DEXTER WILSON ENGINEERING, INC.

WATER • WASTEWATER • RECYCLED WATER

CONSULTING ENGINEERS

SEWER STUDY FOR THE
VIEWPOINT OLD TOWN PROJECT
IN THE CITY OF SAN DIEGO

May 18, 2023

2234 FARADAY AVENUE • CARLSBAD, CA • (760) 438-4422

SEWER STUDY FOR THE VIEWPOINT OLD TOWN PROJECT IN THE CITY OF SAN DIEGO

May 18, 2023

Prepared by:
Dexter Wilson Engineering, Inc.
2234 Faraday Avenue
Carlsbad, CA 92008
(760) 438-4422

Job No. 574-023

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DEXTER WILSON ENGINEERING, INC.

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May 18, 2023 574-023

Pasco Laret Suiter & Associates
1911 San Diego Avenue, Suite 100
San Diego, CA 92110

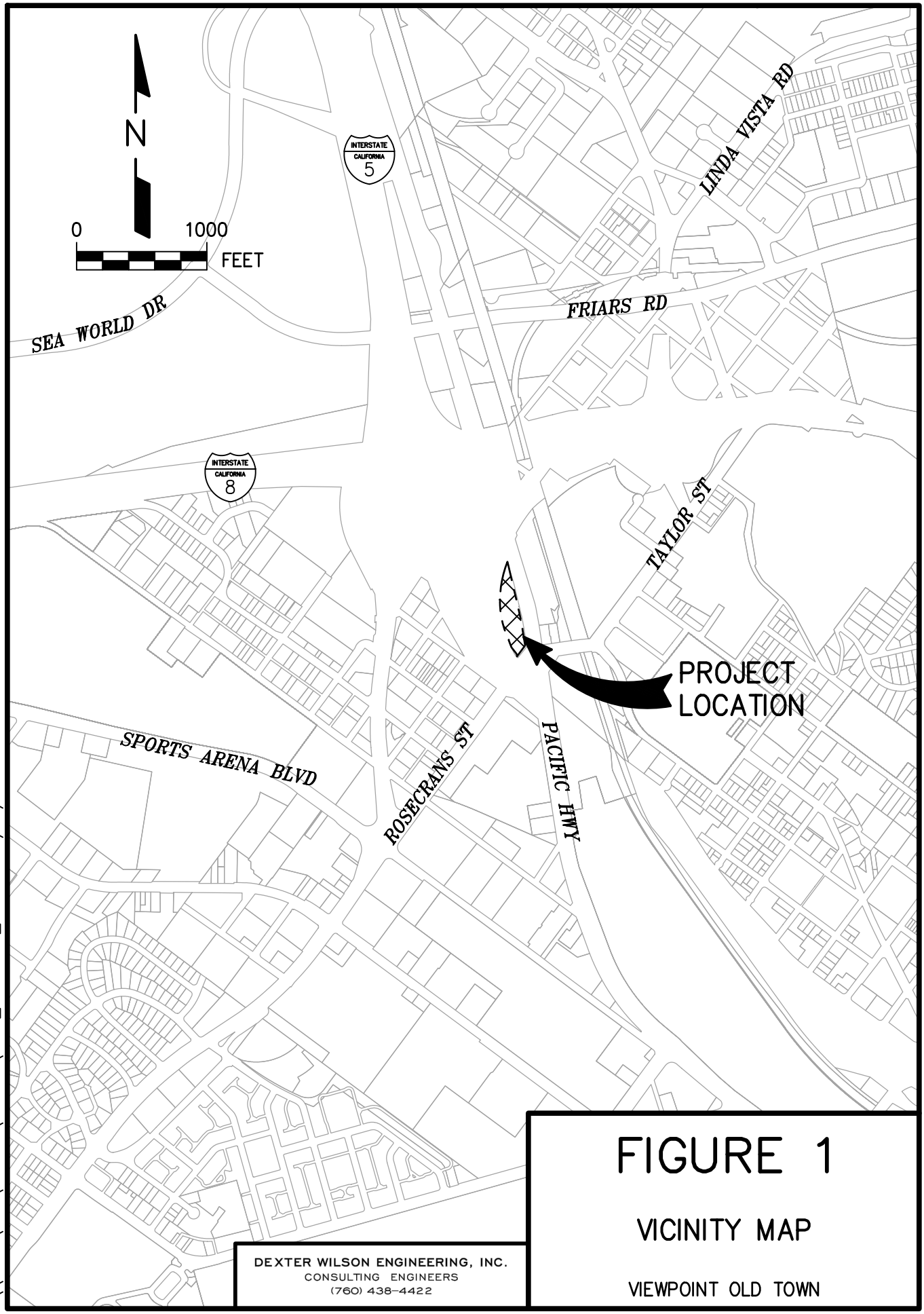
Attention: Chase Blood, P.E., Senior Project Manager

Subject: Sewer Study for the Viewpoint Old Town Project in the City of San Diego

Introduction

This report provides a sewer study for the Viewpoint Old Town project in the City of San Diego (City). The project site is located northwest of the Pacific Highway and Rosecrans Street intersection and southeast of the Interstate 5 and Interstate 8 interchange. The project site is currently zoned as mixed commercial residential. The Viewpoint Old Town project proposes 223 multi-family residential units on a land area of 1.67 acres.

Local topography is generally flat with the existing sewer system in the projects vicinity generally flowing from the northeast to the southwest. Figure 1 provides a Vicinity Map for the project and a conceptual site plan is attached as Appendix A.



\\ARTIC\DWG\574023\REPORT\VPOT_FIGURE-1_VM.DWG 8/30/2022 11:33:54 AM LAYOUT:8x11 USER:Matthew

FIGURE 1

VICINITY MAP

VIEWPOINT OLD TOWN

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
(760) 438-4422

Purpose of Study

The purpose of this study is to determine if the existing and proposed public gravity sewer system is able to provide adequate service for the project. This report will address the offsite (public) sewer system improvements needed for the development of the project, so that the offsite sewer system will be in conformance with the City of San Diego sewer system design standards.

Onsite sewer facilities are outside of the scope of work and not included in this report.

Study Area

The study area for this sewer report is the existing and proposed public gravity sewer lines located in Gaines Street, Hancock Street, Kurtz Street, and Rosecrans Street. The existing and proposed public sewer facilities in the vicinity of the Viewpoint Old Town project are presented in Figure 2.

A majority of the existing sewer lines analyzed are 8-inch until Kurtz Street. The sewer line in Kurtz Street is 10-inch and the sewer lines in Rosecrans Street are 12-inch and 15-inch. The project is proposing to upsize the existing 6-inch sewer in Jefferson Street to 8-inch and construct a new 8-inch sewer in Rosecrans Street and Jefferson Street to connect to the existing sewer system.

City of San Diego Sewer Design Criteria

Sewer system analyses criteria are based on the Sewer Design Guide, Revised May 2015, City of San Diego Public Utilities Department. This guideline is used for analysis and sizing of new gravity sewer lines and for analysis of existing gravity sewer lines. A summary of the design criteria from the Sewer Design Guide is presented in Table 1 below.

LEGEND

PROJECT BOUNDARY

EXISTING PUBLIC GRAVITY SEWER FACILITIES

PROPOSED PUBLIC GRAVITY SEWER FACILITIES

ANALYZED TRIBUTARY AREA BOUNDARY

EXISTING SEWER NOT TO BE USED BY PROPOSED PROJECT

EXISTING 6" SEWER PROPOSED TO BE UPSIZED TO 8" SEWER

INTERSTATE CALIFORNIA 5

SHERMAN ST

KURTZ ST

SPORTS ARENA BLVD

CAMINO DEL RIO W

JEFFERSON ST

GAINES ST

HANCOCK ST

ROSECRANS ST

PACIFIC HWY

TAYLOR ST

CONGRESS ST

EX.6" EX.8" EX.7" EX.10" EX.12" EX.15" 8"

N

0 250 FEET

\\ARTIC\DWG\574023\REPORT\VPOT_SWR_FIGURE-2_EX.DWG 3/6/2023 11:12:24 AM LAYOUT:11x17 USER:Kathleen

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
(760) 438-4422

FIGURE 2

EXISTING AND PROPOSED SEWER FACILITIES

VIEWPOINT OLD TOWN

TABLE 1
CITY OF SAN DIEGO PUBLIC UTILITIES DEPARTMENT
SEWER SYSTEM DESIGN CRITERIA

Criterion	Design Requirement	Design Guide Reference
Sewage Flow Generation	280 gpd/EDU	1.3.2.2
Fixture to EDU Conversion	20 Fixtures/EDU	1.4.1.1
Dry Weather Peaking Factor	Figure 1-1 based on population	1.3.2.2
Gravity Flow Hydraulic Formula	Manning's Equation	1.3.3.1
Manning's 'n'	0.013	1.3.3.1
Desirable Gravity Flow Velocity	3 fps to 5 fps	1.3.3.1
Minimum Gravity Flow Velocity	2 fps	1.3.3.1
Where 2 fps is not achievable	Set min. slope at 1%	1.3.3.1
Maximum Gravity Flow Velocity	10 fps	1.3.3.1
Maximum Depth of Flow		
For 15" Pipe and Smaller	d/D = 0.50	1.3.3.3
For 18" and Larger	d/D = 0.75	1.3.3.3
Minimum Acceptable Gravity Sewer Main Size		
For Residential Areas	8" diameter	1.3.3.4
Net Acreage	= 0.80 x Gross Acres	Table 1-1

Viewpoint Old Town Project Sewer Generation

The sewer generation for the project was developed in accordance with the City of San Diego Design Guidelines and Standards, as outlined in Appendix B. The City of San Diego allows for a conversion of plumbing fixtures to an equivalent sewer generation using fixture units. There are an estimated 3,699 fixtures proposed for the project (see Appendix C), which equates to approximately 185 EDUs based on a factor of 20 fixtures per EDU. At a generation rate of 280 gallons of wastewater per day per EDU, the estimated average sewer generation for the project is 51,800 gpd, or 36 gpm.

Flow monitoring was performed downstream of the proposed project to establish existing flows, but it also caught a wet weather event on 11/8/2022 (0.84 inches of rain per San Diego International Airport NOAA Weather Station). The average dry weather flow recorded on 11/8/2022 was 42.6 gpm corresponding to a peak wet weather flow factor of 2.5. Appendix F presents the flow monitoring results and analyses. This wet weather event in conjunction with the City of San Diego's sewer Design Guide, Figure 1-1, was used to establish a peak wet weather flow factor.

Based on a generation rate 80 gallons per capita per day, the estimated population of the project is 648 people. From the City of San Diego's Sewer Design Guide, Figure 1-1, the peak flow to average flow ratio for a population this size is approximately 2.88. Since this is higher than that recorded on 11/8/2022, this peaking factor will be used for the project. Thus, the estimated peak flow is 149,184 gpd (103.6 gpm).

Viewpoint Old Town Offsite Sewer System Analysis

Pertinent City as-built drawings were requested and are available in Appendix D. A computer spreadsheet analysis provided in Appendix E is based on the Manning's formula and the City as-builts. The spreadsheet analysis considers existing offsite flows which are tributary to the gravity sewer system as well as the Viewpoint Old Town project. Manhole numbering, pipeline diameter, and pipeline slope correspond with City As-Built drawings and correspond with Exhibit A at the back of this report.

Sewer flow monitoring was conducted between November 2, 2022 and November 16, 2022 to determine the actual capacity of the tributary area. An analysis of the results is available in Appendix F. The flow test monitoring reports that the average flow between Manhole 2 and Manhole 20 is 24,941 gpd. There is 11.94 acres of commercial space upstream of the sewer flow test monitoring location that makes up the measured 24,941 gpd. Based on this, the actual sewer generation rate of the existing commercial development is 2,089 gpd/acre. This generation rate was attributed to each commercial area in the tributary area to give an approximation of existing flows based on the sewer flow monitoring.

