	440.22	630.98	165.74	0.63	0.91	0.24	2.37	2.61	1.89	4.69	5.86	2.85	633,918	
9/8/24	426.79	586.48	184.07	0.61	0.85	0.27	2.34	2.57	1.94	4.63	5.75	2.98	614,580	
Week:	**470.29**	**686.86**	**162.33**	**0.68**	**0.99**	**0.23**	**2.39**	**2.72**	**1.88**	**4.89**	**6.23**	**2.79**	**4,063,291**	
9/9/24	454.12	665.44	167.83	0.65	0.96	0.24	2.37	2.70	1.90	4.80	6.15	2.82	653,930	
9/10/24	457.48	660.28	172.77	0.66	0.95	0.25	2.38	2.78	1.91	4.80	5.82	2.87	658,775	
9/11/24	453.31	633.03	174.86	0.65	0.91	0.25	2.36	2.64	1.94	4.79	5.92	2.87	652,771	
9/12/24	460.16	629.41	173.16	0.66	0.91	0.25	2.38	2.66	1.91	4.82	5.78	2.90	662,629	
9/13/24	455.28	660.41	175.74	0.66	0.95	0.25	2.36	2.61	1.90	4.80	5.98	2.95	655,609	

Statistics for 2024.07 Irvine Ave MH 119942:
09/03/2024 thru 09/20/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Total Gal	Rain
9/14/24	429.64	668.68	163.81	0.62	0.96	0.24	2.35	2.61	1.85	4.60	6.22	2.86	618,680	
9/15/24	410.67	571.82	165.38	0.59	0.82	0.24	2.35	2.68	1.93	4.48	5.45	2.78	591,361	
Week:	**445.81**	**668.68**	**163.81**	**0.64**	**0.96**	**0.24**	**2.36**	**2.78**	**1.85**	**4.73**	**6.22**	**2.78**	**4,493,754**	
9/16/24	447.82	704.24	154.35	0.65	1.01	0.22	2.38	2.71	1.89	4.69	6.46	2.70	644,860	
9/17/24	457.48	683.91	171.20	0.66	0.99	0.25	2.41	2.79	1.91	4.75	5.94	2.89	658,770	
9/18/24	447.44	640.20	158.14	0.64	0.92	0.23	2.36	2.82	1.89	4.73	6.24	2.74	644,319	
9/19/24	443.02	623.82	151.26	0.64	0.90	0.22	2.33	2.68	1.87	4.76	5.93	2.68	637,950	
9/20/24	325.87	633.28	170.60	0.47	0.91	0.25	2.17	2.63	1.93	4.01	5.88	2.84	469,254	
Week:	**424.33**	**704.24**	**151.26**	**0.61**	**1.01**	**0.22**	**2.33**	**2.82**	**1.87**	**4.59**	**6.46**	**2.68**	**3,055,153**	
Totals:	**448.00**	**704.24**	**151.26**	**0.65**	**1.01**	**0.22**	**2.36**	**2.82**	**1.85**	**4.74**	**6.46**	**2.68**	**11,612,198**	

Utility Systems Science and Software

Report Date: 09/26/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Irvine Ave MH 120016

Statistics for 2024.07 Irvine Ave MH 120016:
09/03/2024 thru 09/20/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Total Gal	Rain
9/3/24	416.19	465.94	230.15	0.60	0.67	0.33	2.07	2.25	1.15	5.08	5.28	4.55	599,321	
9/4/24	383.19	524.01	236.24	0.55	0.76	0.34	2.03	2.38	1.79	4.80	5.43	3.77	551,798	
9/5/24	385.65	524.01	231.56	0.56	0.76	0.33	2.04	2.38	1.79	4.81	5.42	3.73	555,342	
9/6/24	390.35	545.42	261.60	0.56	0.79	0.38	2.04	2.36	1.84	4.86	5.60	3.98	562,099	
9/7/24	370.09	524.01	240.96	0.53	0.76	0.35	2.01	2.38	1.80	4.73	5.41	3.81	532,927	
9/8/24	361.77	469.32	249.35	0.52	0.68	0.36	1.99	2.25	1.82	4.69	5.31	3.88	520,954	
Week:	**384.54**	**545.42**	**230.15**	**0.55**	**0.79**	**0.33**	**2.03**	**2.38**	**1.15**	**4.83**	**5.60**	**3.73**	**3,322,441**	
9/9/24	380.34	495.45	246.94	0.55	0.71	0.36	2.02	2.25	1.81	4.80	5.48	3.86	547,695	
9/10/24	381.59	465.94	237.41	0.55	0.67	0.34	2.03	2.25	1.80	4.79	5.33	3.78	549,490	
9/11/24	387.57	524.01	239.78	0.56	0.76	0.35	2.04	2.38	1.80	4.83	5.47	3.80	558,107	
9/12/24	393.38	524.01	260.36	0.57	0.76	0.38	2.05	2.38	1.84	4.87	5.47	3.97	566,468	
9/13/24	375.87	489.71	239.78	0.54	0.71	0.35	2.02	2.25	1.80	4.76	5.42	3.80	541,249	

Statistics for 2024.07 Irvine Ave MH 120016:
09/03/2024 thru 09/20/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Total Gal**	**Rain**
9/14/24	366.36	524.01	242.15	0.53	0.76	0.35	2.00	2.38	1.80	4.70	5.47	3.82	527,554	
9/15/24	359.86	460.90	249.35	0.52	0.66	0.36	2.00	2.25	1.82	4.66	5.27	3.88	518,204	
Week:	**377.85**	**524.01**	**237.41**	**0.54**	**0.76**	**0.34**	**2.02**	**2.38**	**1.80**	**4.77**	**5.48**	**3.78**	**3,808,767**	
9/16/24	388.05	524.29	239.78	0.56	0.76	0.35	2.03	2.28	1.80	4.84	5.58	3.80	558,786	
9/17/24	387.59	545.42	261.60	0.56	0.79	0.38	2.04	2.38	1.84	4.83	5.60	3.98	558,128	
9/18/24	368.65	460.90	216.76	0.53	0.66	0.31	2.01	2.25	1.73	4.71	5.25	3.64	530,849	
9/19/24	375.22	487.16	213.06	0.54	0.70	0.31	2.01	2.25	1.72	4.77	5.47	3.62	540,319	
9/20/24	329.41	495.45	249.35	0.47	0.71	0.36	1.93	2.21	1.26	4.47	5.54	3.88	474,353	
Week:	**369.78**	**545.42**	**213.06**	**0.53**	**0.79**	**0.31**	**2.00**	**2.38**	**1.26**	**4.73**	**5.60**	**3.62**	**2,662,436**	
Totals:	**377.84**	**545.42**	**213.06**	**0.54**	**0.79**	**0.31**	**2.02**	**2.38**	**1.15**	**4.78**	**5.60**	**3.62**	**9,793,644**	

Utility Systems Science and Software

Report Date: 10/08/2024
Customer: Fuscoe
Group: Snug Harbor Surf Park
Site: 2024.07 Mesa Dr MH 105877

Statistics for 2024.07 Mesa Dr MH 105877: 09/20/2024 thru 10/07/2024

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Total Gal	Rain
9/20/24	49.45	83.21	24.31	0.07	0.12	0.04	1.85	2.72	1.09	1.52	1.77	1.35	71,209	
9/21/24	38.81	70.39	9.68	0.06	0.10	0.01	1.67	2.79	0.50	1.37	1.50	1.18	55,883	
9/22/24	39.80	70.52	11.10	0.06	0.10	0.02	1.68	2.87	0.52	1.40	1.62	1.23	57,318	
Week:	**42.69**	**83.21**	**9.68**	**0.06**	**0.12**	**0.01**	**1.74**	**2.87**	**0.50**	**1.43**	**1.77**	**1.18**	**184,410**	
9/23/24	43.25	91.20	7.49	0.06	0.13	0.01	1.49	2.58	0.41	1.54	1.91	1.17	62,277	
9/24/24	45.98	82.84	15.09	0.07	0.12	0.02	1.73	2.70	0.70	1.49	1.72	1.28	66,204	
9/25/24	44.06	80.25	9.77	0.06	0.12	0.01	1.64	2.74	0.49	1.49	1.69	1.26	63,442	
9/26/24	48.55	87.37	11.36	0.07	0.13	0.02	1.65	2.81	0.51	1.61	1.85	1.32	69,913	
9/27/24	46.28	82.56	9.69	0.07	0.12	0.01	1.66	2.87	0.40	1.61	1.97	1.30	66,646	
9/28/24	76.04	91.14	53.44	0.11	0.13	0.08	2.47	2.90	1.77	1.71	1.78	1.61	109,495	
9/29/24	54.27	88.78	24.60	0.08	0.13	0.04	2.00	2.82	1.14	1.54	1.74	1.33	78,154	
Week:	**51.20**	**91.20**	**7.49**	**0.07**	**0.13**	**0.01**	**1.80**	**2.90**	**0.40**	**1.57**	**1.97**	**1.17**	**516,130**	
9/30/24	47.45	112.47	10.78	0.07	0.16	0.02	1.69	3.09	0.53	1.52	1.92	1.24	68,327	

	Flow (GPM)			Flow (MGD)			Velocity (FPS)			Level (inches)				
Date	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Total Gal	Rain
10/1/24	45.99	85.48	11.83	0.07	0.12	0.02	1.72	2.81	0.55	1.50	1.72	1.29	66,230	
10/2/24	45.62	86.88	15.39	0.07	0.13	0.02	1.74	2.85	0.72	1.48	1.70	1.30	65,699	
10/3/24	42.66	79.41	8.36	0.06	0.11	0.01	1.59	2.67	0.46	1.47	1.68	1.19	61,424	
10/4/24	41.60	77.69	10.57	0.06	0.11	0.02	1.56	2.62	0.53	1.49	1.70	1.27	59,909	
10/5/24	42.31	82.51	11.15	0.06	0.12	0.02	1.72	3.15	0.54	1.42	1.58	1.26	60,921	
10/6/24	46.95	96.93	10.54	0.07	0.14	0.02	1.75	2.87	0.56	1.48	1.91	1.16	67,613	
Week:	**44.66**	**112.47**	**8.36**	**0.06**	**0.16**	**0.01**	**1.68**	**3.15**	**0.46**	**1.48**	**1.92**	**1.16**	**450,122**	
10/7/24	30.86	84.87	14.47	0.04	0.12	0.02	1.17	2.50	0.73	1.45	1.83	1.22	44,444	
Week:	**30.86**	**84.87**	**14.47**	**0.04**	**0.12**	**0.02**	**1.17**	**2.50**	**0.73**	**1.45**	**1.83**	**1.22**	**44,444**	
Totals:	**46.11**	**112.47**	**7.49**	**0.07**	**0.16**	**0.01**	**1.71**	**3.15**	**0.40**	**1.51**	**1.97**	**1.16**	**1,195,108**	

Appendix 6

Sewer Generation Calculations

Snug Harbor
(1/2025)
Sewer Flow Generation to Costa Mesa Sanitary District (CMSD) Sewer System

Proposed Lagoon, Pools, Spa Filter Backwash *	Avg Flow (m3/year)	Avg Flow (gal/year)	Avg Flow (gal/day (gpd))	Avg Flow (mgd)
Backwash Losses	730	192,846	528	0.000528
Lagoon Operation (Filter Clean & Splashout)	71,895	18,992,650	52,035	0.052035
Spa (0.1% of lagoon area)	-	19,185	53	0.000053
Pools (1.4% of lagoon area)	-	268,597	736	0.000736
		TOTALS	53351	0.053351
* Note: Wavegarden evaulations (see Appendix 8)				

Proposed Clubhouse and Accommodations	Size (sf) or Keys (rooms) or no. of showers	AVG UNIT FLOW (gpd/Ksf) of (gpd/key) or (gpd/shower)**	Avg Flow (gal/day (gpd))	Avg Flow (mgd)
Clubhouse Building (sf)	68,478	0.10	6,848	0.006848
Athlete Accommodations (Rms)	20	150	3,000	0.003000
Restroom Building	738	0.10	74	0.000074
Showers for Pools/Lagoons (Each)	9	54	486	0.000486
		TOTALS	10,408	0.01041
**Avg Daily Flow Per CMSD (See Appendix 4)				

	MGD	GPD	GPM	
PROPOSED AVG FLOWS	0.0638	63,759	44.3	
TOTAL PROPOSED PEAK FLOWS (2.5 PEAKING FACTOR)	0.1594	159,398	111	Use 111 gpm

Note:2 Lagoons holds 10.2 million gallons, and each needs to be fully drained every 2 years.