As previously discussed, a peak hourly wet weather flow factor of 2.5 was recorded in the sewer flow monitoring. The peaking factors used in the offsite analysis were 2.5 or as determined by Figure 1-1 of the City of San Diego's Sewer Design Guide, whichever was greater.

Under the existing condition, the maximum d/D is 0.312. Under the existing plus proposed condition, the maximum d/D is 0.467. Table 1 states that the maximum d/D for sewer 15-inch and smaller is 0.5, therefore there is adequate capacity in the existing sewers for the proposed project.

Conclusions and Recommendations

The following conclusions and recommendations are summarized based on the sewer system analysis prepared for the proposed Viewpoint Old Town project.

1. The proposed project consists of 223 multi-family dwelling units on a project site of 1.67 acres.

2. The development of the project is estimated to generate an average sewage flow of 51,800 gpd. Peak sewage flow will be 149,184 gpd.

3. Figure 2 presents the existing and proposed public sewer system in the project vicinity. The project will construct a new 8-inch sewer in Rosecrans Street and Jefferson Street and upsize the existing 6-inch sewer in Jefferson Street to 8-inches.

4. Appendix E provides the sewer capacity analysis and Exhibit A.

5. Appendix F provides an analysis of the sewer flow test monitoring results at Manhole 20. 11.94 acres of commercial space contribute 24,941 gpd of sewage upstream of Manhole 20, which equates to an actual sewage generation rate of 2,089 gpd/acre. This rate was applied to all existing commercial development in the tributary area. Maximum d/D under the existing condition is 0.312.

6. Under existing plus proposed condition, the maximum d/D is 0.467. Design criteria states that the maximum allowable d/D for pipes 15-inch and smaller is 0.5. Table 1 states the maximum d/D for sewer 15-inch and smaller is 0.5, therefore there is adequate capacity in the existing sewers for the proposed project.

7. New public sewer system improvements shall be designed in accordance with the current City of San Diego Design Guidelines and Standards.

8. The onsite private sewer system is outside of the scope of work and is not included in this report.

If you have any questions regarding the information or conclusions and recommendations presented in this report, please do not hesitate to contact the undersigned.

Dexter Wilson Engineering, Inc.

Kathleen Heitt, P.E.

KH:ru

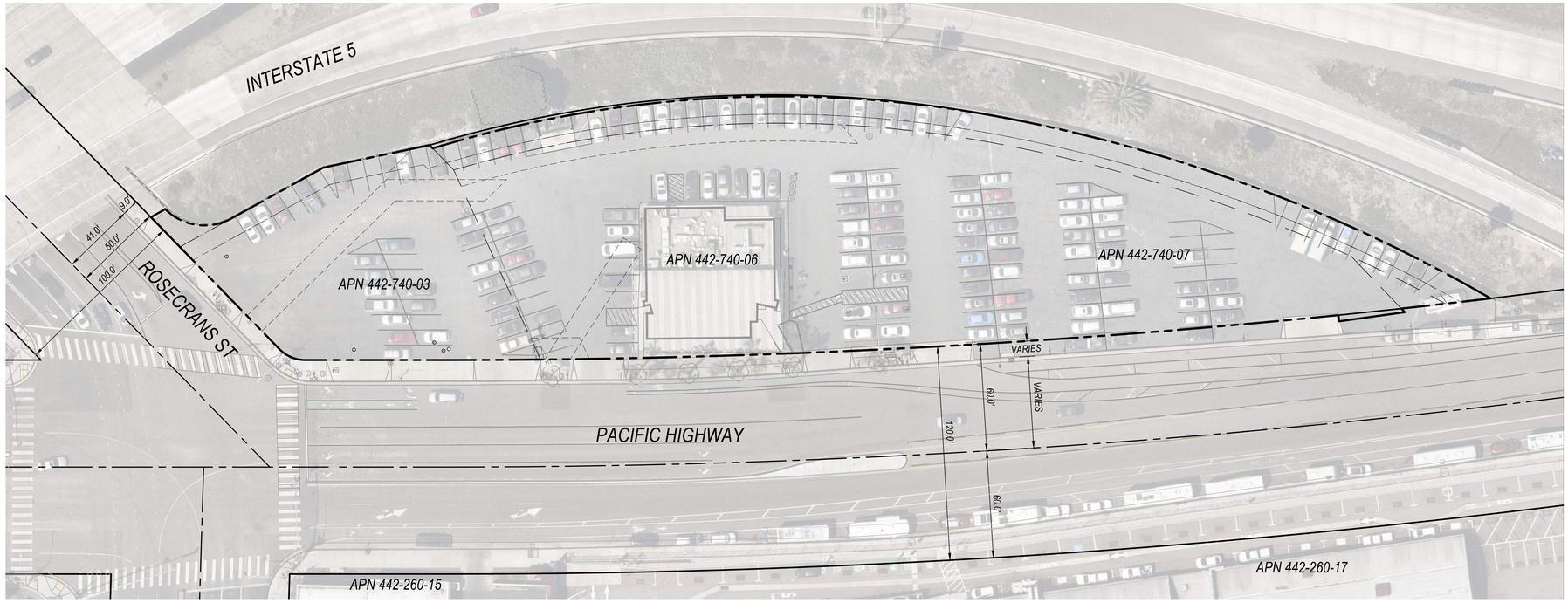
Attachments

APPENDIX A

PRELIMINARY SITE PLAN

VIEWPOINT OLD TOWN SITE DEVELOPMENT PERMIT

NDP # XXXXXX



0 30 60 90

SCALE: 1" = 30'

NOTE:
ANY WORK WITHIN CALTRANS RIGHT-OF-WAY WILL BE COORDINATED WITH CALTRANS AND APPROVED PER CALTRANS POLICY AND GUIDELINES.

NOTE:
THE PROPOSED PROJECT WILL COMPLY WITH ALL THE REQUIREMENTS OF THE CURRENT CITY OF SAN DIEGO STORM WATER STANDARDS MANUAL BEFORE A GRADING OR BUILDING PERMIT IS ISSUED. IT IS THE RESPONSIBILITY OF THE OWNER/DESIGNER/APPLICANT TO ENSURE THAT THE CURRENT STORM WATER PERMANENT BMP DESIGN STANDARDS ARE INCORPORATED INTO THE PROJECT.

NOTE:
NO TREES NOR SHRUBS MORE THAN 3-FT IN HEIGHT AT MATURITY ARE ALLOWED WITHIN 10-FT OF ANY PUBLIC SEWER OR SEWER LATERAL. NOR WITHIN 5-FT OF PUBLIC WATER MAINS, WATER SERVICES, OR FIRE HYDRANTS.

NOTE:
ALL WATER LINES SERVING THIS DEVELOPMENT MUST PASS THROUGH A PERMITTED, PRIVATE, ABOVE GROUND BACKFLOW PREVENTION DEVICE (BFPD) TO BE SHOWN ON BUILDING OR GRADING PLAN.

NOTE:
AN EMRA WILL BE PROCESSED DURING THE PROCESSING OF CONSTRUCTION DOCUMENTS FOR ALL PRIVATE ENCROACHMENTS INTO THE RIGHT OF WAY, INCLUDING PRIVATE STORM DRAIN CONNECTIONS, DRIVEWAYS, SIDEWALK UNDERDRAINS, ENHANCED PAVING, LANDSCAPING, IRRIGATION, & PRIVATE SEWER LATERALS.

NOTE:
AN ENCROACHMENT MAINTENANCE AGREEMENT WILL BE PROCESSED DURING THE PROCESSING OF CONSTRUCTION DOCUMENTS FOR ALL PRIVATE STRUCTURAL ENCROACHMENTS INTO THE RIGHT OF WAY, INCLUDING BUILDING OVERHANGS, ROOFS, AND BALCONIES.

NOTE:
THE OWNER/PERMITTEE SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO CITY OF SAN DIEGO WATER AND SEWER FACILITIES IN THE VICINITY OF THE PROJECT SITE DUE TO CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT, IN ACCORDANCE WITH SDMC 142.0607. IN THE EVENT THAT ANY SUCH FACILITY LOSES INTEGRITY, THE OWNER/PERMITTEE SHALL REPAIR OR RECONSTRUCT ANY DAMAGED FACILITIES IN A MANNER SATISFACTORY TO THE PUBLIC UTILITIES DIRECTOR AND CITY ENGINEER.

NOTE:
SUBJECT PROPERTY CONSISTS OF FOUR SEPARATE PARCELS OWNED BY A SINGLE ENTITY. A "LOT TIE AGREEMENT" ACROSS ALL PARCELS WITHIN PROPERTY WILL BE PROCESSED PRIOR TO START OF CONSTRUCTION.

TOPOGRAPHY:
TOPOGRAPHY OBTAINED BY FIELD SURVEY.
PREPARED BY PASCO LARET SUITER & ASSOCIATES
1911 SAN DIEGO AVENUE SUITE 100 SAN DIEGO, CA 92110
PHONE: 858.259.8212

BENCHMARK:
ELEVATIONS SHOWN HEREON ARE BASED ON:
FOUND BRASS PLUG PER CITY OF SAN DIEGO VERTICAL BENCH BOOK LOCATED AT THE NE RETURN OF TOP OF CURB PACIFIC HIGHWAY AND ROSENCRANS ST.
PUBLISHED ELEVATION ON SHEET 498.
ELEVATION: 10.574'
DATUM: NGVD 29

BASIS OF BEARINGS:
THE CALIFORNIA COORDINATE SYSTEM, NAD 83 (CCS83) EPOCH 1991.35, ZONE 6, AS DETERMINED LOCALLY BY A LINE BETWEEN FIRST ORDER CONTROL STATIONS 240 AND 157 BEING A GRID BEARING OF N 02 06'24" E AS DERIVED FROM GEODETIC VALUES SHOWN ON RECORD OF SURVEY 14492, COUNTY OF SAN DIEGO SURVEY CONTROL, FILED ON MARCH 31, 1994 AS FILE NUMBER 1994-0214720 IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF SAN DIEGO, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:

LOTS 1 AND 2 OF JENNINGS TRACT, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 5632, FILED IN THE OFFICE OF THE COUNTY RECORDER OCTOBER 06, 1965.

PARCEL 2:

THOSE PORTIONS OF LOTS 16 AND 17 OF SONNICHSEN'S SUBDIVISION, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 1574, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHEASTERLY LINE OF SAID LOT 16 DISTANT THEREON SOUTH 39°11'52" WEST (RECORD SOUTH 36°06' WEST) (DEED SOUTH 36°38'54" WEST) 74.24 FEET FROM THE MOST EASTERLY CORNER OF LOT 19 OF SAID MAP NO. 1574; THENCE NORTH 39°11'52" EAST ALONG SAID SOUTHEASTERLY LINE 23.47 FEET; THENCE NORTH 35°27'02" WEST 32.83 FEET (DEED NORTH 39° WEST) TO A POINT ON THE ARC OF A 31 FOOT RADIUS CURVE CONCAVE WESTERLY, A RADIAL LINE OF SAID CURVE BEARS NORTH 54°32'58" EAST (DEED NORTH 52° EAST) TO SAID POINT; THENCE SOUTHERLY AND SOUTHWESTERLY ALONG SAID CURVE 40.39 FEET THROUGH AN ANGLE OF 74°38'54"; THENCE SOUTH 36°21'17" EAST 9.15 FEET (DEED SOUTH 39°00'15" EAST) TO THE POINT OF BEGINNING.

PARCEL 3:

THOSE PARTS OF LOTS 1 THROUGH 5, BLOCK 376, OF CORRECTED PLAT OF SUBDIVISION OF BLOCKS 368, 369, 374, 375 AND 376 OF OLD SAN DIEGO ACCORDING TO MAP THEREOF NO. 420 FILED NOVEMBER 25, 1887 IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY AND "PLAN OF OLD SAN DIEGO" MADE BY JAMES PASCOE IN 1870, A COPY OF WHICH WAS FILED AS MISCELLANEOUS MAP NO. 40 IN THE OFFICE OF SAID COUNTY RECORDER; THOSE PARTS OF LOTS 6 THROUGH 8, AND OF LOT 19, BLOCK 366, AND OF LOTS 12 THROUGH 17, BLOCK 367 AS SHOWN ON E.O. ROGERS SUBDIVISION OF BLOCKS 370, 373, 366 AND 367 OF OLD SAN DIEGO FILED ON OCTOBER 11, 1887 IN THE OFFICE OF SAID COUNTY RECORDER AS MAP NO. 429 AND AS SHOWN ON SAID "PLAN OF OLD SAN DIEGO" LYING WITHIN A STRIP OF LAND 15 FEET WIDE, WESTERLY AND NORTHWESTERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE SOUTHERLY TERMINUS OF COURSE (4) AS DESCRIBED IN DEED TO THE STATE OF CALIFORNIA RECORDED MAY 17, 1965 AS INSTRUMENT NO. 87802 OF OFFICIAL RECORDS IN THE OFFICE OF SAID COUNTY RECORDER; THENCE ALONG THE FOLLOWING NUMBERED COURSES: (1) NORTHERLY FROM A RADIAL BEARING SOUTH 64°32'48" WEST, ALONG A NON-TANGENT CURVE CONCAVE TO THE EAST, HAVING A RADIUS OF 650 FEET THROUGH CENTRAL ANGLE OF 26°30'13", A DISTANCE OF 300.68 FEET TO A POINT OF COMPOUND CURVATURE; (2) NORTHERLY FROM A RADIAL BEARING NORTH 88°56'59" WEST, ALONG A CURVE CONCAVE TO THE EAST, HAVING A RADIUS OF 850 FEET THROUGH A CENTRAL ANGLE OF 18°28'54", A DISTANCE OF 274.18 FEET TO A POINT ON THE WESTERLY LINE OF THAT PARCEL OF LAND CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED JUNE 20, 1942 IN BOOK 1350, PAGE 442 OF OFFICIAL RECORDS. TOGETHER WITH THE UNDERLYING FEE INTEREST, IF ANY, APPURTENANT TO THE ABOVE DESCRIBED PROPERTY IN AND TO THE ADJOINING PUBLIC WAYS.

THE SOUTHERLY TERMINUS OF THE WESTERLY LINE OF THE HEREINABOVE DESCRIBED 15 FOOT STRIP OF LAND SHALL BE EXTENDED TO MEET A LINE WHICH BEARS SOUTH 36°38'58" WEST, FROM THE SAID POINT OF BEGINNING; THENCE NORTHERLY TERMINUS OF SAID WESTERLY LINE SHALL BE EXTENDED TO MEET A NON-TANGENT CURVE, WHICH BEARS NORTHERLY FROM A RADIAL BEARING NORTH 70°28'05" WEST, CONCAVE TO THE EAST, HAVING A RADIUS OF 4.94 FEET THROUGH A CENTRAL ANGLE OF 1°27'12", A DISTANCE OF 125.31 FEET, THE POINT OF BEGINNING OF LAST SAID CURVE BEING THE NORTHERLY TERMINUS POINT OF COURSE (2) HEREINABOVE DESCRIBED.

THE BEARINGS AND DISTANCES USED IN THE ABOVE DESCRIPTION ARE ON THE CALIFORNIA COORDINATE SYSTEM ZONE 6 GRID DISTANCES EQUAL GROUND LEVEL DISTANCES.

PARCEL 4:

THAT PART OF THAT PORTION OF BLOCK 366 OF E. O. ROGER'S SUBDIVISION OF BLOCK 370, 373, 366 AND 367 OF OLD SAN DIEGO, ACCORDING TO MAP NO. 429 FILED IN THE OFFICE OF THE RECORDER OF SAN DIEGO COUNTY, OCTOBER 11, 1887 AS SAID PORTION WAS CONVEYED TO THE STATE OF CALIFORNIA BY DEED RECORDED SEPTEMBER 02, 1964 AS INSTRUMENT NO. 160494 OF OFFICIAL RECORDS OF SAID COUNTY, SAID PART HEREBY CONVEYED LYING SOUTHEASTERLY OF AND CONTIGUOUS TO THE SOUTHERLY SIDELINE OF THAT FIFTEEN FOOT WIDE STRIP OF LAND CONVEYED TO SAN DIEGO TRUST AND SAVINGS BANK, AS TRUSTEE, RECORDED AUGUST 01, 1969 AS INSTRUMENT NO. 140370 OF OFFICIAL RECORDS.

EXCEPT THEREFROM THAT PORTION LYING WITHIN THE BOUNDARIES OF PARCEL 1 DESCRIBED ABOVE.

STATE DENSITY BONUS LAW CONCESSIONS / INCENTIVES

THE PROJECT REQUESTS WAIVERS OF DEVELOPMENT STANDARDS AND IS ALLOTTED INCENTIVES BY PROVIDING AFFORDABLE HOUSING PURSUANT TO STATE DENSITY BONUS LAW (SDBL), CA GOVERNMENT CODE 65915.

REQUESTED INCENTIVES (8 ALLOWED AS AFFORDABLE HOUSING BONUS PER SDMC 143.070(D) TABLE 143-07A FOR >15% VERY-LOW INCOME AFFORDABLE UNITS (FOOTNOTE 2) AND TABLE 143-07C FOR 10% MODERATE INCOME AFFORDABLE UNITS (33 PROVIDED). REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL CALCULATIONS.

*REQUESTED INCENTIVES - **REFER TO ARCHITECTURAL PLANS** FOR ADDITIONAL INFORMATION.*

1. *USE INCENTIVE TO DEVIATE FROM MAX STRUCTURE HEIGHT (SDMC 1516.0119 TABLE 1516-01E)*
2. *USE INCENTIVE TO DEVIATE FROM MAX. NUMBER OF STORIES (SDMC 1516.0119 TABLE 1516-01E)*
3. *USE INCENTIVE TO DEVIATE FROM MAX. LOT COVERAGE (%) (SDMC 1516.0119 TABLE 1516-01E)*
4. *USE INCENTIVE TO DEVIATE FROM 20% MINIMUM TRANSPARENCY OF THE STREET WALL AREA (SDMC 1516.1027(b)(1))*
5. *USE INCENTIVE TO DEVIATE FROM THE REQUIRED 20% COMMON OPEN SPACE (TABLE 1516-01G, SDMC 1516.0127(c)(3))*
6. *USE INCENTIVE TO DEVIATE FROM RESTRICTION ON ENCROACHMENTS ABOVE THE PUBLIC RIGHT-OF-WAY WITH PRIVATE RESIDENT BALCONIES (SDMC 1516.0128(b)(4)).*
7. *RESERVED*
8. *RESERVED*

VICINITY MAP
NOT TO SCALE

SHEET INDEX

OWNER:
VIEWPOINT DEVELOPMENT LLC
2011 PALOMAR AIRPORT RD SUITE 101-182
CARLSBAD, CA 92011

ARCHITECT:
CARRIER JOHNSON
185 W F ST #500
SAN DIEGO, CA 92101
PHONE: 619-239-2353

CIVIL ENGINEER:
PASCO LARET SUITER & ASSOCIATES
1911 SAN DIEGO, SUITE 100
SAN DIEGO CA 92110
PHONE: 858-259-8212

SOILS ENGINEER:
COMPANY
ADDRESS
PHONE

SCOPE OF WORK:
SITE DEVELOPMENT FOR THE CONSTRUCTION OF SIX-STORY MIXED USE BUILDING AND PRESERVATION OF EXISTING STRUCTURE.

SITE ADDRESS:
4620 PACIFIC HIGHWAY
SAN DIEGO CA 92110

APN:
442-740-03-00; 442-740-06-00; 442-740-07-00

ABBREVIATED LEGAL DESCRIPTION:
PARCEL 1:
LOT 1 & 2 OF JENNINGS TRACT, MAP 5632
PARCEL 2:
PORTION OF LOT 16 & 17, SUNNICHSEN'S SUBDIVISION, MAP 1574
PARCEL 3:
PARTS OF LOTS 1-5, BLOCK 376, MAP 420
PARCEL 4:
PORTION OF BLOCK 366, ROGER'S SUBDIVISION, MAP 429

LOT SIZE:
EXISTING:
GROSS: 76,154 SF = 1.75 AC
LESS 1,241 SF = 0.03 AC FOR ROW ESMT
NET: 74,913 SF = 1.72 AC
PROPOSED:
GROSS/NET: 72,720 SF = 1.67 AC

PROJECT INFORMATION:
EXISTING ZONE: OTMCR-1-3, OTCC-1-1
PROPOSED ZONE: OTMCR-1-3
COMMUNITY PLAN: OLD TOWN SAN DIEGO

EXISTING USE: COMMERCIAL
PROPOSED USE: MIXED USE

OVERLAY ZONES:
AIRPORT APPROACH OVERLAY ZONE (AAOZ-400-450)
TRANSIT AREA OVERLAY ZONE (TAOZ)

LAMBERT COORDINATES: 214-1707
NAD83 COORDINATES: 1856-6269

EXISTING LOTS: 4
PROPOSED LOTS: 4 (WITH PROPOSED LOT TIE AGREEMENT)

SETBACKS	*REQUIRED*	*PROPOSED*
FRONT:	*0' (MIN) 10' (MAX)*	*0'*
REAR:	*5'*	*5'*
SIDEYARD:	*5'*	*5'*
STREET SIDEYARD:	*10'*	*10'*

SITE WORK INFORMATION:
TOTAL DISTURBED AREA: 76,154 SF = 1.75 AC
EXISTING IMPERVIOUS AREA: 76,154 SF = 1.75 AC
PROPOSED IMPERVERIOUS AREA (REPLACED): 76,154 SF = 1.75 AC
PROPOSED IMPERVIOUS AREA (NEW): 0 SF = 0 AC
PROPOSED IMPERVIOUS AREA (TOTAL): 76,154 SF = 1.75 AC

EARTHWORK QUANTITIES:
CUT: 7,800 CY
FILL: 200 CY
EXPORT: 7,600 CY
MAX CUT DEPTH UNDER BUILDING FOOTPRINT: 11.0 FT
MAX FILL DEPTH UNDER BUILDING FOOTPRINT: 1.5 FT
MAX CUT DEPTH OUTSIDE BUILDING FOOTPRINT: 2.2 FT
MAX FILL DEPTH OUTSIDE BUILDING FOOTPRINT: 1.5 FT

EXPORT QUANTITIES NOTE:
THE PROJECT PROPOSED TO EXPORT 7,600 CUBIC YARD OF MATERIAL FROM THIS SITE. ALL EXPORT MATERIAL SHALL BE DISCHARGED TO A LEGAL DISPOSAL SITE. THE APPROVAL OF THIS PROJECT DOES NOT ALLOW PROCESSING AND SALE OF THE MATERIAL. ALL SUCH ACTIVITIES REQUIRE A SEPARATE CONDITIONAL USE PERMIT.

UTILITIES:
NOTE: UNDERGROUND UTILITIES SHOWN HEREON ARE PER AVAILABLE RECORD DRAWINGS & INFORMATION.
WATER: CITY OF SAN DIEGO
SEWER: CITY OF SAN DIEGO
GAS & ELECTRIC: SDG&E
FIRE & POLICE PROTECTION: CITY OF SAN DIEGO
CABLE TV: COX, SPECTRUM.
FIBER OPTIC: AT&T, COX, SPECTRUM
SCHOOLS: SAN DIEGO UNIFED SCHOOL DISTRICT

GENERAL NOTES:
1. DRAINAGE:
A. DRAINAGE FACILITIES TO BE CONSTRUCTED PER CITY OF SAN DIEGO STANDARDS
B. DRAINAGE EASEMENTS SHALL BE PROVIDED AS REQUIRED.
C. ALL DRAINAGE FROM LOT TO BE DIRECTED TO STREET.