Gallons to Drain for Lagoon (every 2 years)	GPM (assume)	Minutes to Drain	Hours to Drain	Days to Drain
5,100,000	649	7858	131	5.5

Appendix 7

Flow Depth Calculations

Worksheet for Circular Pipe - 12-inch-capacity

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0146 ft/ft
Normal Depth	6.00 in
Diameter	12.0 in

Results

Discharge	966 gpm
Flow Area	0.4 ft²
Wetted Perimeter	1.6 ft
Hydraulic Radius	3.00 in
Top Width	1.00 ft
Critical Depth	7.52 in
Percent Full	50.0 %
Critical Slope	0.0071 ft/ft
Velocity	5.48 ft/s
Velocity Head	0.47 ft
Specific Energy	0.97 ft
Froude Number	1.542
Maximum Discharge	2,078 gpm
Discharge Full	1,932 gpm
Slope Full	0.0037 ft/ft
Flow Type	Supercritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	6.00 in
Critical Depth	7.52 in
Channel Slope	0.0146 ft/ft
Critical Slope	0.0071 ft/ft

Worksheet for Circular Pipe - 12-inch-Existing

Project Description

Friction Method	Manning Formula
Solve For	Channel Slope

Input Data

Roughness Coefficient	0.013
Normal Depth	1.97 in
Diameter	12.0 in
Discharge	113 gpm

Results

Channel Slope	0.0146 ft/ft
Flow Area	0.1 ft²
Wetted Perimeter	0.8 ft
Hydraulic Radius	1.21 in
Top Width	0.74 ft
Critical Depth	2.47 in
Percent Full	16.4 %
Critical Slope	0.0058 ft/ft
Velocity	2.99 ft/s
Velocity Head	0.14 ft
Specific Energy	0.30 ft
Froude Number	1.564
Maximum Discharge	2,077 gpm
Discharge Full	1,930 gpm
Slope Full	0.0000 ft/ft
Flow Type	Supercritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	16.4 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	1.97 in
Critical Depth	2.47 in
Channel Slope	0.0146 ft/ft
Critical Slope	0.0058 ft/ft

Worksheet for Circular Pipe - 12-inch-Proposed Condition

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0146 ft/ft
Diameter	12.0 in
Discharge	239 gpm

Results

Normal Depth	2.85 in
Flow Area	0.1 ft²
Wetted Perimeter	1.0 ft
Hydraulic Radius	1.68 in
Top Width	0.85 ft
Critical Depth	3.64 in
Percent Full	23.7 %
Critical Slope	0.0056 ft/ft
Velocity	3.73 ft/s
Velocity Head	0.22 ft
Specific Energy	0.45 ft
Froude Number	1.608
Maximum Discharge	2,078 gpm
Discharge Full	1,932 gpm
Slope Full	0.0002 ft/ft
Flow Type	Supercritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	23.7 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	2.85 in
Critical Depth	3.64 in
Channel Slope	0.0146 ft/ft
Critical Slope	0.0056 ft/ft

Worksheet for Circular Pipe - 12-inch-REVISED Existing

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0146 ft/ft
Diameter	12.0 in
Discharge	128 gpm

Results

Normal Depth	2.09 in
Flow Area	0.1 ft²
Wetted Perimeter	0.9 ft
Hydraulic Radius	1.28 in
Top Width	0.76 ft
Critical Depth	2.64 in
Percent Full	17.4 %
Critical Slope	0.0057 ft/ft
Velocity	3.10 ft/s
Velocity Head	0.15 ft
Specific Energy	0.32 ft
Froude Number	1.573
Maximum Discharge	2,077 gpm
Discharge Full	1,930 gpm
Slope Full	0.0001 ft/ft
Flow Type	Supercritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	17.4 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	2.09 in
Critical Depth	2.64 in
Channel Slope	0.0146 ft/ft
Critical Slope	0.0057 ft/ft

Worksheet for Circular Pipe - 21-inch-capacity

Irvine/Mesa

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0024 ft/ft
Normal Depth	15.75 in
Diameter	21.0 in

Results

Discharge	3,144 gpm
Flow Area	1.9 ft²
Wetted Perimeter	3.7 ft
Hydraulic Radius	6.34 in
Top Width	1.52 ft
Critical Depth	11.75 in
Percent Full	75.0 %
Critical Slope	0.0054 ft/ft
Velocity	3.62 ft/s
Velocity Head	0.20 ft
Specific Energy	1.52 ft
Froude Number	0.565
Maximum Discharge	3,708 gpm
Discharge Full	3,447 gpm
Slope Full	0.0020 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	15.75 in
Critical Depth	11.75 in
Channel Slope	0.0024 ft/ft
Critical Slope	0.0054 ft/ft

Worksheet for Circular Pipe - 21-inch-capacity-to Irvine-Pump Station

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0023 ft/ft
Normal Depth	15.75 in
Diameter	21.0 in

Results

Discharge	3,110 gpm
Flow Area	1.9 ft²
Wetted Perimeter	3.7 ft
Hydraulic Radius	6.34 in
Top Width	1.52 ft
Critical Depth	11.68 in
Percent Full	75.0 %
Critical Slope	0.0054 ft/ft
Velocity	3.58 ft/s
Velocity Head	0.20 ft
Specific Energy	1.51 ft
Froude Number	0.559
Maximum Discharge	3,669 gpm
Discharge Full	3,410 gpm
Slope Full	0.0019 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	15.75 in
Critical Depth	11.68 in
Channel Slope	0.0023 ft/ft
Critical Slope	0.0054 ft/ft

Worksheet for Circular Pipe - 21-inch-Irvine-Mesa-Exist

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0024 ft/ft
Diameter	21.0 in
Discharge	546 gpm

Results

Normal Depth	5.60 in
Flow Area	0.5 ft²
Wetted Perimeter	1.9 ft
Hydraulic Radius	3.25 in
Top Width	1.55 ft
Critical Depth	4.74 in
Percent Full	26.7 %
Critical Slope	0.0047 ft/ft
Velocity	2.36 ft/s
Velocity Head	0.09 ft
Specific Energy	0.55 ft
Froude Number	0.722
Maximum Discharge	3,771 gpm
Discharge Full	3,506 gpm
Slope Full	0.0001 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	5.60 in
Critical Depth	4.74 in
Channel Slope	0.0024 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 21-inch-Irvine-Mesa-Proposed Condition

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0024 ft/ft
Diameter	21.0 in
Discharge	672 gpm

Results

Normal Depth	6.23 in
Flow Area	0.6 ft²
Wetted Perimeter	2.0 ft
Hydraulic Radius	3.56 in
Top Width	1.60 ft
Critical Depth	5.27 in
Percent Full	29.7 %
Critical Slope	0.0047 ft/ft
Velocity	2.51 ft/s
Velocity Head	0.10 ft
Specific Energy	0.62 ft
Froude Number	0.722
Maximum Discharge	3,771 gpm
Discharge Full	3,506 gpm
Slope Full	0.0001 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	6.23 in
Critical Depth	5.27 in
Channel Slope	0.0024 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 21-inch-Irvine-Mesa-REVISED Exist

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0024 ft/ft
Diameter	21.0 in
Discharge	561 gpm

Results

Normal Depth	5.68 in
Flow Area	0.5 ft²
Wetted Perimeter	1.9 ft
Hydraulic Radius	3.29 in
Top Width	1.55 ft
Critical Depth	4.81 in
Percent Full	27.0 %
Critical Slope	0.0047 ft/ft
Velocity	2.38 ft/s
Velocity Head	0.09 ft
Specific Energy	0.56 ft
Froude Number	0.722
Maximum Discharge	3,771 gpm
Discharge Full	3,506 gpm
Slope Full	0.0001 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	5.68 in
Critical Depth	4.81 in
Channel Slope	0.0024 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 21-inch-Irvine-to Pump Sta-Exist

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0023 ft/ft
Diameter	21.0 in
Discharge	705 gpm

Results

Normal Depth	6.46 in
Flow Area	0.6 ft²
Wetted Perimeter	2.1 ft
Hydraulic Radius	3.66 in
Top Width	1.62 ft
Critical Depth	5.40 in
Percent Full	30.7 %
Critical Slope	0.0047 ft/ft
Velocity	2.50 ft/s
Velocity Head	0.10 ft
Specific Energy	0.64 ft
Froude Number	0.707
Maximum Discharge	3,693 gpm
Discharge Full	3,433 gpm
Slope Full	0.0001 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	6.46 in
Critical Depth	5.40 in
Channel Slope	0.0023 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 21-inch-Irvine-to Pump Sta-Proposed Condition

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0023 ft/ft
Diameter	21.0 in
Discharge	831 gpm

Results

Normal Depth	7.04 in
Flow Area	0.7 ft²
Wetted Perimeter	2.2 ft
Hydraulic Radius	3.93 in
Top Width	1.65 ft
Critical Depth	5.88 in
Percent Full	33.5 %
Critical Slope	0.0047 ft/ft
Velocity	2.62 ft/s
Velocity Head	0.11 ft
Specific Energy	0.69 ft
Froude Number	0.706
Maximum Discharge	3,693 gpm
Discharge Full	3,433 gpm
Slope Full	0.0001 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	7.04 in
Critical Depth	5.88 in
Channel Slope	0.0023 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 21-inch-Irvine-to Pump Sta-REVISED Exist

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0023 ft/ft
Diameter	21.0 in
Discharge	720 gpm

Results

Normal Depth	6.53 in
Flow Area	0.6 ft²
Wetted Perimeter	2.1 ft
Hydraulic Radius	3.70 in
Top Width	1.62 ft
Critical Depth	5.46 in
Percent Full	31.1 %
Critical Slope	0.0047 ft/ft
Velocity	2.52 ft/s
Velocity Head	0.10 ft
Specific Energy	0.64 ft
Froude Number	0.707
Maximum Discharge	3,693 gpm
Discharge Full	3,433 gpm
Slope Full	0.0001 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	6.53 in
Critical Depth	5.46 in
Channel Slope	0.0023 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 24-inch-capacity

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0011 ft/ft
Normal Depth	18.00 in
Diameter	24.0 in

Results

Discharge	3,071 gpm
Flow Area	2.5 ft^2
Wetted Perimeter	4.2 ft
Hydraulic Radius	7.24 in
Top Width	1.73 ft
Critical Depth	11.13 in
Percent Full	75.0 %
Critical Slope	0.0047 ft/ft
Velocity	2.71 ft/s
Velocity Head	0.11 ft
Specific Energy	1.61 ft
Froude Number	0.395
Maximum Discharge	3,622 gpm
Discharge Full	3,367 gpm
Slope Full	0.0009 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	18.00 in
Critical Depth	11.13 in
Channel Slope	0.0011 ft/ft
Critical Slope	0.0047 ft/ft

Worksheet for Circular Pipe - 24-inch-capacity-Exist

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0011 ft/ft
Diameter	24.0 in
Discharge	1,505 gpm

Results

Normal Depth	11.24 in
Flow Area	1.4 ft²
Wetted Perimeter	3.0 ft
Hydraulic Radius	5.75 in
Top Width	2.00 ft
Critical Depth	7.68 in
Percent Full	46.8 %
Critical Slope	0.0045 ft/ft
Velocity	2.32 ft/s
Velocity Head	0.08 ft
Specific Energy	1.02 ft
Froude Number	0.481
Maximum Discharge	3,622 gpm
Discharge Full	3,367 gpm
Slope Full	0.0002 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	11.24 in
Critical Depth	7.68 in
Channel Slope	0.0011 ft/ft
Critical Slope	0.0045 ft/ft

Worksheet for Circular Pipe - 24-inch-capacity-Proposed Condition

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0011 ft/ft
Diameter	24.0 in
Discharge	1,631 gpm

Results

Normal Depth	11.78 in
Flow Area	1.5 ft²
Wetted Perimeter	3.1 ft
Hydraulic Radius	5.93 in
Top Width	2.00 ft
Critical Depth	8.01 in
Percent Full	49.1 %
Critical Slope	0.0045 ft/ft
Velocity	2.37 ft/s
Velocity Head	0.09 ft
Specific Energy	1.07 ft
Froude Number	0.477
Maximum Discharge	3,622 gpm
Discharge Full	3,367 gpm
Slope Full	0.0003 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	11.78 in
Critical Depth	8.01 in
Channel Slope	0.0011 ft/ft
Critical Slope	0.0045 ft/ft

Worksheet for Circular Pipe - 24-inch-capacity-REVISED Exist

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013
Channel Slope	0.0011 ft/ft
Diameter	24.0 in
Discharge	1,520 gpm

Results

Normal Depth	11.31 in
Flow Area	1.5 ft²
Wetted Perimeter	3.0 ft
Hydraulic Radius	5.77 in
Top Width	2.00 ft
Critical Depth	7.72 in
Percent Full	47.1 %
Critical Slope	0.0045 ft/ft
Velocity	2.33 ft/s
Velocity Head	0.08 ft
Specific Energy	1.03 ft
Froude Number	0.481
Maximum Discharge	3,622 gpm
Discharge Full	3,367 gpm
Slope Full	0.0002 ft/ft
Flow Type	Subcritical

GVF Input Data

Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	11.31 in
Critical Depth	7.72 in
Channel Slope	0.0011 ft/ft
Critical Slope	0.0045 ft/ft

Appendix 8

Water Loss Evaluation

ANNUAL WATER REQUIREMENTS

Based on the above estimations and hypotheses, total annual fresh water requirements are projected to be:

Water evaporation – rainfall + other losses = Total annual requirement

(16.636.769 gal/year)

Table 1.General water requirements estimation for Newport Beach Cove

Surf lagoon water loss calculation	Totals	Gallons
Temperature mean (ºC)	19	
Open water Evaporation Estimate (m3/year) (gal/year)	48.007	12.683.491
Wave operation Factor WG	1,45	
Backwash losses (m3/year) (gal/year)	730	192.867
Average Evaporation Water Loss (m3/day) (gal/year)	191	50.337
Operating Water Loss (m3/year)(gal/year)	70.340	18.583.929
Annual rainfall (mm)(inch)	335	13
Annual rainfall (m3) (gal)	7.370	1.947.160
Total Year Water Requirements (m3/year) (gal/year)	**62.970**	**16.636.769**
Mean total water requirements (m3/day) (gal/day)	**173**	**45.580**
Average total water requirements not considering Annual fill and no rain (m3/day)(gal/day)	**193**	**50.915**
Maximum daily August (max average temp) (m3/day)(gal/day)	**272**	**71.811**

ANNUAL WATER REQUIREMENTS

Based on the above estimations and hypotheses, total annual fresh water requirements are projected to be:

Water evaporation – rainfall + other losses = Total annual requirement

(15.340.444 gal/year)