2. PRIOR TO BUILDING OCCUPANCY, THE OWNER/PERMITTEE SHALL ENTER INTO A MAINTENANCE AGREEMENT FOR THE ONGOING PERMANENT BMP MAINTENANCE.

3. PRIOR TO ISSUANCE OF ANY CONSTRUCTION PERMIT, THE OWNER/PERMITTEE SHALL INCORPORATE ANY CONSTRUCTION BEST MANAGEMENT PRACTICES NECESSARY TO COMPLY WITH GRADING REGULATIONS OF THE SAN DIEGO MUNICIPAL CODE, APPROVED CONSTRUCTION PLANS, AND SPECIFICATIONS.

LEGEND

PROPERTY LINE / PROJECT BOUNDARY
RIGHT OF WAY LINE
STREET CENTERLINE
LOT LINE
EASEMENT

carrierjohnson + CULTURE
architecture + environments + brand strategy + graphics

VIEWPOINT OLD TOWN

4620 PACIFIC HIGHWAY
SAN DIEGO, CA 92110

ISSUES:

NO	DESCRIPTION	DATE

CHRISTOPHER G. LANGLOIS — No. 19291 — PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NO: PLSA 3598
FILE NAME: WRITE CENTRAL FILE PATH HERE (I.E. P:\0000.000\BIM\Central File\00000.00-central.rvt)
DRAWN BY: CJB
CHECKED BY: TGL
PLOT DATE: May 18, 2023
TITLE:

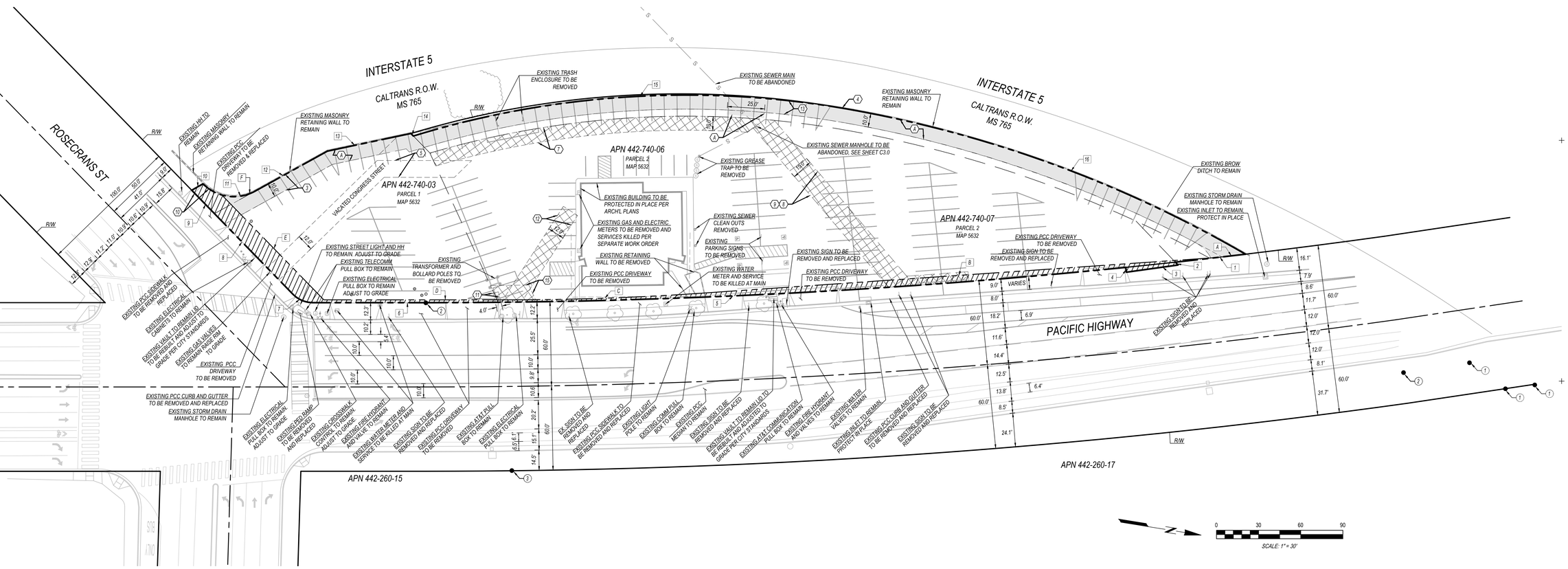
TITLE SHEET (CIVIL)

DRAWING NO: C1.0

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

VIEWPOINT OLD TOWN SITE DEVELOPMENT PERMIT

NDP # XXXXXX



0 30 60 90

SCALE: 1" = 30'

EASEMENTS OF RECORD

ITEMS A THROUGH D, 1, AND 2 ARE NON MAPPING ITEMS AND THEREFOR ARE NOT SHOWN HEREON.

(3) STATE OF CALIFORNIA HOLDER OF AN EASEMENT FOR CONSTRUCTING AND MAINTAINING AND RETAINING WALL FOOTING TOGETHER WITH THE RIGHT OF INGRESS THERETO AND EGRESS THEREFROM PURPOSES RECORDED JUNE 03, 1964 PER INSTRUMENT NO 99163 OF OFFICIAL RECORDS.
EASEMENT TO REMAIN.

(4) RELINQUISHMENT OF ACCESS RIGHTS RECORDED JUNE 3, 1964 PER INSTRUMENT NO 99163, RECORDED JANUARY 5,1966 PER INSTRUMENT NO 2236, RECORDED AUGUST 1, 1969 PER INSTRUMENT NO 140370, RECORDED OCTOBER 10, 1973 PER INSTRUMENT NO 73-285467 ALL OF OFFICIAL RECORDS.
RELINQUISHMENT TO REMAIN.

(5) SAN DIEGO GAS AND ELECTRIC COMPANY HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS PURPOSES RECORDED AUGUST 20, 1965 PER INSTRUMENT NO 152282 OF OFFICIAL RECORDS.
EASEMENT TO BE QUITCLAIMED.

ITEM 6 IS A NON MAPPING ITEM AND THEREFOR IS NOT SHOWN HEREON.

(7) 10 FOOT PRIVATE EASEMENT TO LOT 1 AS OFFERED FOR DEDICATION AND SHOWN ON SAID MAP NO 5632.
VOID UNDER COMMON OWNERSHIP

(8) CITY OF SAN DIEGO HOLDER OF INGRESS AND EGRESS FOR THE CONSTRUCTION AND MAINTENANCE OF RESTRICTED GENERAL UTILITY EASEMENT AS STATED IN THE OWNERS CERTIFICATE AND SHOWN ON SAID MAP NO 5632.
EASEMENT TO BE VACATED

(9) CITY OF SAN DIEGO HOLDER OF RESTRICTED GENERAL UTILITY EASEMENT AS OFFERED FOR DEDICATION AND SHOWN ON SAID MAP NO 5632.
EASEMENT TO BE VACATED.

(10) STATE OF CALIFORNIA HOLDER OF AN EASEMENT FOR CONSTRUCTING AND MAINTAINING A RETAINING WALL FOOTING TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS PURPOSES RECORDED JANUARY 5, 1966 PER INSTRUMENT NO 2236 OF OFFICIAL RECORDS.
EASEMENT TO REMAIN.

(11) SAN DIEGO GAS AND ELECTRIC COMPANY HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS PURPOSES RECORDED JANUARY 26, 1966 PER INSTRUMENT NO 14997 OF OFFICIAL RECORDS.
EASEMENT TO BE QUITCLAIMED.

(12) SAN DIEGO GAS AND ELECTRIC COMPANY HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS PURPOSES RECORDED APRIL 22, 1966 PER INSTRUMENT NO 67935 OF OFFICIAL RECORDS.
EASEMENT TO BE QUITCLAIMED.

(13) STATE OF CALIFORNIA HOLDER OF AN EASEMENT FOR CONSTRUCTING AND MAINTAINING A RETAINING WALL FOOTING TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS PURPOSES RECORDED AUGUST 1, 1969 PER INSTRUMENT NO 140370 OF OFFICIAL RECORDS.
EASEMENT TO REMAIN.

ITEM 14 IS A NON MAPPING ITEM AND THEREFOR IS NOT SHOWN HEREON.

(15) SAN DIEGO GAS AND ELECTRIC COMPANY HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS PURPOSES RECORDED SEPTEMBER 7, 1979 PER INSTRUMENT NO 79-375238 OF OFFICIAL RECORDS.
EASEMENT TO BE QUITCLAIMED.

ITEMS 16 THROUGH 23 ARE NON MAPPING ITEMS AND THEREFOR ARE NOT SHOWN HEREON.

FOUND MONUMENTS

(1) FOUND LEAD & DISK, ILLEGIBLE, PER MAP 5632.

(2) FOUND LEAD & DISK STAMPED "LS 7019" PER ROS 20588

(3) FOUND 3/4" IRON PIPE WITH DISK, ILLEGIBLE, PER ROS 1344, SEE ROS 20588.

EXISTING PROPERTY LINE DATA TABLE

	BEARING	LENGTH	RADIUS	ARC LENGTH	DELTA
1	N 15°35'47" W	50.33'	4940.00'	50.33'	0°35'01"
2	N 37°08'11" E	2.82'			
3	S 17°01'39" E	37.17'			
4	S 75°06'22" W	3.48'			
5	N 11°59'53" W	499.17'	4940.00'	499.38'	5°47'31"
6	S 09°06'49" E	80.39'			
7	N 13°46'04" E	15.55'	20.00'	15.97'	45°45'46"
8	S 36°38'57" W	79.99'			
9	S 36°38'57" W	23.22'			
10	N 39°00'12" W	9.21'			
11	N 00°57'54" W	37.39'	31.00'	40.14'	74°11'04"
12	N 38°03'25" W	59.00'			
13	N 21°03'11" W	60.76'			
14	N 36°42'27" E	2.53'			
15	S 12°28'38" E	314.03'	665.00'	317.02'	27°18'52"
16	S 11°03'16" W	297.38'	865.00'	298.87'	19°47'47"

PROPOSED DEDICATION DATA TABLE

	BEARING	LENGTH	RADIUS	ARC LENGTH	DELTA
A	N 15°46'13" W	20.36'	4940.00'	20.36'	0°14'10"
B	N 13°04'23" W	367.74'			
C	N 11°05'36" W	137.21'	1986.00'	137.24'	3°57'34"
D	N 09°06'49" W	132.17'			
E	N 36°38'57" E	104.15'			
F	N 15°33'43" W	23.72'	31.00'	24.34'	44°59'25"

LEGEND

- PROPERTY LINE / PROJECT BOUNDARY
- RIGHT OF WAY LINE
- STREET CENTERLINE
- EXISTING LOT LINE
- EXISTING EASEMENT
- PROPOSED DEDICATION
- PROPOSED VACATION/QUITCLAIM
- PROPOSED EASEMENT

(1) PROPOSED EASEMENTS

(A) PROPOSED 10-FT UTILITY EASEMENT FOR EXISTING PUBLIC SEWER MAIN

GENERAL NOTES:

1. FIELD SURVEY FOR THIS SITE WAS PERFORMED APRIL 7, 2021.

2. SUBJECT PROPERTY LIES WITHIN FLOOD ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) PER FEMA FLOOD INSURANCE RATE MAP NO. 06073C1614H EFFECTIVE DATE OF 12/20/2019.

3. UNDERGROUND UTILITIES SHOWN ARE FROM RECORD INFORMATION AND READILY OBSERVABLE EVIDENCE FOUND IN THE FIELD.

4. SURVEY AND EASEMENTS SHOWN FROM A.L.T.A. BY PASCO, LARET, SUITER & ASSOCIATES DATED JANUARY 19, 2022.

5. RECORD DOCUMENTS AND TITLE WORK WERE PROVIDED TO THE SURVEYOR BY CHICAGO TITLE COMPANY, ORDER NO 00141086-994-LT2-DB WITH AN EFFECTIVE DATE OF NOVEMBER 19, 2020.

SITE NOTES:

TRANSIT STOPS:
NO EXISTING OR PROPOSED TRANSIT STOPS WITHIN PROJECT FRONTAGE.
NEAREST TRANSIT STOP: OLD TOWN STATION, APPROXIMATELY 500 FT SOUTHWEST OF SITE

HYDRANTS:
TWO EXISTING HYDRANTS WITHIN PROJECT FRONTAGE, TO REMAIN.
ONE PROPOSED HYDRANT WITHIN PACIFIC HIGHWAY FRONTAGE. SEE SHEET C3.0.

CURB CUTS:
EXISTING:
(6) CURB CUTS WITHIN PACIFIC HIGHWAY FRONTAGE
(2) CURB CUTS WITHIN ROSECRANS FRONTAGE
PROPOSED:
(2) CURB CUTS WITHIN PACIFIC HIGHWAY FRONTAGE (SEE SHEET C3.0)
(1) CURB CUT WITHIN ROSECRANS FRONTAGE (SEE SHEET C3.0)

carrierjohnson + CULTURE
architecture + environments + brand strategy + graphics

VIEWPOINT OLD TOWN
4620 PACIFIC HIGHWAY
SAN DIEGO, CA 92110

ISSUES:

NO	DESCRIPTION	DATE

LICENSED PROFESSIONAL ENGINEER TYLER G. LANGDON
PRELIMINARY NOT FOR CONSTRUCTION
CIVIL
STATE OF CALIFORNIA

PROJECT NO: PLSA 3598
FILE NAME: WRITE CENTRAL FILE PATH HERE (I.E. P:\0000.000\BIM\Central File\0000.00-central.rvt)
DRAWN BY: CJB
CHECKED BY: TGL
PLOT DATE: May 18, 2023
TITLE:

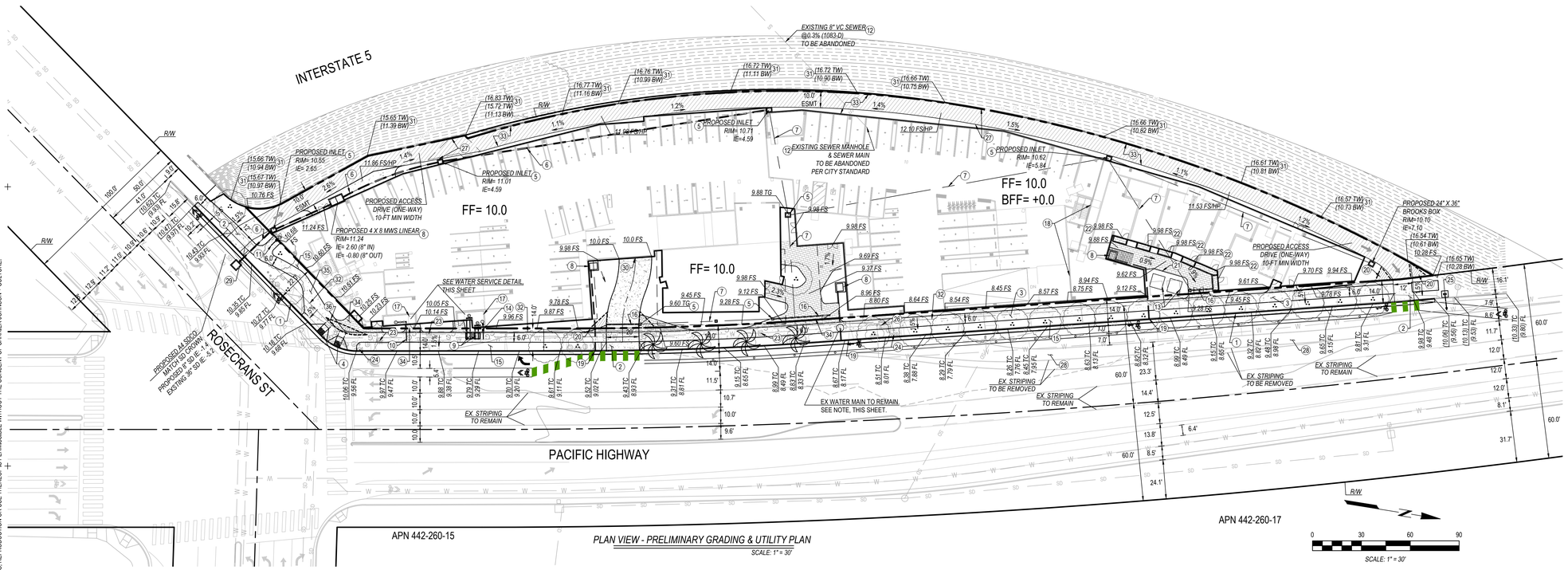
EXISTING EASEMENTS & SITE CONDITIONS

DRAWING NO: C2.0

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

VIEWPOINT OLD TOWN SITE DEVELOPMENT PERMIT

NDP # XXXXXX



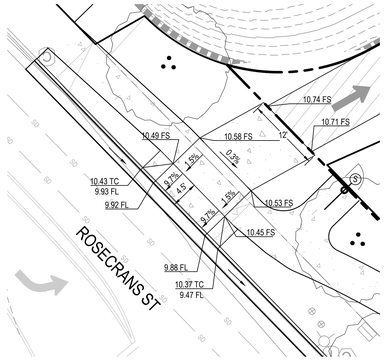
LEGEND

- PROPOSED BUILDING FOOTPRINT AT GROUND LEVEL (PER ARCH'L PLAN)
- PROPOSED BUILDING OVERHANG (PER ARCH'L PLAN)
- PROPOSED LIMIT OF SUBTERRANEAN BUILDING (PER ARCH'L PLAN)
- PROPOSED FENCE (PER LANDSCAPE PLAN)
- PROPOSED 6" CURB & GUTTER
- PROPOSED DRIVEWAY
- EXISTING WATER MAIN (SIZE PER PLAN)
- EXISTING SEWER MAIN (SIZE PER PLAN)
- EXISTING STORM DRAIN (SIZE PER PLAN)
- EXISTING GAS MAIN
- EXISTING TELECOM CONDUIT
- EXISTING ELECTRICAL CONDUIT
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER LATERAL
- PROPOSED WATER SERVICE
- PROPOSED WATER METER VAULT
- PROPOSED BACKFLOW (WITHIN INTERNAL WET ROOM)
- PROPOSED STORM DRAIN (≤ 6")
- PROPOSED STORM DRAIN (≥ 8")
- PROPOSED MWS BMP FACILITY

CONSTRUCTION NOTES

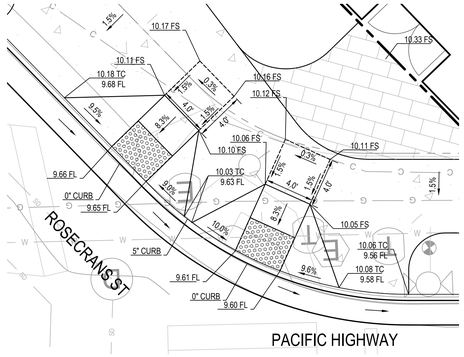
1. PROPOSED PCC CURB AND GUTTER PER CITY STANDARD.
2. PROPOSED PRIVATE PCC DRIVEWAY PER CITY STANDARD.*
3. PROPOSED PCC SIDEWALK PER CITY STANDARD.
4. PROPOSED DUAL CURB RAMP PER CITY STANDARD.
5. PROPOSED STORM DRAIN INLET
6. PROPOSED 8" PVC STORM DRAIN
7. PROPOSED 6" PVC STORM DRAIN
8. PROPOSED MODULAR WETLAND SYSTEM. SEE DETAIL, THIS SHEET.
9. PROPOSED DUAL 2" WATER SERVICE, METER AND BACKFLOW. MANIFOLD TO 3" SUPPLY PRIOR TO BUILDING CONNECTION. PER CITY STANDARD.
10. PROPOSED 6" FIRE SERVICE AND BACKFLOW PER CITY STANDARD.
11. PROPOSED 8" SEWER LATERAL PER CITY STANDARD (PRIVATE). * SEE SHEET C4.2 FOR SEWER MAIN CONNECTION.
12. EXISTING SEWER MAIN & MANHOLE TO BE ABANDONED PER CITY STANDARD.
13. PROPOSED ELECTRICAL TRANSFORMERS (BY OTHERS)
14. PROPOSED 1" IRRIGATION WATER SERVICE, METER & BACKFLOW PER CITY STD.
15. PROPOSED LANDSCAPE AREA PER SEPARATE LANDSCAPE PLANS*
16. PROPOSED 6" TRENCH DRAIN
17. PROPOSED WET UTILITY ROOM (PER SDW-141). SEE ARCH'L PLAN.
18. PROPOSED LIMITS OF UNDERGROUND GARAGE. SEE ARCH'L PLAN.
19. PROPOSED 3" SIDEWALK UNDERDRAIN PER CITY STANDARD.
20. 10x10 SIGHT VISIBILITY TRIANGLE. SEE NOTE, BELOW, & SHEET C4.1.
21. PROPOSED FENCE PER LANDSCAPE PLAN
22. PROPOSED PATIO & WALL PER LANDSCAPE PLAN.
23. EXISTING WATER SERVICE TO BE KILLED AT MAIN PER CITY STANDARD.
24. EXISTING HYDRANT TO REMAIN. ADJUST TO GRADE.
25. PROPOSED HYDRANT PER CITY STANDARD.
26. EXISTING WATER VAULT TO REMAIN. ADJUST RIM TO GRADE.
27. PROPOSED ONE-WAY 10-FT SERVICE ROAD. SEE ARCH'L PLAN FOR INFORMATION.
28. PROPOSED 6-FT CLASS IV CYCLE TRACK W/ 2-FT SHOULDER & FLEXIBLE POSTS.
29. PROPOSED 5-FT CLASS II BICYCLE LANE (5-FT WIDTH, FROM FACE OF CURB TO FOG LINE).
30. PROPOSED VEHICULAR ACCESS POINT TO PARKING STRUCTURE. SEE ARCH'L PLAN.
31. EXISTING CALTRANS RETAINING WALL TO REMAIN. DO NOT DISTURB.
32. EXISTING RIGHT-OF-WAY TO BE DEDICATED. SEE SHEET C2.0
33. PROPOSED EASEMENT FOR SEWER MAIN. SEE SHEET C2.0
34. PROPOSED ENHANCED PAVING PER LANDSCAPE PLAN.*
35. PROPOSED MEANDERING SIDEWALK. ALIGNMENT PER LANDSCAPE PLAN.*
36. 15x15 VISIBILITY TRIANGLE. SEE NOTE, BELOW, & SHEET C4.1.

* REQUIRES EMRA



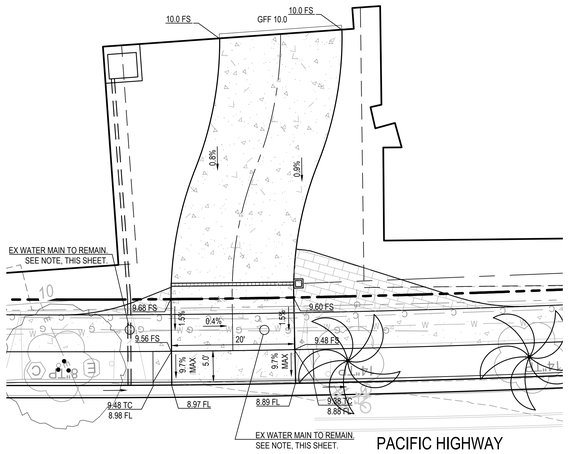
DETAIL - ONE-WAY "ENTRANCE" DRIVEWAY ON ROSECRANS

SCALE: 1" = 10'



DETAIL - CURB RAMP GRADES AT INTERSECTION

SCALE: 1" = 10'



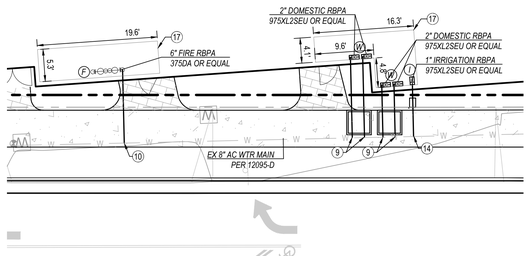
DETAIL - PACIFIC HIGHWAY BUILDING DRIVEWAY

SCALE: 1" = 10'

WATER & SEWER INFORMATIONAL NOTE:

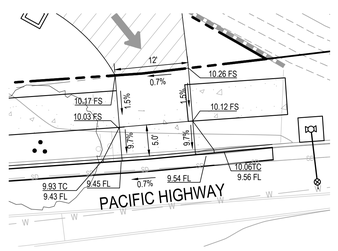
1. IF A 3" OR LARGER WATER METER IS REQUIRED FOR THIS PROJECT, THE OWNER/PERMITTEE SHALL CONSTRUCT THE NEW METER AND PRIVATE BACKFLOW DEVICE ON SITE, ABOVE GROUND, WITHIN AN ADEQUATELY SIZED WATER EASEMENT, IN A MANNER SATISFACTORY TO THE PUBLIC UTILITIES DIRECTOR AND THE CITY ENGINEER.