Table 1.General water requirements estimation for Newport Beach Cove

Surf lagoon water loss calculation	Totals	Gallons
Temperature mean (ºC)	19	
Open water Evaporation Estimate (m3/year) (gal/year)	43.184	11.409.377
Wave operation Factor WG	1,45	
Backwash losses (m3/year) (gal/year)	730	192.867
Average Evaporation Water Loss (m3/day) (gal/year)	171	45.281
Operating Water Loss (m3/year)(gal/year)	63.348	16.736.463
Annual rainfall (mm)(inch)	267	11
Annual rainfall (m3) (gal)	5.284	1.396.018
Total Year Water Requirements (m3/year) (gal/year)	**58.064**	**15.340.444**
Mean total water requirements (m3/day) (gal/day)	**159**	**42.029**
Average total water requirements not considering Annual fill and no rain (m3/day)(gal/day)	**174**	**45.853**
Maximum daily August (max average temp) (m3/day)(gal/day)	**245**	**64.597**

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 9

Pump Station Evaluation

PS Name	Pump Station/ Location Description	Service Area ID	Pipe ID	Land Use Areas (acres)	LDR	MDR	PI	Land Use Flow Contribution (MGD)	Modeled Average Flow (MGD)	Modeled Peak Flow (MGD)	Total Inflow (MGD)	Modeled Total Flow (MGD)	Modeled Total Flow (GPM)	Pump Station Capacity (GPM)
Elden	10	219	140136	CR: 27 HDR: 2 MDR: 3				CR: 0.14 HDR: 0.01 MDR: 0.01	0.155	0.330	0.031	0.361	250.7	
	10	220	140135	LDR: 41 MDR: 127 PI: 8				LDR: 0.06 MDR: 0.32 PI: 0.0	0.386	0.766	0.174	0.941	653.2	
	Total PS10			---------------					*0.765*	*1.561*	*0.286*	*1.847*	1282.6	*3750*
	Total PS10 (Inc PS11)			---------------					*1.752*	*3.380*	*0.600*	*3.980*	**2763.9**	***3750***
Irvine	**Total PS11**	221	140015	F: 1 G: 194 GC: 56 HDR: 31 LDR: 134 MDR: 15 PI: 2 RC: 56				F: 0.0 G: 0.04 GC: 0.28 HDR: 0.14 LDR: 0.21 MDR: 0.04 PI: 0.0 RC: 0.28	*0.987*	*1.818*	*0.315*	*2.133*	**1481.3**	***1800***
Santa Ana	12	222	140310	LDR: 0 MDR: 24 PI: 1				LDR: 0.0 MDR: 0.06 PI: 0.0	0.061	0.140	0.024	0.163	113.5	
	12	223	140251	LDR: 28 MDR: 22 PI: 9				LDR: 0.04 MDR: 0.06 PI: 0.0	0.102	0.224	0.059	0.284	196.9	
	12	224	140317	LDR: 178 MDR: 34 PI: 17				LDR: 0.28 MDR: 0.09 PI: 0.0	0.365	0.728	0.231	0.959	666.2	
	12	225	140318	LDR: 1 MDR: 1				LDR: 0.0 MDR: 0.0	0.003	0.007	0.001	0.009	6.2	
	Total PS12			---------------					*0.530*	*1.099*	*0.316*	*1.415*	**982.8**	***1050***
23rd. Street	13	226	150532	LDR: 42	42			LDR: 0.07	0.065	0.149	0.043	0.192	133.2	
	13	227	140424	LDR: 3		3		LDR: 0.0	0.005	0.013	0.005	0.018	12.8	
	13	228	140451	LDR: 62 MDR: 5 PI: 3	62	5	3	LDR: 0.1 MDR: 0.01 PI: 0.0	0.109	0.239	0.070	0.309	214.6	
	Total PS13			---------------					*0.178*	*0.401*	*0.118*	*0.519*	**360.6**	***550***
California	14	229	135690	LDR: 5 PI: 1				LDR: 0.01 PI: 0.0	0.008	0.022	0.008	0.030	20.9	
	14	230	135696	LDR: 22 PI: 0				LDR: 0.03 PI: 0.0	0.034	0.082	0.027	0.109	75.6	
	Total PS14			---------------					*0.042*	*0.104*	*0.035*	*0.139*	**96.5**	***269***
South Coast Plaza	**Total PS16**	238	139209	HDR: 0 LDR: 8 LI: 2 MDR: 8 PI: 2				HDR: 0.0 LDR: 0.01 LI: 0.01 MDR: 0.02 PI: 0.0	*0.041*	*0.098*	*0.023*	*0.120*	**83.5**	***100***
19th. Street	**Total PS17**	231	135860	HDR: 6 LDR: 0 PI: 1				HDR: 0.03 LDR: 0.0 PI: 0.0	*0.030*	*0.073*	*0.008*	*0.081*	**56.2**	***150***
Iowa	**Total PS18**	232	138811	LDR: 0 MDR: 10 PI: 0				LDR: 0.0 MDR: 0.02 PI: 0.0	*0.024*	*0.060*	*0.008*	*0.067*	**46.7**	***110***
Sea Bluff	Total PS19	233	149414	MDR: 6				MDR: 0.01	*0.014*	*0.037*	*0.005*	*0.041*	28.7	*160*

IRVINE PUMP STATION - PUMP 1

9/20/2022

STATIC HEAD	23.92 ft
OUTLET WEIR	24.42 ft
LOW WTER	0.50 ft

FM MATERIAL	DIP
ROUGHNESS CONS.	140
DIAMETER	10.46 in

FRICTION HEAD 10 in

SIZE	FITTING	LENGTH/NUMBER	EQUIV. LENGTH (ft)	TOTAL (ft)
10"	90º	1	18	18
"	45º	1	7	7
"	CHECK V	1	80	80
"	PLUG V	2	170	340
"	TEE THROUGH	2	12	24
"	REDUCER (8"-10")	1	7	7
"	REDUCER (10"-12")	1	7	7
10"	PIPE	18	1	18

TOTAL LENGTH	501

TDH 10in

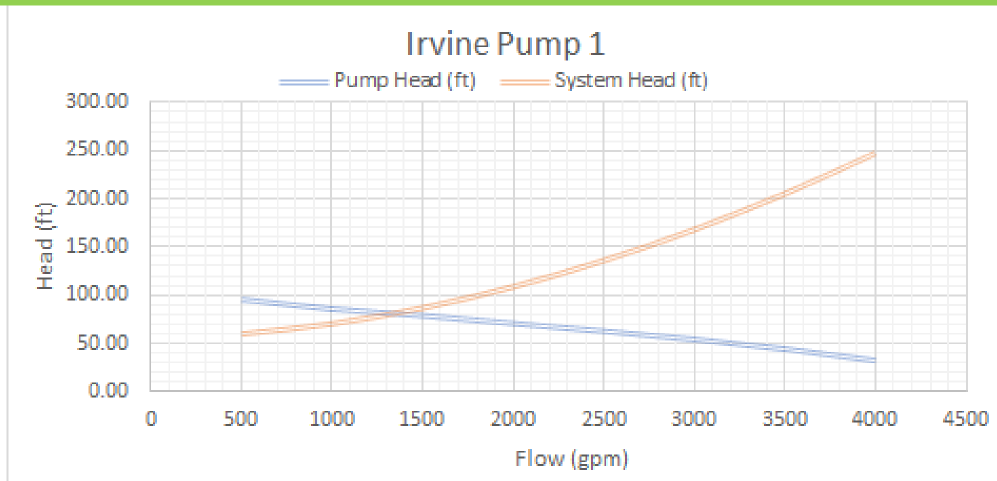
Q(GPM)	H/100'	L/100	Hf	Hs	TDH (ft)
500	0.12	5.01	0.61	23.92	24.53
1000	0.44	5.01	2.20	23.92	26.12
1500	0.93	5.01	4.67	23.92	28.59
2000	1.59	5.01	7.96	23.92	31.88
2500	2.40	5.01	12.03	23.92	35.95
3000	3.37	5.01	16.87	23.92	40.78
3500	4.48	5.01	22.44	23.92	46.35
4000	5.74	5.01	28.73	23.92	52.65
4500	7.13	5.01	35.74	23.92	59.65
5000	8.67	5.01	43.44	23.92	67.35

1350	0.77	5.01	3.84	23.92	27.76

Velocity= 5.04 ft/s

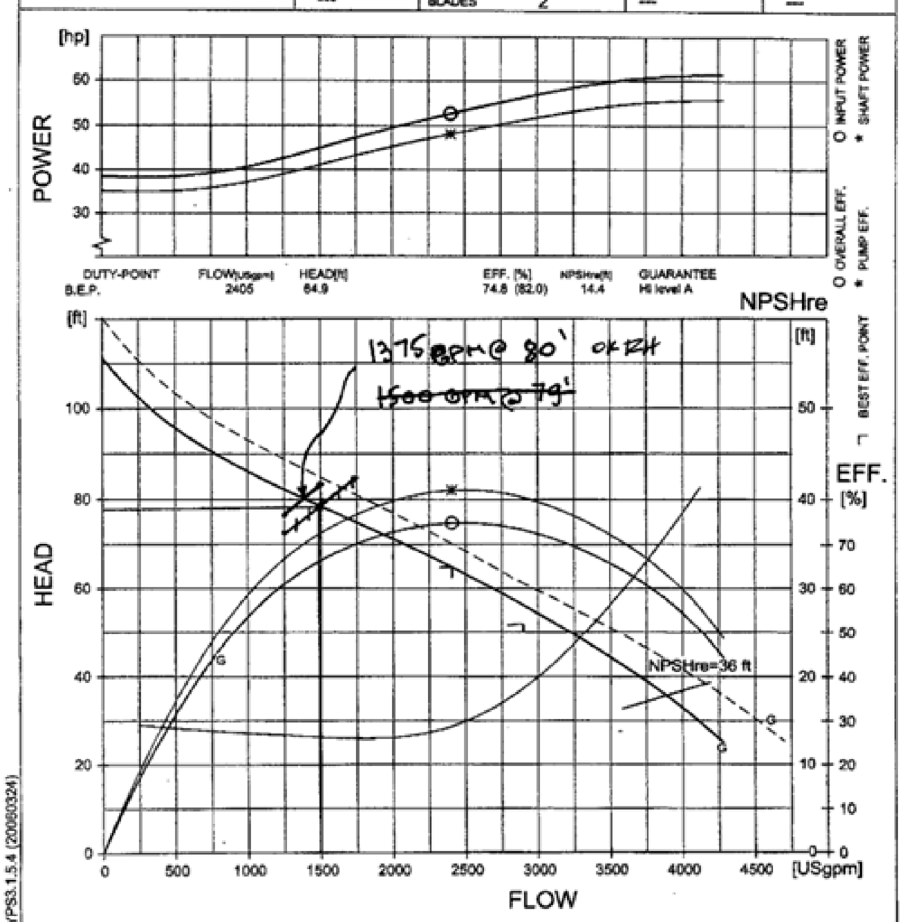
IRVINE PUMP STATION - PUMP 1

9/20/2022



IRVINE P.S.
PUMPING TO FAIR DR w/o ELDEN PUMPING

FLYGT	PERFORMANCE CURVE					PRODUCT NP3202.090	TYPE MT
DATE 2007-01-26	PROJECT CMSD - Irvine LS					CURVE NO 63-640-00-7040	ISSUE 4
	1/1-LOAD	3/4-LOAD	1/2-LOAD	RATED POWER	60 hp	IMPELLER DIAMETER 376 mm	
POWER FACTOR	0.86	0.83	0.74	STARTING CURRENT	420 A	MOTOR # 30-29-6AA	STATOR 01D / REV 10
EFFICIENCY	90.5 %	91.0 %	91.0 %	RATED CURRENT	72 A	FREQ. 60 Hz / PHASES 3 / VOLTAGE 460 V	POLES 6
MOTOR DATA	—	—	—	RATED SPEED	1170 rpm		
COMMENTS		INLET/OUTLET -/ 8 inch		TOT.MOM.OF INERTIA	0.60 kgm2	GEARTYPE ---	RATIO ---
		IMP. THROUGHLET ---		NO. OF BLADES	2		



NPSHre = NPSH3% + min. operational margin
Performance with clear water and ambient temp 40 °C

GUARANTEE BETWEEN LIMITS (G) ACC. TO
HI level A

IRVINE PUMP STATION - PUMP 2

9/20/2022

STATIC HEAD	23.92 ft
OUTLET WEIR	24.42 ft
LOW WTER	0.50 ft

FM MATERIAL	DIP
ROUGHNESS CONS.	140
DIAMETER	10.46 in

FRICTION HEAD 10 in

SIZE	FITTING	LENGTH/NUMBER	EQUIV. LENGTH (ft)	TOTAL (ft)
10"	90º	2	18	36
"	45º	1	7	7
"	CHECK V	1	80	80
"	PLUG V	2	170	340
"	TEE BRANCH	1	47	47
"	TEE THROUGH	1	12	12
"	REDUCER (8"-10")	1	7	7
"	REDUCER (10"-12")	1	7	7
10"	PIPE	18	1	18
			TOTAL LENGTH	554

TDH 10in

Q(GPM)	H/100'	L/100	Hf	Hs	TDH (ft)
500	0.12	5.01	0.61	23.92	24.53
1000	0.44	5.01	2.20	23.92	26.12
1500	0.93	5.01	4.67	23.92	28.59
2000	1.59	5.01	7.96	23.92	31.88
2500	2.40	5.01	12.03	23.92	35.95
3000	3.37	5.01	16.87	23.92	40.78
3500	4.48	5.01	22.44	23.92	46.35
4000	5.74	5.01	28.73	23.92	52.65
4500	7.13	5.01	35.74	23.92	59.65
5000	8.67	5.01	43.44	23.92	67.35
1350	0.77	5.01	3.84	23.92	27.76

Velocity= 5.04 ft/s

STATIC HEAD	32.28 ft
OUTLET WEIR	56.70 ft
LOW WTER	24.42 ft

FM MATERIAL	HDPE
ROUGHNESS CONS.	150
DIAMETER	10.66 in

FRICTION HEAD 12in

SIZE	FITTING	LENGTH/NUMBER	EQUIV. LENGTH (ft)	TOTAL (ft)
"	45º	5	9	45
"	TEE THROUGH	4	14	56
"	REDUCER (12"-14")	1	8	8
12"	PIPE	3436	1	3436
			TOTAL LENGTH	3545

TDH | 12 in

Q(GPM)	H/100'	L/100	Hf	Hs	TDH (ft)
500	0.10	35.45	3.47	32.28	35.75
1000	0.35	35.45	12.52	32.28	44.80
1500	0.75	35.45	26.53	32.28	58.82
2000	1.28	35.45	45.20	32.28	77.49
2500	1.93	35.45	68.33	32.28	100.62
3000	2.70	35.45	95.78	32.28	128.07
3500	3.59	35.45	127.43	32.28	159.71
4000	4.60	35.45	163.18	32.28	195.47
4500	5.72	35.45	202.96	32.28	235.24
5000	6.96	35.45	246.69	32.28	278.97

1350	0.62	35.45	21.83	32.28	54.11

Velocity= 4.86 ft/s

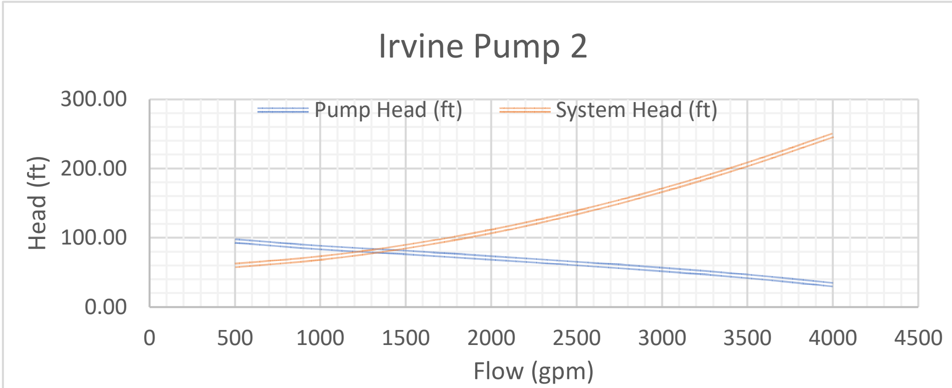
TOTAL TDH

Q(GPM)	TDH (ft)
500	60.28
1000	70.93
1500	87.40
2000	109.36
2500	136.57
3000	168.85
3500	206.07
4000	248.11
4500	294.89
5000	346.33

1350	81.87

Pump & System Head Curve

Q(GPM)	Pump Head (ft)	System Head (ft)
500	95.50	60.28
1000	86.00	70.93
1500	79.00	87.40
2000	71.00	109.36
2500	63.00	136.57
3000	54.50	168.85
3500	44.50	206.07
4000	32.50	248.11



IRVINE P.S.
PUMPING TO FAIR DR w/o ELDEN PUMP

FLYGT	PERFORMANCE CURVE	PRODUCT NP3202.090	TYPE MT
DATE 2007-01-26	PROJECT CMSD - Irvine LS	CURVE NO 63-640-00-7040	ISSUE 4

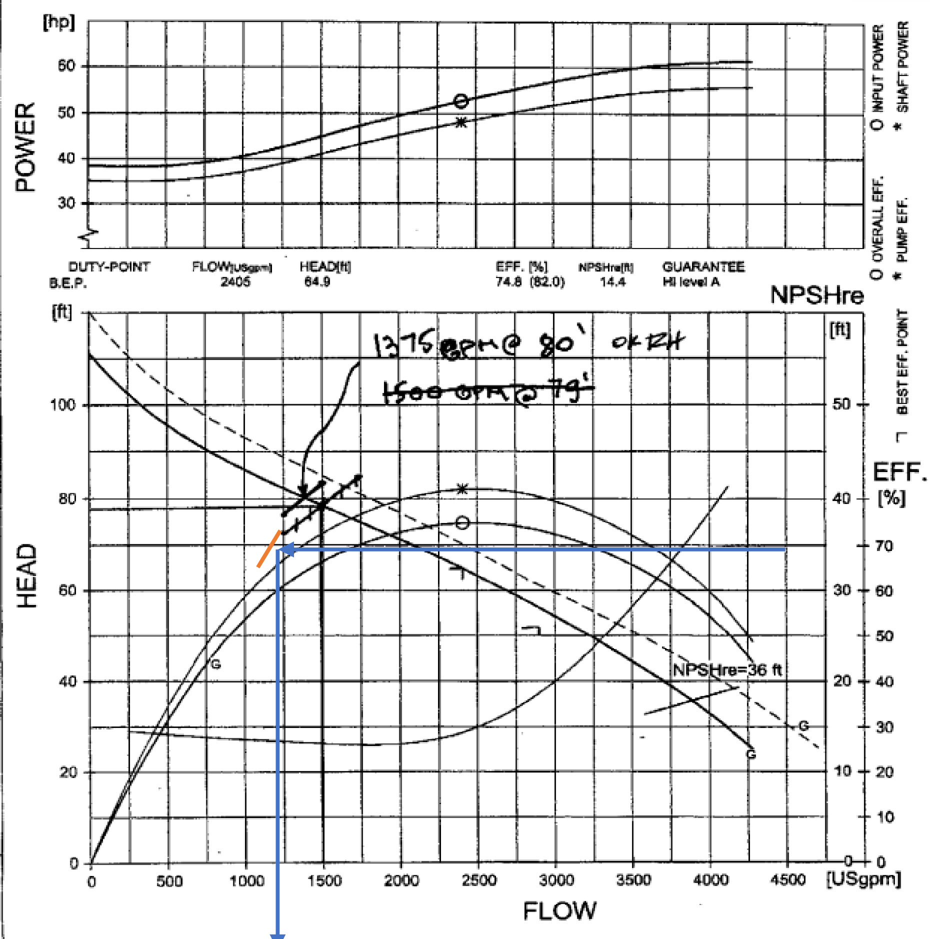
	1/1-LOAD	3/4-LOAD	1/2-LOAD
POWER FACTOR	0.86	0.83	0.74
EFFICIENCY	90.5 %	91.0 %	91.0 %
MOTOR DATA	—	—	—

RATED POWER	60	hp
STARTING CURRENT	420	A
RATED CURRENT	72	A
RATED SPEED	1170	rpm
TOT.MOM.OF INERTIA	0.60	kgm2
NO. OF BLADES	2	

COMMENTS

INLET/OUTLET: -/ 8 inch
IMP. THROUGHLET: ---

IMPELLER DIAMETER 376 mm			
MOTOR # 30-29-6AA	STATOR 01D		REV 10
FREQ. 60 Hz	PHASES 3	VOLTAGE 460 V	POLES 6
GEARTYPE ---		RATIO ---	



FLYPS3.1.5.4 (20060324)

NPSHre = NPSH3% + min. operational margin
Performance with clear water and ambient temp 40 °C

GUARANTEE BETWEEN LIMITS (G) ACC. TO
HI level A

ELDEN PUMP STATION - PUMP 2

9/23/2022

STATIC HEAD	13.37 ft
OUTLET	50.57 ft
LOW WTER	37.20 ft

FM MATERIAL	DIP
ROUGHNESS CONS.	140
DIAMETER	12.52 in

FRICTION HEAD 12 in

SIZE	FITTING	LENGTH/NUMBER	EQUIV. LENGTH (ft)	TOTAL (ft)
12"	90º	1	22	22
"	CHECK V	1	95	95
"	PLUG V	1	170	170
"	TEE BRANCH	1	55	55
"	REDUCER (12"-18")	1	8	8
12"	PIPE	16	1	16

TOTAL LENGTH	366

TDH 12in m

Q(GPM)	H/100'	L/100	Hf	Hs	TDH (ft)
1000	0.18	3.66	0.67	13.37	14.04
1500	0.39	3.66	1.42	13.37	14.79
2000	0.66	3.66	2.42	13.37	15.79
2500	1.00	3.66	3.67	13.37	17.03
3000	1.40	3.66	5.14	13.37	18.51
3500	1.87	3.66	6.84	13.37	20.20
4000	2.39	3.66	8.75	13.37	22.12
4500	2.97	3.66	10.89	13.37	24.26
5000	3.62	3.66	13.23	13.37	26.60
5500	4.31	3.66	15.79	13.37	29.16

3900	2.28	3.66	8.35	13.37	21.72

Velocity= 10.17 ft/s

STATIC HEAD	13.31 ft
OUTLET	63.88 ft
LOW WTER	50.57 ft

FM MATERIAL	DIP
ROUGHNESS CONS.	140
DIAMETER	18.69 in

FRICTION HEAD 18 in

SIZE	FITTING	LENGTH/NUMBER	EQUIV. LENGTH (ft)	TOTAL (ft)
18"	90º	2	33	66
"	45º	8	12	96
"	GATE V	2	12	24
"	TEE THROUGH	4	20	80
18"	PIPE	3497	1	3497

TOTAL LENGTH	3763

ELDEN PUMP STATION - PUMP 2

9/23/2022

TDH 18 in m

Q(GPM)	H/100'	L/100	Hf	Hs	TDH (ft)
1000	0.03	37.63	0.98	13.31	14.29
1500	0.06	37.63	2.08	13.31	15.39
2000	0.09	37.63	3.55	13.31	16.86
2500	0.14	37.63	5.36	13.31	18.68
3000	0.20	37.63	7.52	13.31	20.83
3500	0.27	37.63	10.00	13.31	23.32
4000	0.34	37.63	12.81	13.31	26.12
4500	0.42	37.63	15.93	13.31	29.25
5000	0.51	37.63	19.37	13.31	32.68
5500	0.61	37.63	23.11	13.31	36.42

3900	0.32	37.63	12.22	13.31	25.54

Velocity= 4.56 ft/s

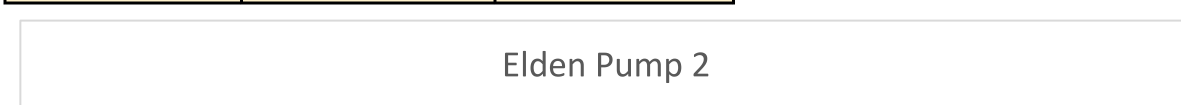
TOTAL TDH

Q(GPM)	TDH (ft)
1000	28.33
1500	30.19
2000	32.65
2500	35.71
3000	39.34
3500	43.52
4000	48.24
4500	53.50
5000	59.28
5500	65.57

3900	47.26

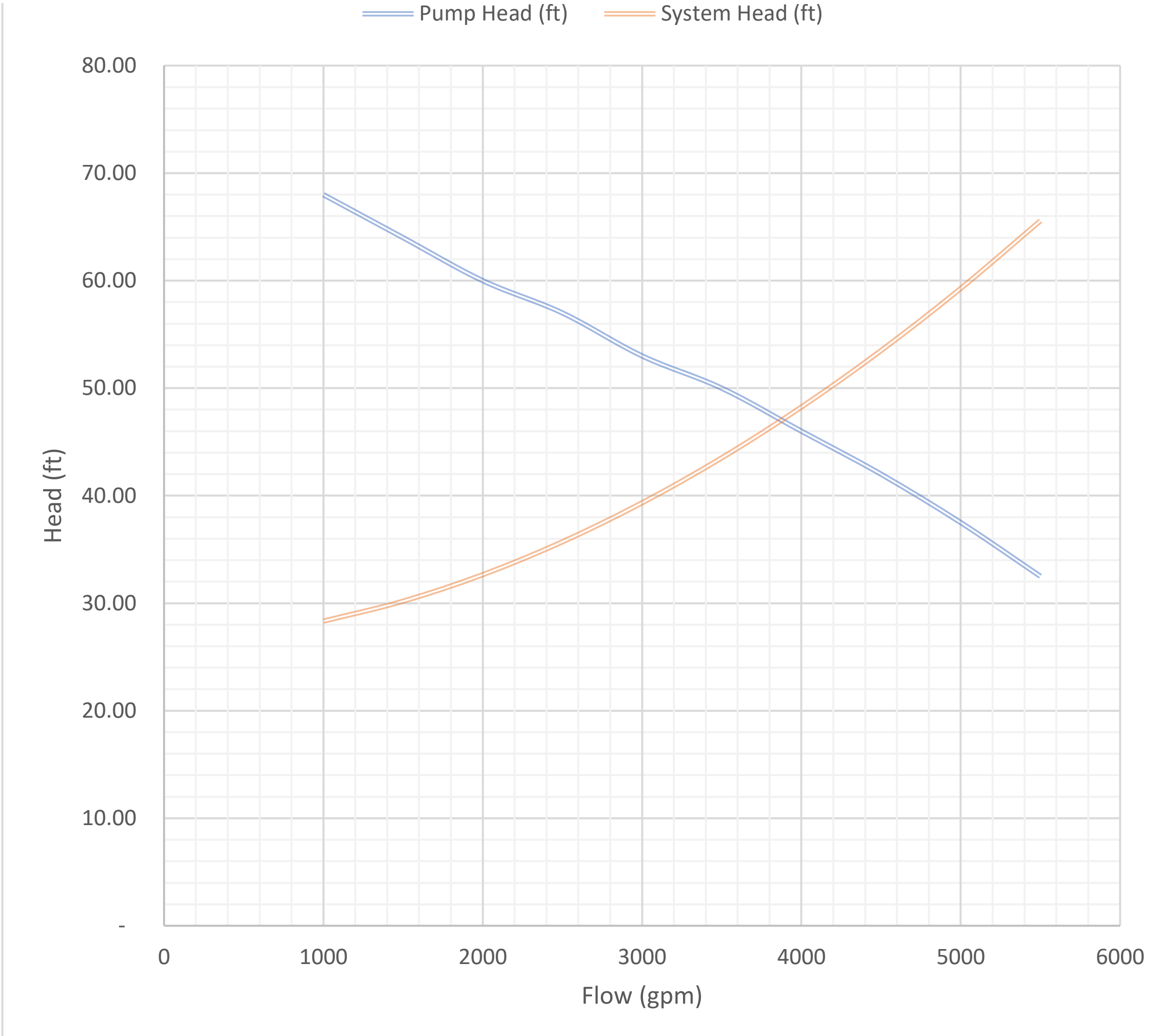
Pump & System Head Curve

Q(GPM)	Pump Head (ft)	System Head (ft)
1000	68.00	28.33
1500	64.00	30.19
2000	60.00	32.65
2500	57.00	35.71
3000	53.00	39.34
3500	50.00	43.52
4000	46.00	48.24
4500	42.00	53.50
5000	37.50	59.28
5500	32.50	65.57