NOTE:
ANY WORK WITHIN CALTRANS RIGHT-OF-WAY WILL BE COORDINATED WITH CALTRANS AND APPROVED PER CALTRANS POLICY AND GUIDELINES.



DETAIL - WATER SERVICE & WET UTILITY ROOM

SCALE: 1" = 10'



DETAIL - ONE WAY "EXIT" DRIVEWAY TO PAC HWY

SCALE: 1" = 10'

0 40 80 120

SCALE: 1" = 40'

WATER MAIN NOTE:
ASSUMED 48" COVER FOR EXISTING WATER MAIN. PROPOSED IMPROVEMENTS SHALL NOT BE LESS THAN 12" VERTICAL CLEARANCE FROM EXISTING WATER MAIN WITHOUT APPROVAL FROM DSD-PUBLIC UTILITIES DEPARMENT.

SIGHT DISTANCE TRIANGLE NOTE:
TREE CANOPY SHALL NOT EXTEND BELOW 7-FT IN HEIGHT WITHIN S.D. TRIANGLE. NO OTHER VEGETATION SHALL BE ALLOWED TO EXCEED 36-IN IN HEIGHT. OTHER OBSTRUCTIONS SHALL NOT EXCEED 36-IN IN HEIGHT.

VISIBILITY TRIANGLE NOTE:
NO OBSTRUCTION INCLUDING LANDSCAPING OR SOLID WALLS IN THE VISIBILITY AREA SHALL EXCEED 36 INCHES IN HEIGHT.

EMRA NOTE:
NO APPROVED IMPROVEMENTS OR LANDSCAPING, INCLUDING PRIVATE WATER, SEWER AND STORM DRAIN FACILITIES, GRADING AND ENHANCED PAVING, & DRIVEWAYS SHALL BE INSTALLED IN OR OVER ANY PUBLIC WATER/SEWER EASEMENT PRIOR TO THE APPLICANT OBTAINING AN ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT.

ISSUES:

NO	DESCRIPTION	DATE

REGISTERED PROFESSIONAL ENGINEER TYLER G LARSON CIVIL STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NO: PLSA 3598

FILE NAME: WRITE CENTRAL FILE PATH HERE: (I.E. P:\0000.0000\BIM\Central File\0000.00-central.rvt)

DRAWN BY: CJB | CHECKED BY: TGL

PLOT DATE: May 18, 2023

TITLE: PRELIMINARY GRADING & UTILITY PLAN

DRAWING NO: C3.0

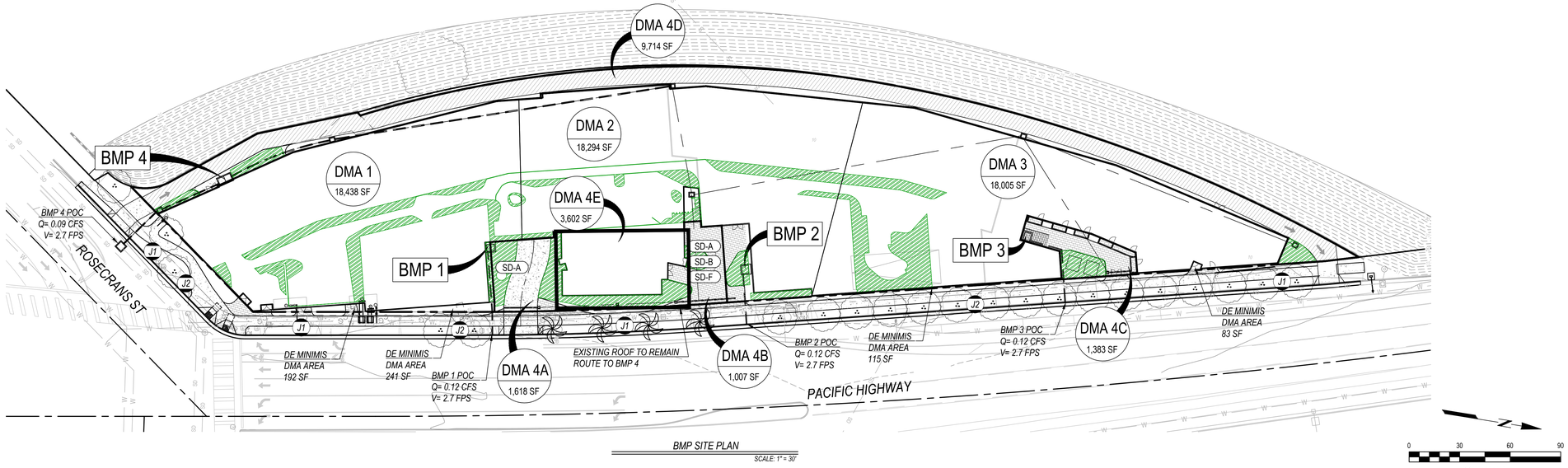
PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

carrierjohnson + CULTURE
architecture + environments + brand strategy + graphics

VIEWPOINT OLD TOWN
4620 PACIFIC HIGHWAY
SAN DIEGO, CA 92110

VIEWPOINT OLD TOWN SITE DEVELOPMENT PERMIT

NDP # XXXXXX



BMP SITE PLAN

SCALE: 1" = 30'

0 30 60 90

SCALE: 1" = 30'

SITE WORK INFORMATION:
TOTAL DISTURBED AREA: 76,154 SF = 1.75 AC
EXISTING IMPERVIOUS AREA: 76,154 SF = 1.75 AC
PROPOSED IMPERVERIOUS AREA (REPLACED): 76,154 SF = 1.75 AC
PROPOSED IMPERVIOUS AREA (NEW): 0 SF = 0 AC
PROPOSED IMPERVIOUS AREA (TOTAL): 76,154 SF = 1.75 AC
PROPOSED INCREASE IN IMPERVIOUS AREA: 0.0%

SOIL INFORMATION:
SOIL TYPE: TYPE D
DEPTH TO GROUND WATER: ~10FT (PER SOILS REPORT)

ROOF AREA RUNOFF CONVEYANCE:
THE STORMWATER RUNOFF FROM THE PROPOSED ROOF AREAS SHALL BE CONVEYED THROUGH THE PROPOSED ROOF DRAIN SYSTEMS DESIGNED BY THE PROJECT ARCHITECT ACCORDING TO THE DRAINAGE AREAS SHOWN ON THIS PLAN

NATURAL HYDROLOGIC FEATURES:
NO NATURAL HYDROLOGIC FEATURES (WATERCOURSES, SEEPS, SPRINGS, WETLANDS) EXIST ON THE PROJECT SITE

COARSE SEDIMENT YIELD
NO CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED. REFER TO PRIORITY DEVELOPMENT PROJECT SWQMP PREPARED BY PASCO, LARET, SUITER & ASSOCIATES

GREEN STREET BMP'S

(JT1) *SIDEWALK PLANTER*

(J2) *STREET TREES*

SITE DESIGN BMP'S

SITE DESIGN MEASURE		IMPLEMENTATION		
SD-A	TREES (PER LANDSCAPE PLANS)	☒ YES	☐ NO	☐ N/A
SD-B	IMPERVIOUS AREA DISPERSION	☒ YES	☐ NO	☐ N/A
SD-C	GREEN ROOFS	☐ YES	☐ NO	☒ N/A
SD-D	PERMEABLE PAVEMENT	☐ YES	☐ NO	☒ N/A
SD-E	RAIN BARRELS	☐ YES	☐ NO	☒ N/A
SD-F	AMENDED SOILS	☒ YES	☐ NO	☐ N/A

DMA INFORMATION

	1	2	3	4
TOTAL AREA (SF)	18438	18294	18005	17324
ROOF (SF)	18438	18294	18005	3602
HARDSCAPE (SF)	16688	17194	16355	10772
LANDSCAPE (SF)	1750**	1100**	1650**	2950
TOTAL IMPERVIOUS (SF)	18438	18294	18005	14374
TOTAL PERVIOUS (SF)	0	0	0	2950
PERCENT IMPERVIOUS (%)	100.0%	100.0%	100.0%	82.9%
BMP TREATMENT	6X6 MWS FG	6X6 MWS FG	6X6 MWS FG	4X8 MWS LINEAR
DCV (CF)	719	713	702	601
CALCULATED FLOW RATE (CFS)	0.114	0.113	0.112	0.10
CERTIFIED TREATMENT CAPACITY (CFS)	0.12	0.12	0.12	0.12

** *NOTE: PROPOSED LANDSCAPE AREAS PER ARCHITECTURE & LANDSCAPE ARCHITECTURE PLANS, AND IS WITHIN AMENITY AREAS ON STRUCTURE. THE LANDSCAPE AREAS TABULATED ARE USED SOLELY FOR VOLUME RETENTION CALCULATIONS AND NOT CONSIDERED FOR NET IMPERVIOUS & NET PERVIOUS AREA TABULATION.*

LEGEND

- *PROPERTY BOUNDARY*
- *RIGHT OF WAY*
- *STREET CENTERLINE*
- *DRAINAGE PATH OF TRAVEL*
- *DMA BOUNDARY*
- *EXISTING CONTOURS*
- SD-A — *SITE DESIGN MEASURE IDENTIFIER*
- (#) — *GREEN STREET BMP*
- DMA # / AREA — *DMA IDENTIFIER & TOTAL AREA*
- *PROPOSED HARDSCAPE*
- *PROPOSED LANDSCAPE AREAS INCLUDED IN VOLUME RETENTION CALCULATIONS 3" MIN AMENDED SOIL, SEE LSCAPE PLAN*
- BMP # — *PROPOSED POST CONSTRUCTION BMP*

SITE SPECIFIC DATA	
PROJECT NUMBER	
PROJECT NAME	
PROJECT LOCATION	
STRUCTURE ID	BMP 1, 2, & 3
TREATMENT REQUIRED	
TREATMENT FLOW (CFS)	0.12 CFS (MAX)
NOTES:	

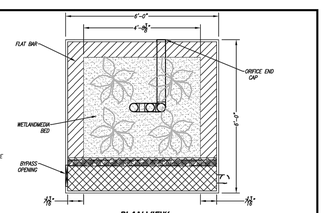
	FG-MWS-L-6-6-3.5
TREATMENT FLOW (CFS)	0.12
VAULT HEIGHT (FT)	3.5
MAX. OPERATING HEAD (FT)	3.0
WETLAND MEDIA VOLUME, (CY)	2.37
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0
ORIFICE SIZE, (DIA. INCHES)	1.61

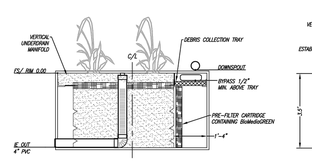
INSTALLATION NOTES

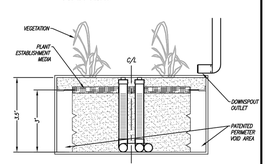
1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS INSTALLING ON A PAVED SURFACE, OR A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES.
4. DRIP OR SPRAY IRRIGATION REQUIRED ON ALL UNITS WITH VEGETATION.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.