ELDEN PUMP STATION - PUMP 2

9/23/2022



ELDEN

FLYGT	PERFORMANCE CURVE	PRODUCT NP3202.090	TYPE LT
DATE 2007-03-21	PROJECT	CURVE NO 63-614-00-7010	ISSUE 2

	1/1-LOAD	3/4-LOAD	1/2-LOAD
POWER FACTOR	0.86	0.83	0.74
EFFICIENCY	90.5 %	91.0 %	91.0 %
MOTOR DATA	---	---	---

RATED POWER	60	hp
STARTING CURRENT ...	420	A
RATED CURRENT ...	72	A
RATED SPEED	1170	rpm
TOT.MOM.OF INERTIA ...	0.65	kgm2
NO. OF BLADES	2	

COMMENTS

INLET/OUTLET -/ 12 inch

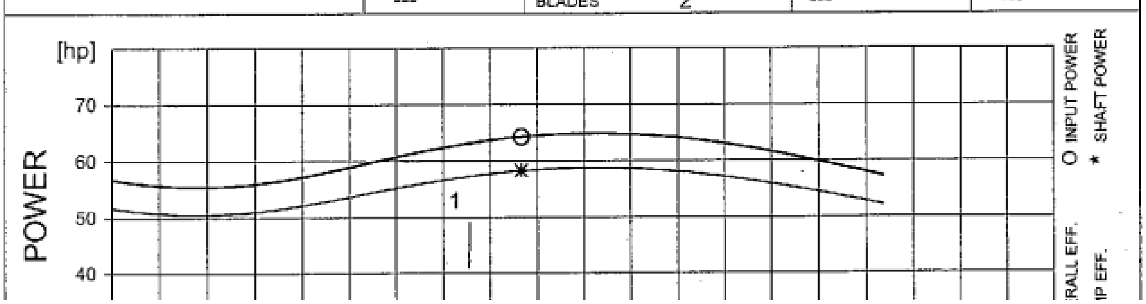
IMP. THROUGHLET ---

IMPELLER DIAMETER 356 mm

MOTOR #	STATOR	REV
30-29-6AA	01D	10

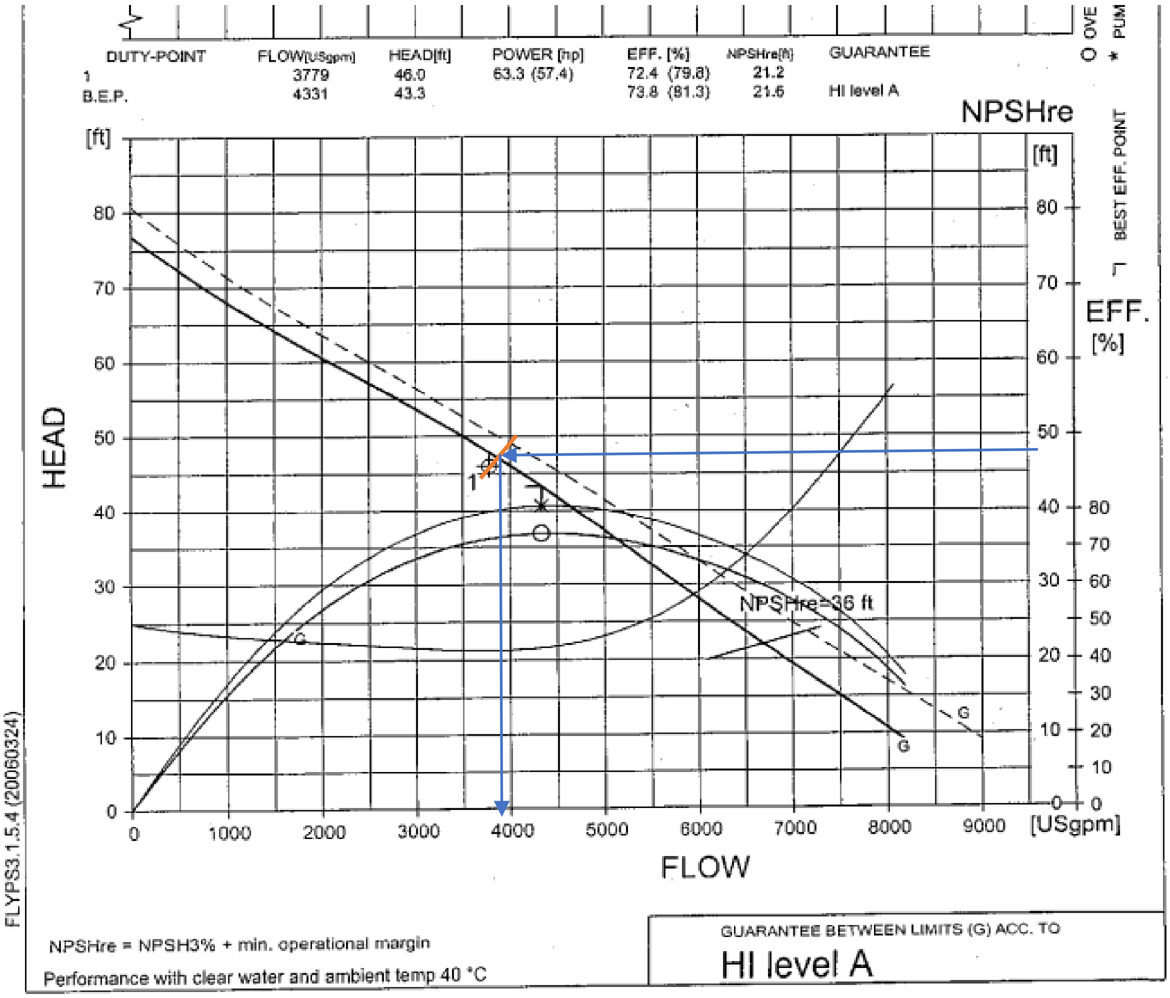
FREQ.	PHASES	VOLTAGE	POLES
60 Hz	3	460 V	6

GEARTYPE	RATIO
---	---



ELDEN PUMP STATION - PUMP 2

9/23/2022



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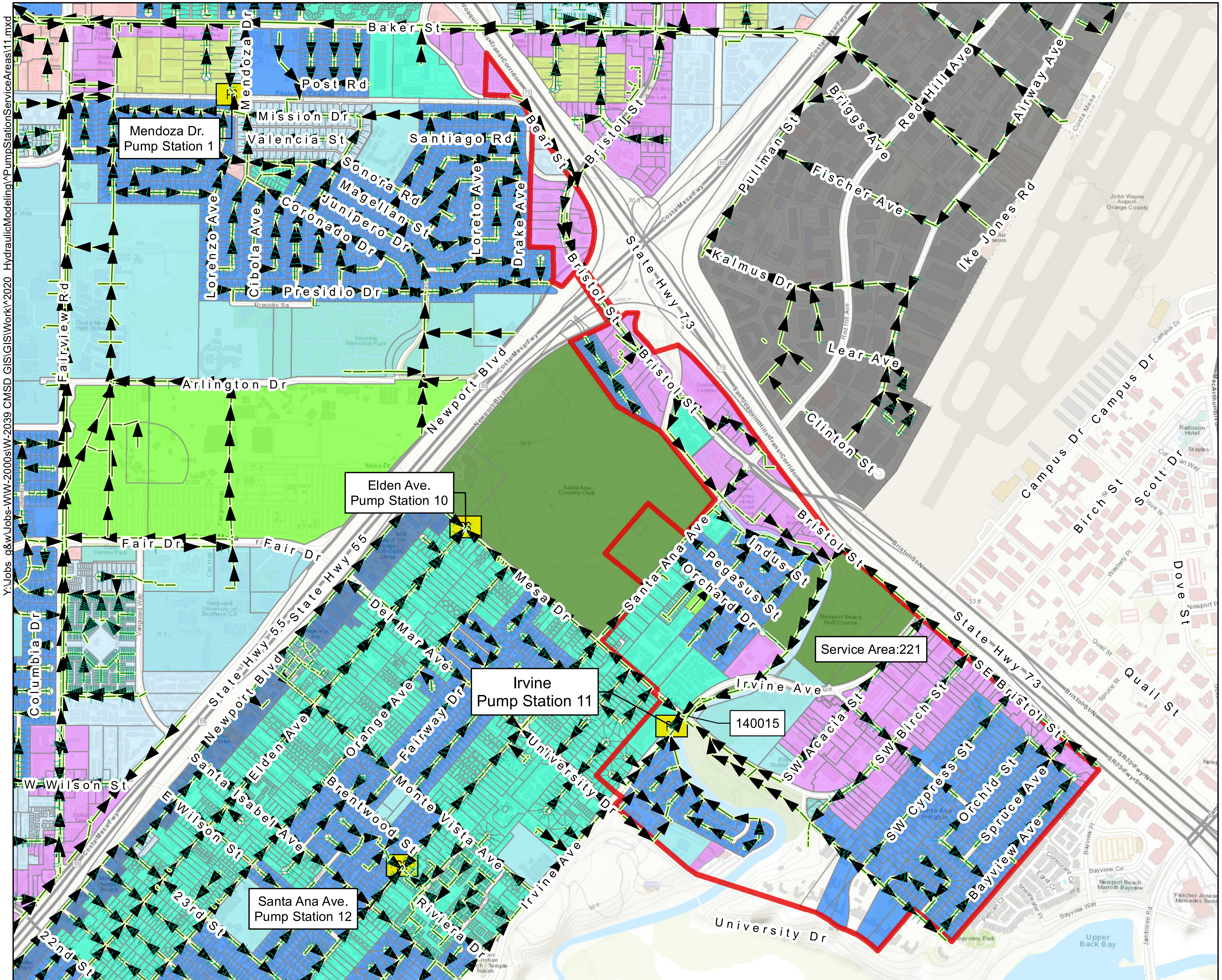


LEGEND

- Lateral Line
- Gravity Main & Flow Direction
- PS Pump Station
- Service Area

Land Use Codes

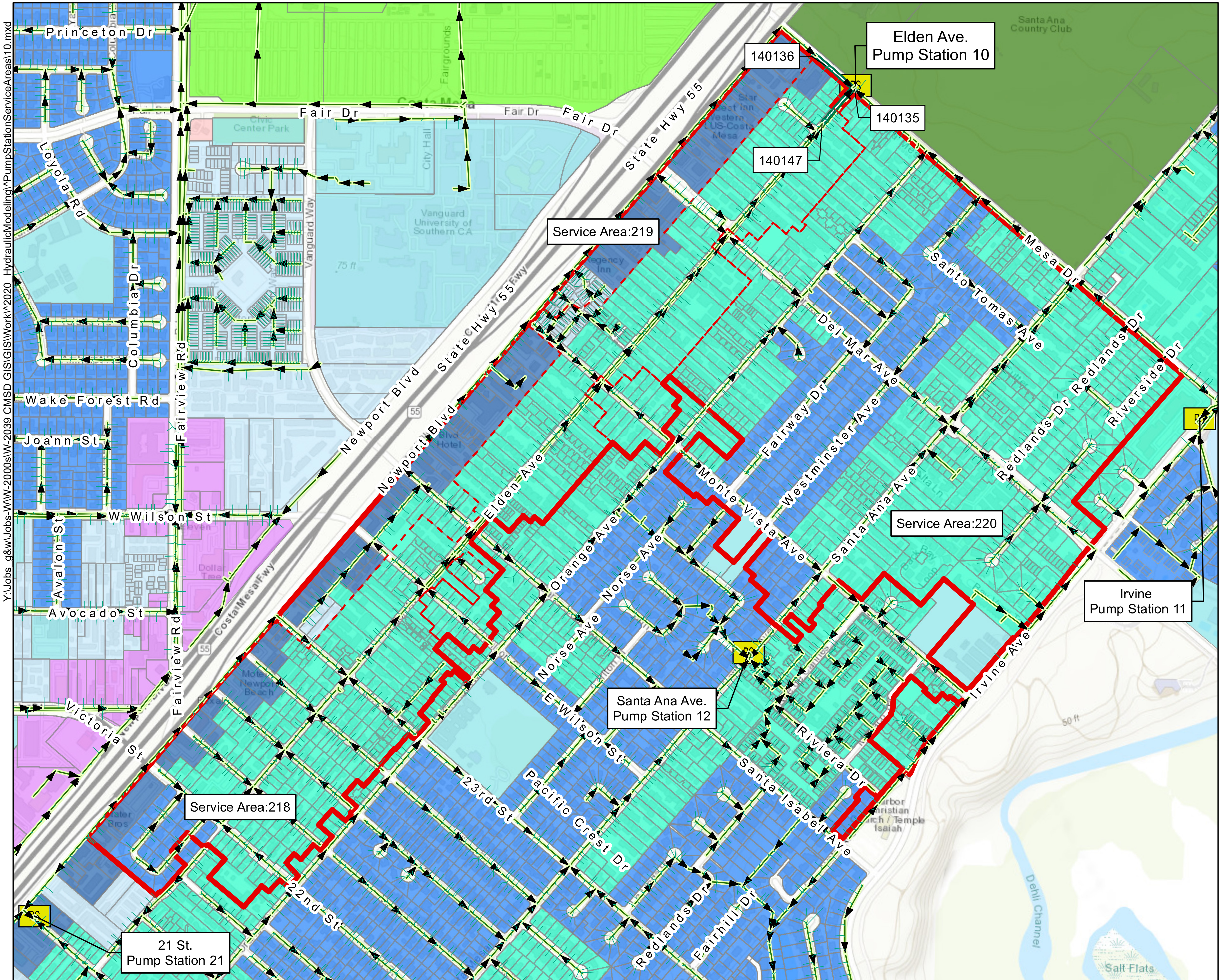
- High Density Residential (HDR)
- Low Density Residential (LDR)
- Medum Density Residential (MDR)
- Commercial Residential (CR)
- Fairgrounds (F)
- Golf Course (G)
- Industrial Park (IP)
- Public/Institutional (PI)
- Regional Commercial (RC)
- Urban Center Commercial (UCC)
- Light Industrial (LI)
- Neighborhood Commercial (NC)
- General Comemercial (GC)
- Cultural Arts Center (CAC)
- Commercial Center (CC)

N W E S

Service Area	Pipe ID	Land Use Code	Land Use Area (Acres)
221	140015	F	1.29
		G	43.15
		GC	114.82
		HDR	2.60
		LDR	133.02
		MDR	38.46
		PI	24.23

Costa Mesa Sanitary District

Pump Station Map
Irvine Pump Station (# 11)



LEGEND

- Lateral Line
- Gravity Main & Flow Direction
- Pump Station
- Pump Station Service Area
- Gravity Main Service Area

Land Use Codes

- High Density Residential (HDR)
- Low Density Residential (LDR)
- Medum Density Residential (MDR)
- Commercial Residential (CR)
- Fairgrounds (F)
- Golf Course (G)
- Industrial Park (IP)
- Public/Institutional (PI)
- Regional Commercial (RC)
- Urban Center Commercial (UCC)
- Light Industrial (LI)
- Neighborhood Commercial (NC)
- General Comemercial (GC)
- Cultural Arts Center (CAC)
- Commercial Center (CC)

Service Area	Pipe ID	Land Use Code	Land Use Area (Acres)
218	140147	CR	9.737127
		HDR	1.134274
		LDR	4.684663
		MDR	83.58161
219	140136	CR	27.1548
		HDR	2.502028
		MDR	3.467152
220	140135	LDR	41.12437
		MDR	111.426
		PI	4.984751

Costa Mesa Sanitary District

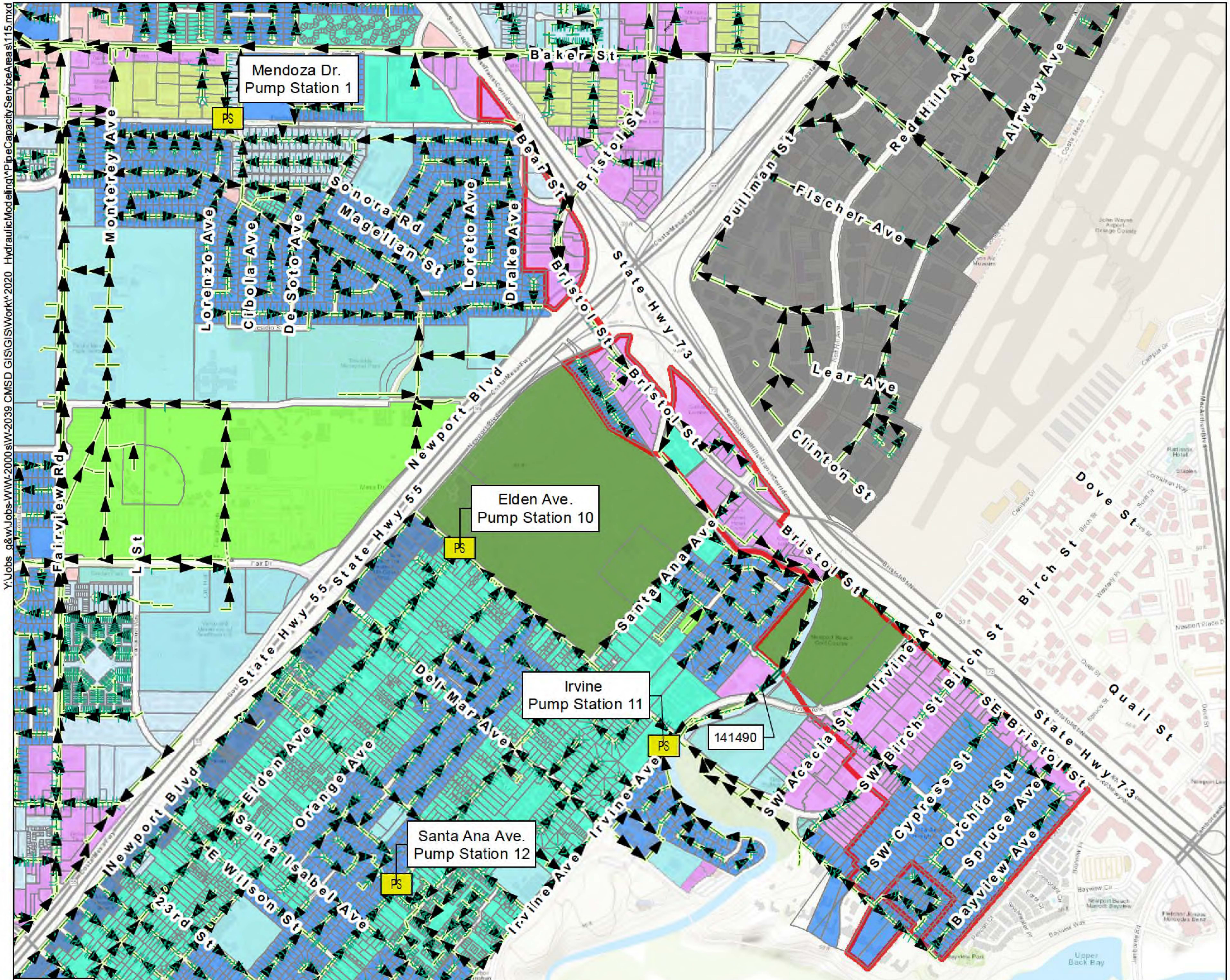
Pump Station Map

Elden Ave. Pump Station (# 10)

Appendix 10

Reserved Capacity Areas

Snug Harbor Sewer Evaluation - Reserved Capacity						
Area	Parcel No.	Square Feet	Acres	GPD/Acre	GPD	GPM
1	119-200-40	855704.9	19.64428145	200	3929	2.73
2	119-351-29	287059.03	6.589968549	200	1318	0.92
3	119-200-38	73251.99	1.681634298	200	336	0.23
4	119-200-41	672245.45	15.432632	200	3087	2.14
5	439-252-01	19174.6	0.440188246	200	88	0.06
6	439-252-01	8193.08	0.188087236	200	38	0.03
7	988-002-94	17362.27	0.398582874	200	80	0.06
8	988-002-94	17362.14	0.39857989	200	80	0.06
9	988-002-94	17862.62	0.41006933	200	82	0.06
10	988-002-94	34461.99	0.79113843	200	158	0.11
11	988-002-94	34860.82	0.800294307	200	160	0.11
12	988-002-94	17529.46	0.402421028	200	80	0.06
13	988-002-94	17335.3	0.397963728	200	80	0.06
14	988-002-94	34270.5	0.786742424	200	157	0.11
15	988-002-94	16330.22	0.374890266	200	75	0.05
16	988-002-94	15451.56	0.354719008	200	71	0.05
17	988-002-94	14300.86	0.328302571	200	66	0.05
18	988-002-94	12607.28	0.289423324	200	58	0.04
19	988-002-94	10505.63	0.241176079	200	48	0.03
20	988-002-94	7945.06	0.18239348	200	36	0.03
21	988-002-94	5943.53	0.136444674	200	27	0.02
Totals		2189758.29	50.2699332	-	10054	7.0
						Reserved Capacity



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LEGEND

- Lateral Line
- Gravity Main & Flow Direction
- PS Pump Station
- Service Area

Land Use Codes

- High Density Residential (HDR)
- Low Density Residential (LDR)
- Medum Density Residential (MDR)
- Commercial Residential (CR)
- Fairgrounds (F)
- Golf Course (G)
- Industrial Park (IP)
- Public/Institutional (PI)
- Regional Commercial (RC)
- Urban Center Commercial (UCC)
- Light Industrial (LI)
- Neighborhood Commercial (NC)
- General Comemercial (GC)
- Cultural Arts Center (CAC)
- Commercial Center (CC)

N S W E

Pipe ID	Land Use Code	Land Use Area (Acres)
141490	G	32.86
	GC	88.24
	HDR	2.59
	LDR	75.93
	MDR	4.02
	PI	0.59

Costa Mesa Sanitary District

Pipe Capacity Service Area Map
Service Area # 115

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LEGEND

- Lateral Line
- Gravity Main & Flow Direction
- PS Pump Station
- Service Area

Land Use Codes

- High Density Residential (HDR)
- Low Density Residential (LDR)
- Medum Density Residential (MDR)
- Commercial Residential (CR)
- Fairgrounds (F)
- Golf Course (G)
- Industrial Park (IP)
- Public/Institutional (PI)
- Regional Commercial (RC)
- Urban Center Commercial (UCC)
- Light Industrial (LI)
- Neighborhood Commercial (NC)
- General Comemercial (GC)
- Cultural Arts Center (CAC)
- Commercial Center (CC)

N W E S

Pipe ID	Land Use Code	Land Use Area (Acres)
150402	GC	1.34
	LDR	16.57
	MDR	6.36
	PI	4.03

Costa Mesa Sanitary District

Pipe Capacity Service Area Map
Service Area # 133

Layers
Tools
Identify
Selection
Tutorials
Light Mode
ver. 1

DETAILS

Parcels: 988-002-94 | 43

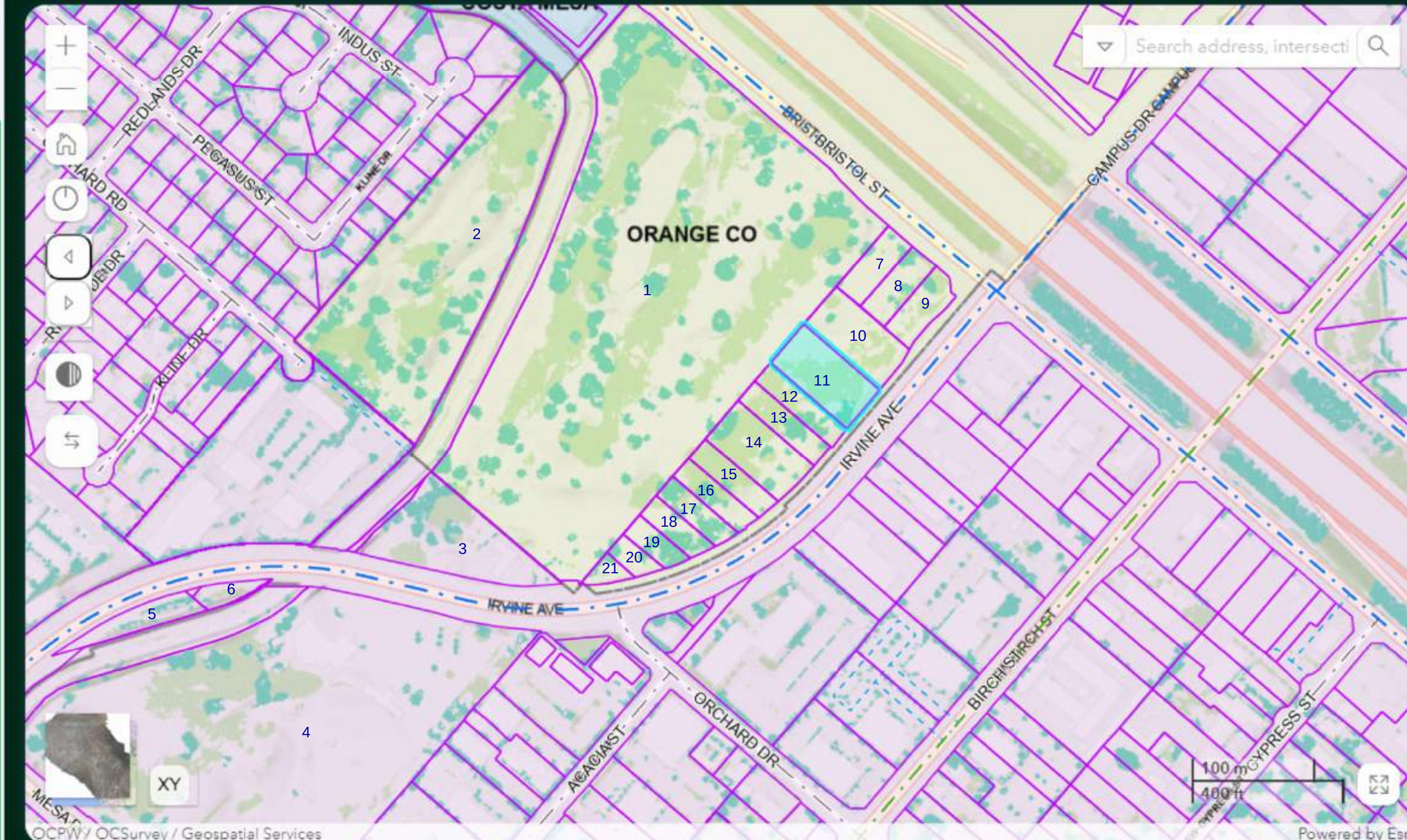
APN	988-002-94
Map No.	
Lot Type	Lot
Lot No.	43
Landuse	999
Legal Description	TR 706 LOT 40 POR OF LOT AND POR OF LOTS 41-49 INC
Site Address	NO SITUS
City/State	
Zipcode	
Legal Start Date	12/4/1963
Zone Class	S
Zoning Detail	S SANTA ANA HEIGHTS
Zoning Desc.	Specific Plan - Santa Ana Heights

Area: 34,860.82 sqft

Perimeter: 792.21 ft

No Available Overlay

Welcome Public User to the OCPW Public map!!



Welcome Public User to the OCI

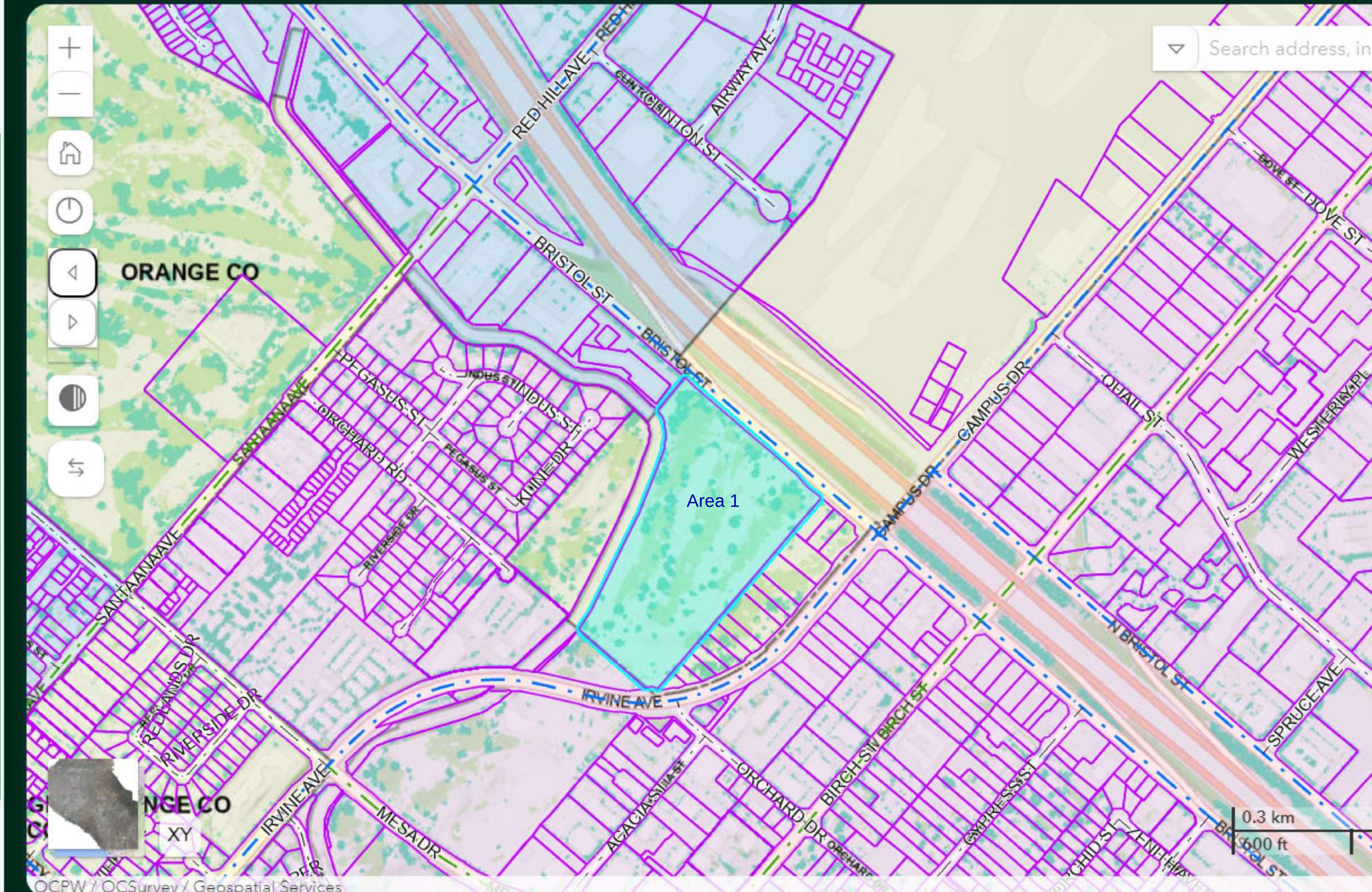
Parcels: 119-200-40 | 148 / 5

APN	119-200-40
Map No.	IRVINES SUBDIVISION
Lot Type	Lot
Lot No.	148 / 5
Landuse	601
Legal Description	IRVINE SUB LOT 148 BLK 5 POR OF LOT TR 361
Site Address	
City/State	
Zipcode	
Legal Start Date	4/13/1899
Zone Class	S
Zoning Detail	S SANTA ANA HEIGHTS
Zoning Desc.	Specific Plan - Santa Ana Heights

Area: 855,704.90 sqft

Perimeter: 4,055.29 ft

11920.geo



Welcome Public User to the OC

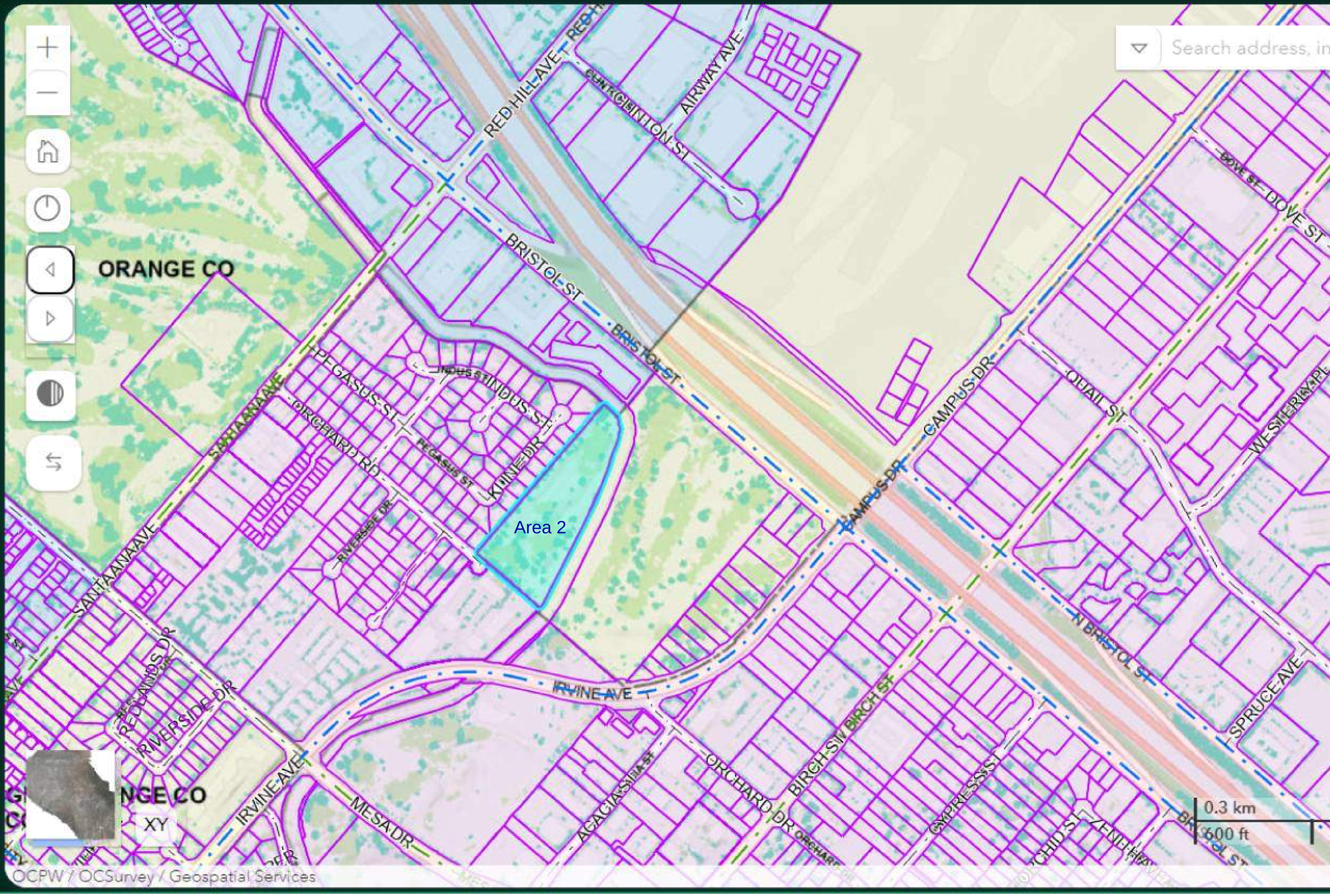
Parcels: 119-351-29 | 22

APN	119-351-29
Map No.	TR 456
Lot Type	Lot
Lot No.	22
Landuse	601
Legal Description	TR 456 LOT 22 ALL - EX POR TO CHANNEL-
Site Address	
City/State	
Zipcode	
Legal Start Date	6/7/1923
Zone Class	S
Zoning Detail	S SANTA ANA HEIGHTS
Zoning Desc.	Specific Plan - Santa Ana Heights

Area: 287,059.03 sqft

Perimeter: 2,530.37 ft

11935.geo



Welcome Public User to the OCP

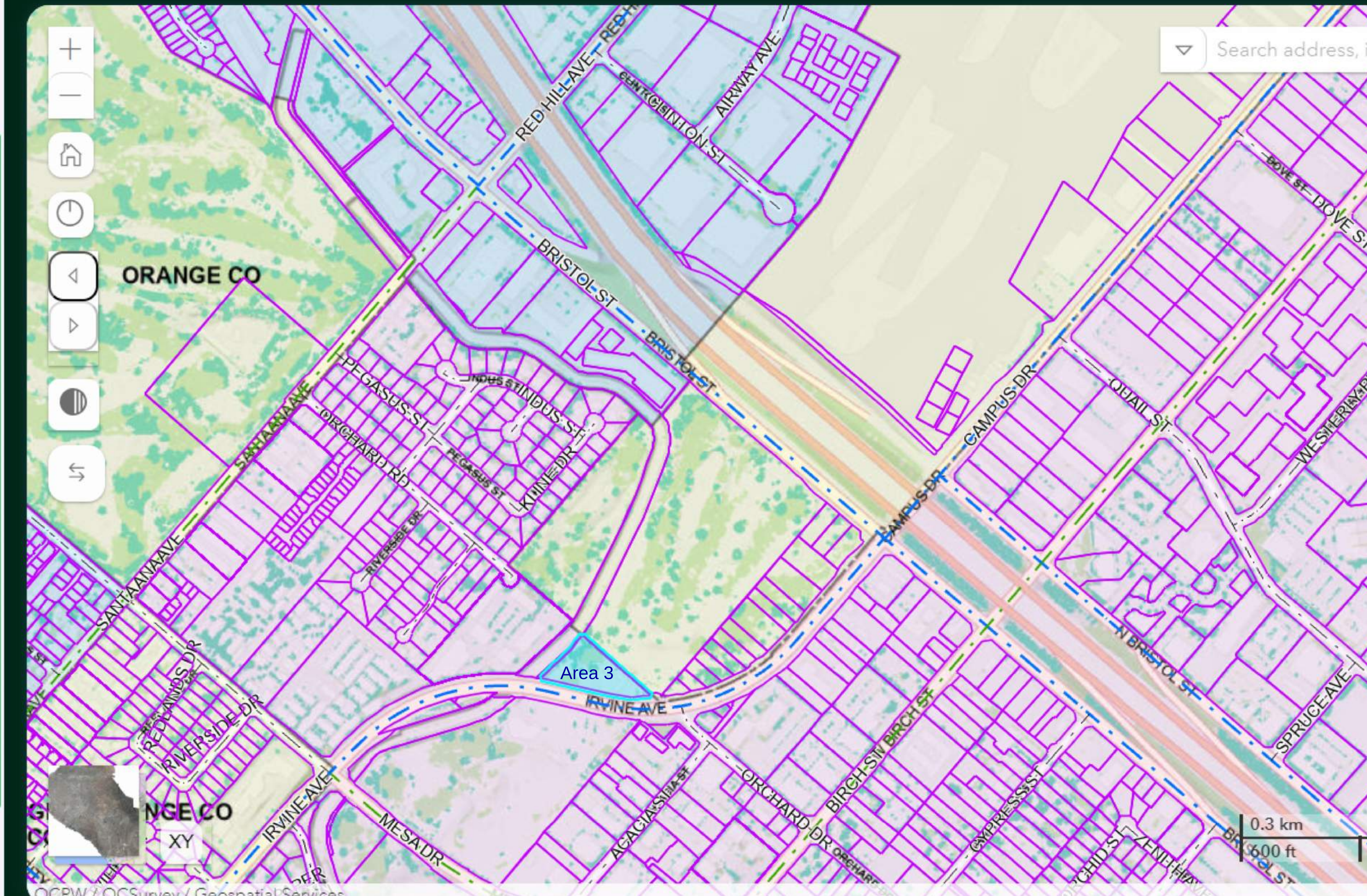
Parcels: 119-200-38 | 1

APN	119-200-38
Map No.	COC
Lot Type	Lot
Lot No.	1
Landuse	200
Legal Description	IRVINE SUB BLK 5 LOT 148 POR OF LOT ALSO POR. PAR. 1 OF CERTIFICATE OF COMPLIANCE 94-318607 TR 361
Site Address	3100 IRVINE
City/State	NEWPORT BEACH
Zipcode	92660
Legal Start Date	2/19/2009
Zone Class	
Zoning Detail	
Zoning Desc.	

Area: 73,251.99 sqft

Perimeter: 1,298.61 ft

11920.geo



Parcels: 119-200-41 | 1

APN	119-200-41
Map No.	COC
Lot Type	Lot
Lot No.	1
Landuse	200
Legal Description	IRVINE SUB BLK 5 LOT 148 POR OF LOT ALSO POR. PAR. 1 OF CERTIFICATE OF COMPLIANCE 94-318607 TR 361
Site Address	3100 IRVINE
City/State	NEWPORT BEACH
Zipcode	92660
Legal Start Date	5/9/1994
Zone Class	
Zoning Detail	
Zoning Desc.	

Area: 672,245.45 sqft

Perimeter: 3,507.28 ft

11920.geo

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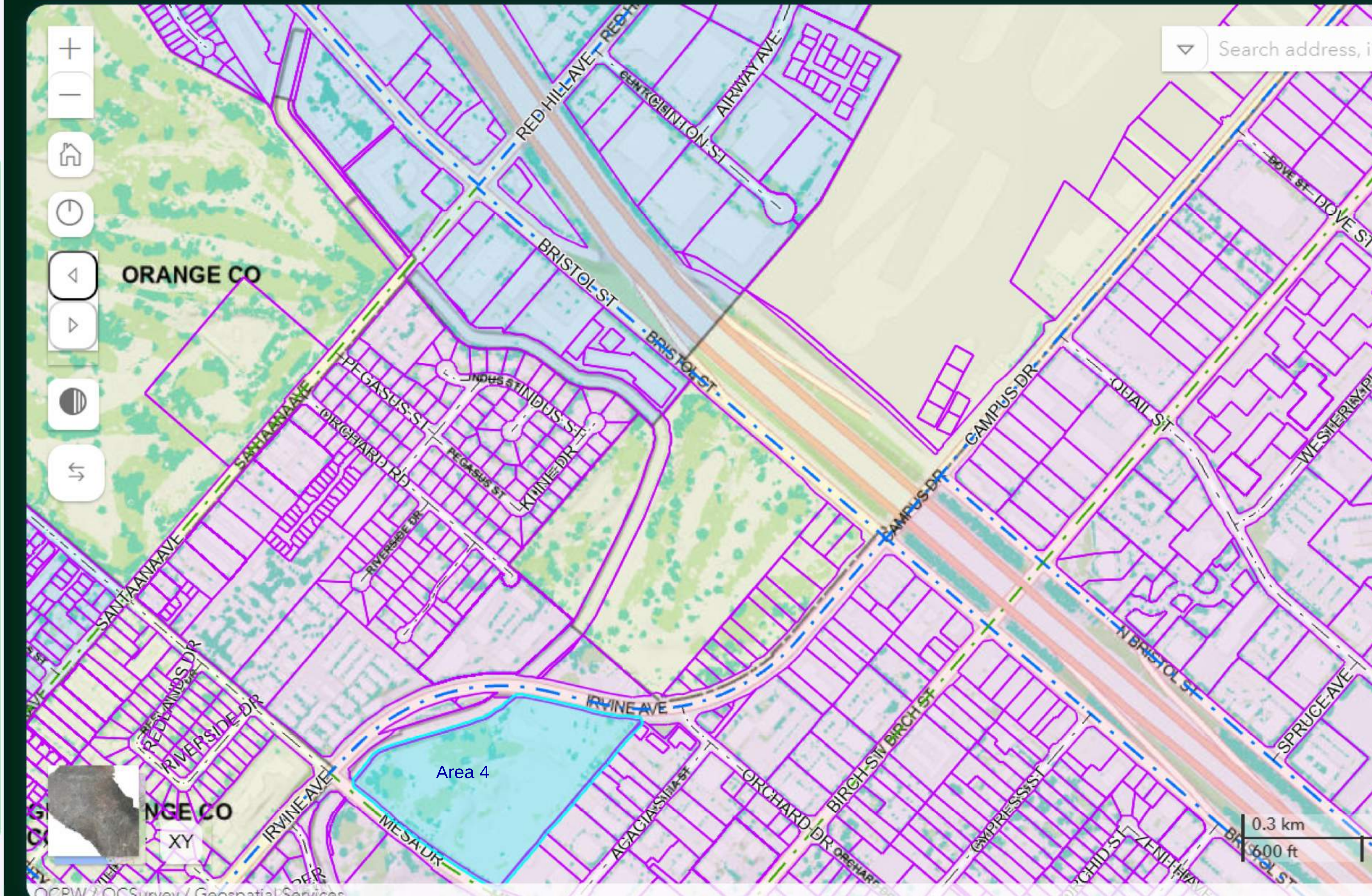


SELECTION

1 of 1

DETAILS

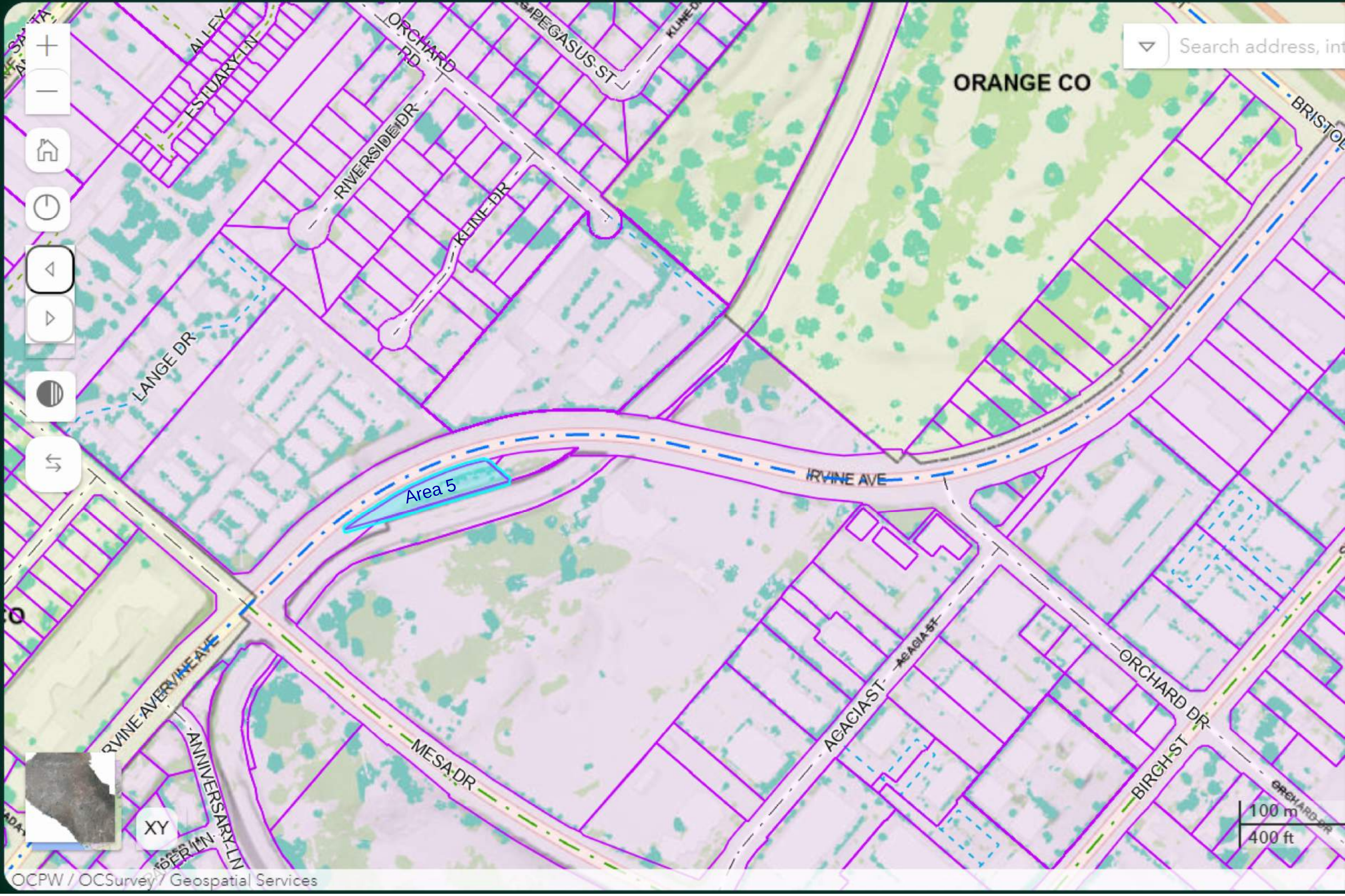
Parcels: 439-252-01 | 114.2

APN	439-252-01
Map No.	MD
Lot Type	Lot
Lot No.	114.2
Landuse	601
Legal Description	TR 456 LOT 20 POR OF LOT AND POR OF LOT 21
Site Address	
City/State	
Zipcode	
Legal Start Date	8/12/1964
Zone Class	
Zoning Detail	
Zoning Desc.	

Area: 19,174.60 sqft

Perimeter: 902.34 ft

Welcome Public User to the OCP



1 of 1

DETAILS

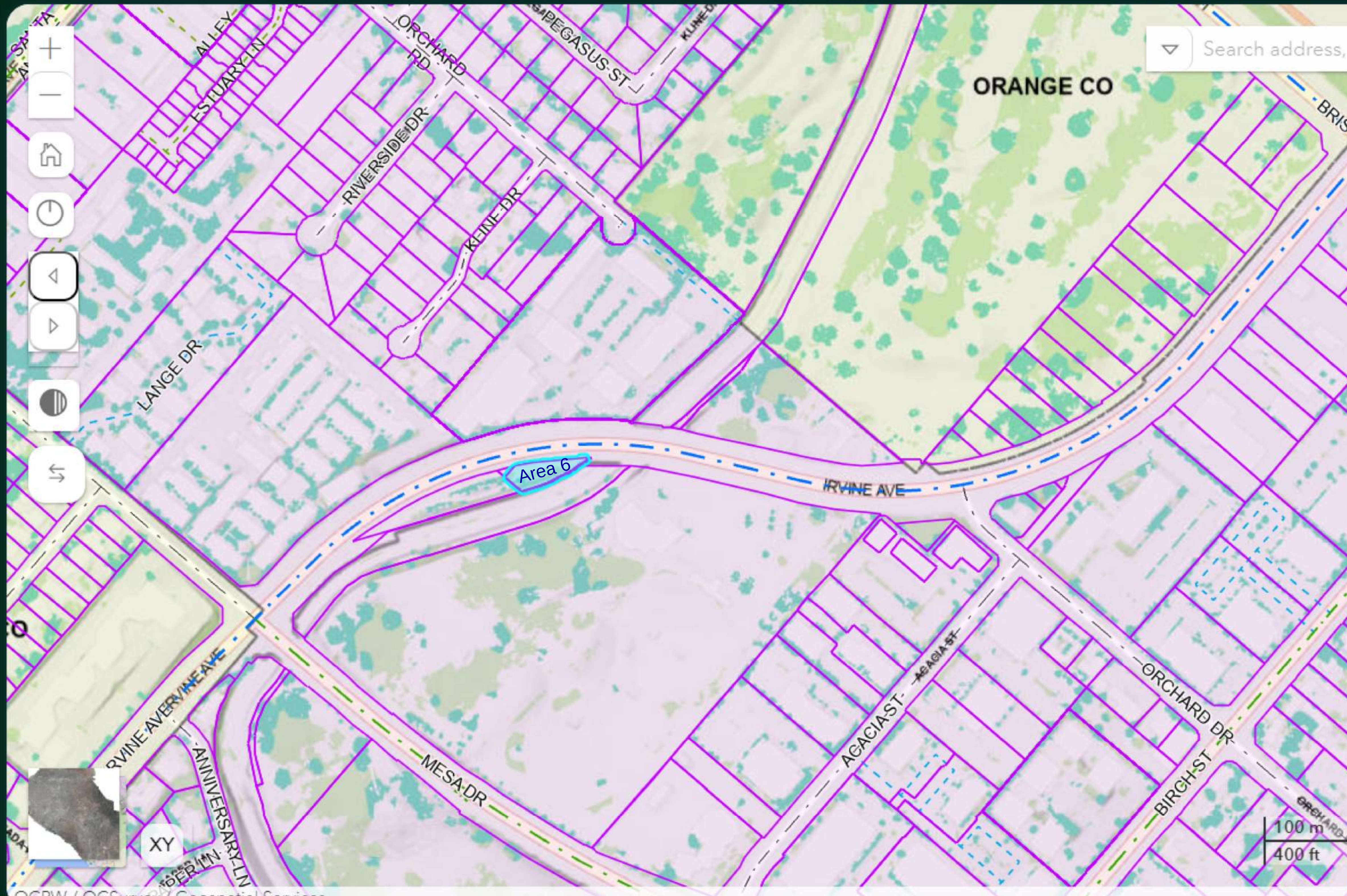
Parcels: 439-252-01 | 115.1

APN	439-252-01
Map No.	MD
Lot Type	Lot
Lot No.	115.1
Landuse	601
Legal Description	TR 456 LOT 20 POR OF LOT AND POR OF LOT 21
Site Address	
City/State	
Zipcode	
Legal Start Date	1/30/1964
Zone Class	
Zoning Detail	
Zoning Desc.	

Area: 8,193.08 sqft

Perimeter: 454.98 ft

Welcome Public User to the OC



Appendix 11

Existing Water Usage

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)	

Welcome, NEWPORT BEACH GOLF COURSE

DashBoard

Track Usage

Compare Water Use

Connect With Utility

Notification

User Guide

Compare Water Use

View HCF | View Gallon