Bio Clean — A Forterra Company

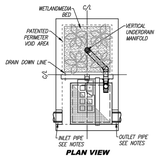
FIBERGLASS MWS LINEAR STORMWATER BIOFILTRATION SYSTEM FG-MWS-L-6-6-3.5

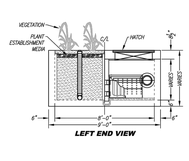
DETAIL: MWS PLANTER (BMP 1, 2, 3)

NOT TO SCALE

SITE SPECIFIC DATA			
PROJECT NUMBER		PLSA 3598	
PROJECT NAME		VIEWPOINT OLD TOWN	
PROJECT LOCATION		SAN DIEGO, CALIFORNIA	
STRUCTURE ID		BMP 4	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.115 (MAX)	
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	2.60	HDPE	6"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	-0.80	HDPE	6"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION		10.66	
SURFACE LOAD	DIRECT TRAFFIC		
FRAME & COVER	24" x 24"	UNDERGROUND	N/A
NOTES:			

* PRELIMINARY NOT FOR CONSTRUCTION



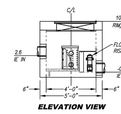


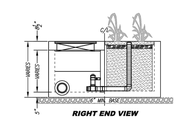
INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT INTRUDE BEYOND FLUSH. PART OF CONCRETE WALL MUST BE REMOVED TO ACCOMMODATE PIPE FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURERS STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS, ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURERS WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.





TREATMENT FLOW (CFS)	0.115
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

Bio Clean — A Forterra Company

MWS-L-4-8-V STORMWATER BIOFILTRATION SYSTEM STANDARD DETAIL

DETAIL: MWS VAULT (BMP 4)

NOT TO SCALE

carrierjohnson + CULTURE
architecture + environments + brand strategy + graphics

VIEWPOINT OLD TOWN

4620 PACIFIC HIGHWAY
SAN DIEGO, CA 92110

ISSUES:

NO	DESCRIPTION	DATE

LICENSED PROFESSIONAL ENGINEER — TYLER G. LARSEN — PRELIMINARY NOT FOR CONSTRUCTION — CIVIL — STATE OF CALIFORNIA

PROJECT NO:
PLSA 3598

FILE NAME:
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DRAWN BY: CJB
CHECKED BY: TGL

PLOT DATE:
May 18, 2023

TITLE:

PRELIMINARY BMP PLAN

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

DRAWING NO:

C3.1

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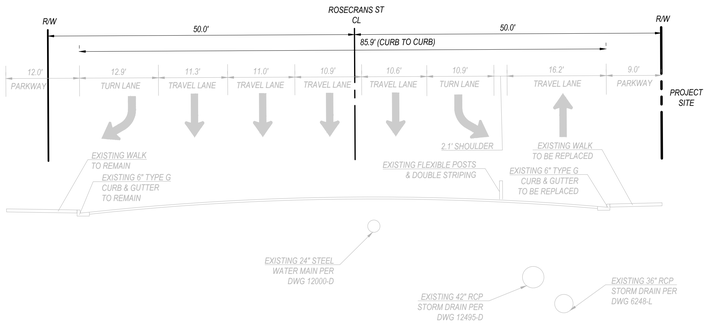
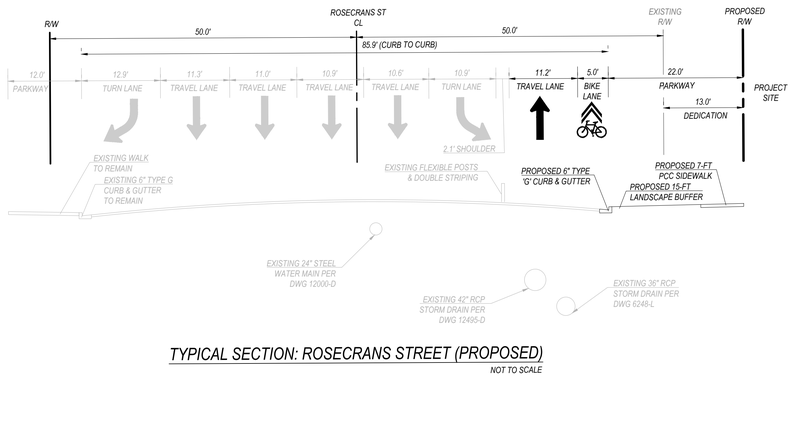
NDP # XXXXXX



TYPICAL SECTION: ROSECRANS STREET (EXISTING)

NOT TO SCALE



TYPICAL SECTION: ROSECRANS STREET (PROPOSED)

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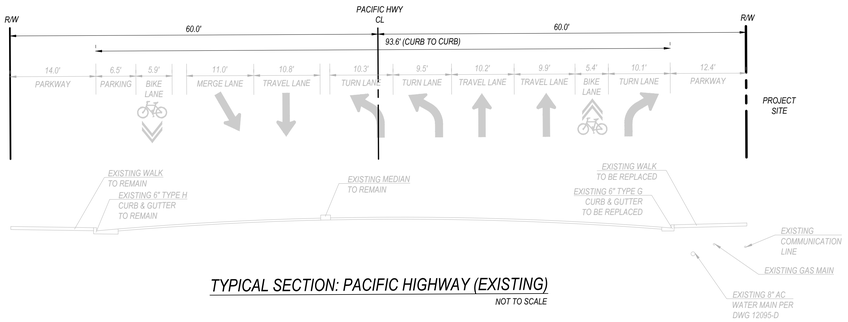
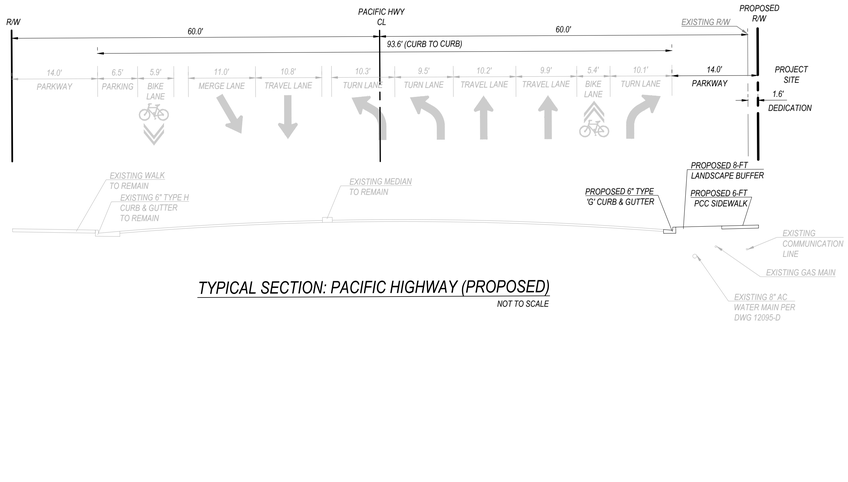


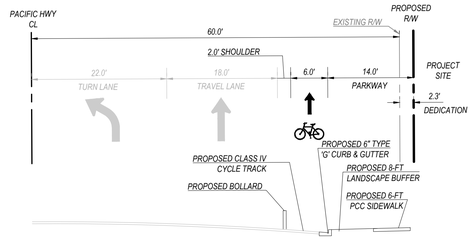
TYPICAL SECTION: PACIFIC HIGHWAY (EXISTING)

NOT TO SCALE



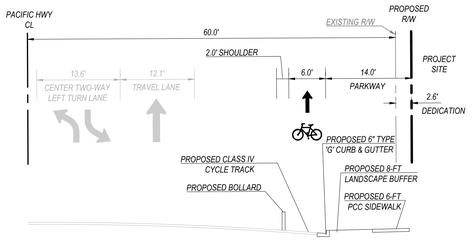
TYPICAL SECTION: PACIFIC HIGHWAY (PROPOSED)

NOT TO SCALE



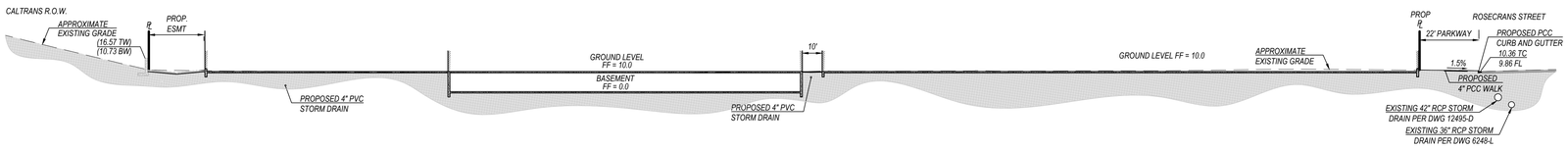
SECTION C-C: PACIFIC HIGHWAY (PROPOSED)

NOT TO SCALE



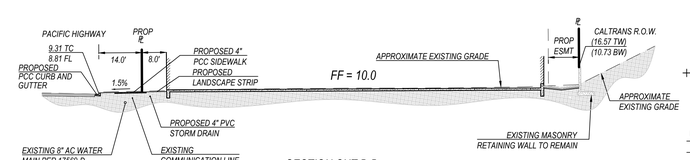
SECTION D-D: PACIFIC HIGHWAY (PROPOSED)

NOT TO SCALE



SECTION CUT A-A

SCALE: NOT TO SCALE



SECTION CUT B-B

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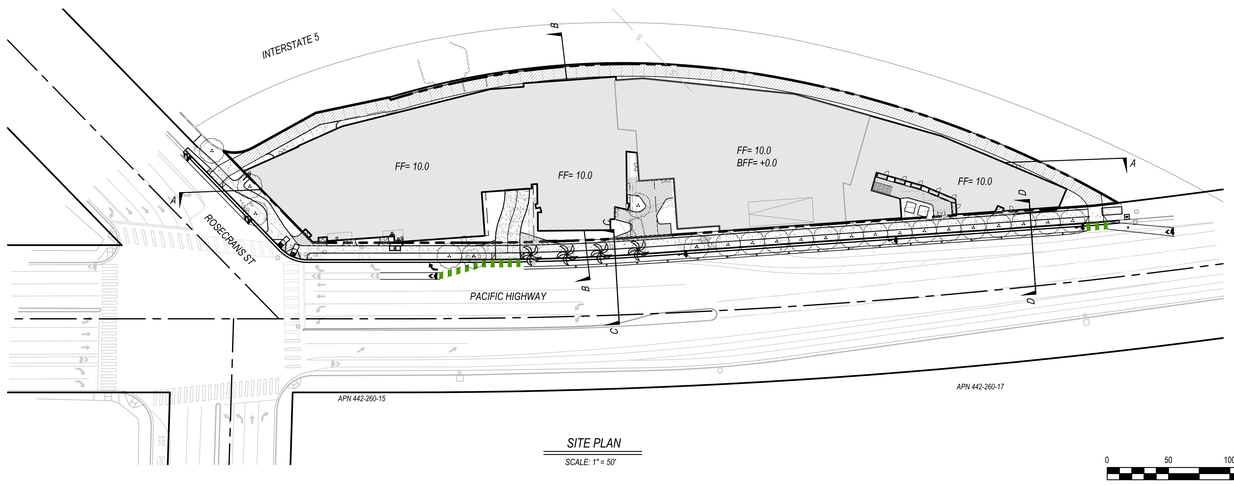
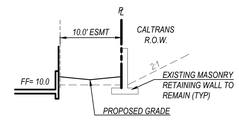


SITE PLAN

SCALE: 1" = 50'



SECTION - CALTRANS EASEMENT

SCALE: 1" = 10'

0 50 100 150

SCALE: 1" = 50'

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architecture + environments + brand strategy + graphics

VIEWPOINT OLD TOWN
4620 PACIFIC HIGHWAY
SAN DIEGO, CA 92110

ISSUES:

NO	DESCRIPTION	DATE

LICENSED PROFESSIONAL ENGINEER — TYLER G. LARSON — CIVIL — STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NO: PLSA 3598

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DRAWN BY: CJB | CHECKED BY: TGL

PLOT DATE: May 18, 2023

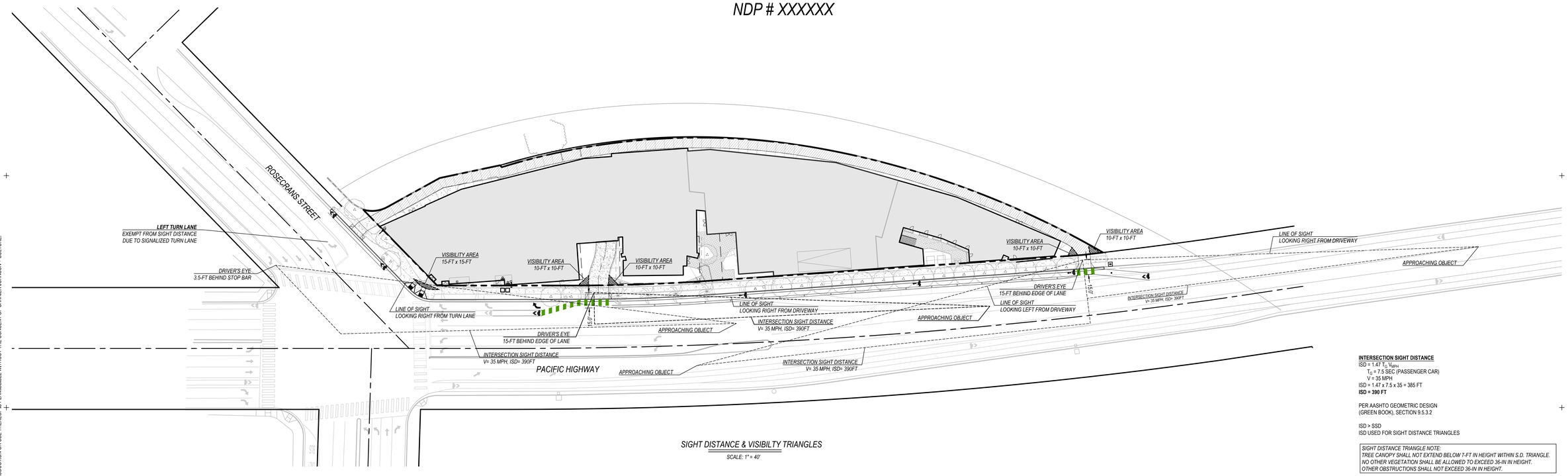
TITLE: PRELIMINARY SECTIONS & DETAILS

DRAWING NO: C4.0

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

VIEWPOINT OLD TOWN SITE DEVELOPMENT PERMIT

NDP # XXXXXX



SIGHT DISTANCE & VISIBILTY TRIANGLES

SCALE: 1" = 40'

INTERSECTION SIGHT DISTANCE NOTE:
INTERSECTION SIGHT DISTANCE SHOWN AT THE INTERSECTION OF ROSECRANS STREET & PACIFIC HIGHWAY TO DEMONSTRATE THAT A MODIFIED VISIBILITY AREA DOES NOT CREATE A PUBLIC HEALTH AND SAFETY HAZARD. PER SDMC 113.0273(C)(2), VISIBILITY AREA MAY BE REDUCED IF THE REDUCED DISTANCE WOULD NOT CREATE A PUBLIC HEALTH AND SAFETY HAZARD.

PER AASHTO 9.5.3.4.D:
*AT SIGNALIZED INTERSECTIONS, THE FIRST VEHICLE STOPPED ON ONE APPROACH SHOULD BE VISIBLE TO THE DRIVER OF THE FIRST VEHICLE STOPPED ON EACH OF THE OTHER APPROACHES. LEFT-TURNING VEHICLES SHOULD HAVE SUFFICIENT SIGHT DISTANCE TO SELECT GAPS IN ONCOMING TRAFFIC AND COMPLETE LEFT TURNS. **APART FROM THESE SIGHT CONDITIONS, THERE ARE GENERALLY NO OTHER APPROACH OR DEPARTURE SIGHT TRIANGLES NEEDED FOR SIGNALIZED INTERSECTIONS.** SIGNALIZATION MAY BE AN APPROPRIATE CRASH COUNTERMEASURE FOR HIGHER VOLUME INTERSECTIONS WITH RESTRICTED SIGHT DISTANCE THAT HAVE EXPERIENCED A PATTERN OF SIGHT-DISTANCE RELATED CRASHES.*

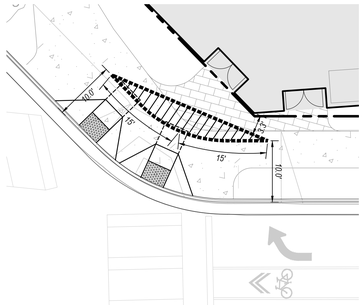
INTERSECTION SIGHT DISTANCE
ISD = 1.47 T_G V_{MPH}
T_G = 7.5 SEC (PASSENGER CAR)
V = 35 MPH
ISD = 1.47 x 7.5 x 35 = 385 FT
ISD = 390 FT

PER AASHTO GEOMETRIC DESIGN
(GREEN BOOK), SECTION 9.5.3.2

ISD > SSD
ISD USED FOR SIGHT DISTANCE TRIANGLES

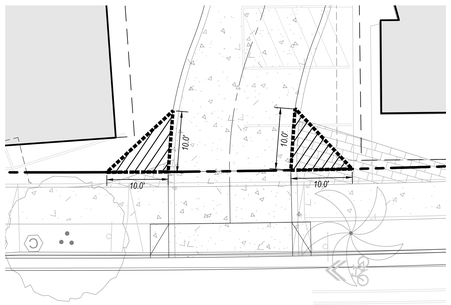
SIGHT DISTANCE TRIANGLE NOTE:
TREE CANOPY SHALL NOT EXTEND BELOW 7-FT IN HEIGHT WITHIN S.D. TRIANGLE. NO OTHER VEGETATION SHALL BE ALLOWED TO EXCEED 36-IN IN HEIGHT. OTHER OBSTRUCTIONS SHALL NOT EXCEED 36-IN IN HEIGHT.

VISIBILITY TRIANGLE NOTE:
NO OBSTRUCTION INCLUDING LANDSCAPING OR SOLID WALLS IN THE VISIBILITY AREA SHALL EXCEED 36 INCHES IN HEIGHT.



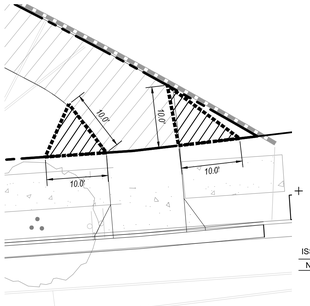
VISIBILITY TRIANGLE AT STREET INTERSECTION

SCALE: 1" = 10'



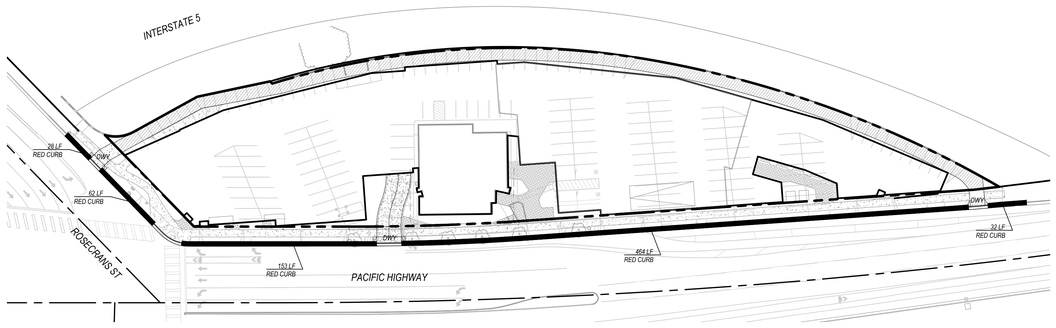
VISIBILITY TRIANGLE AT PROJECT DRIVEWAY

SCALE: 1" = 10'



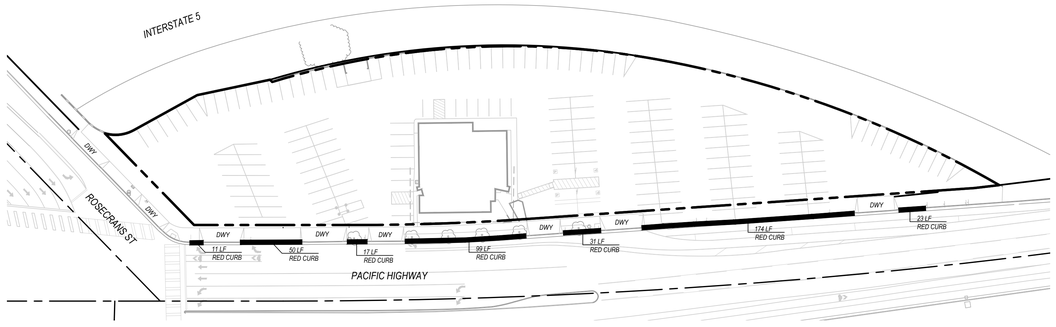
VISIBILITY TRIANGLE AT ONE-WAY EXIT

SCALE: 1" = 10'



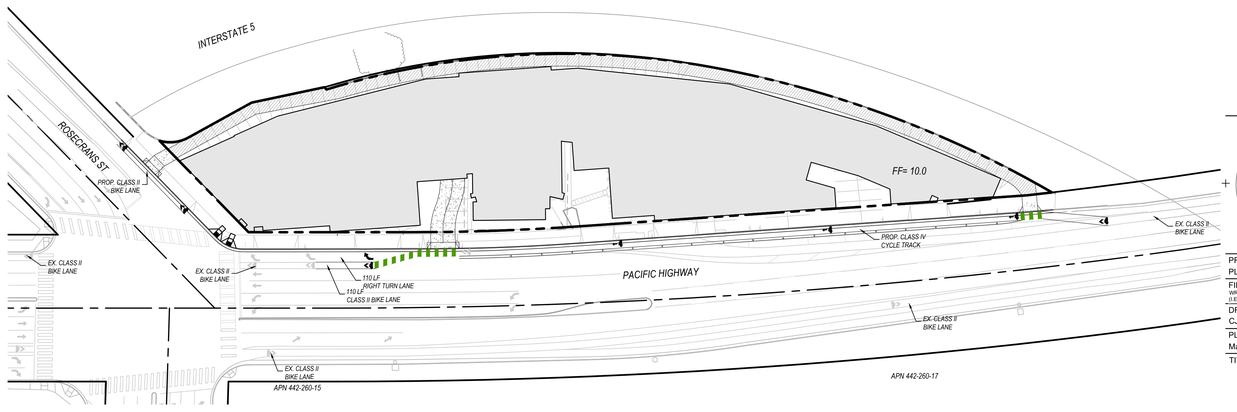
PROPOSED CURB USAGE PLAN

SCALE: 1" = 40'



EXISTING CURB USAGE PLAN

SCALE: 1" = 40'



PROPOSED STRIPING EXHIBIT

SCALE: 1" = 40'

0 50 100 150

SCALE: 1" = 50'

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architecture + environments + brand strategy + graphics

VIEWPOINT OLD TOWN

4620 PACIFIC HIGHWAY
SAN DIEGO, CA 92110

ISSUES:

NO	DESCRIPTION	DATE

CERTIFIED PROFESSIONAL ENGINEER
TYLER G. LAWSON
PRELIMINARY NOT FOR CONSTRUCTION
CIVIL
STATE OF CALIFORNIA

PROJECT NO:
PLSA 3598

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DRAWN BY: CJB
CHECKED BY: TGL

PLOT DATE:
May 18, 2023

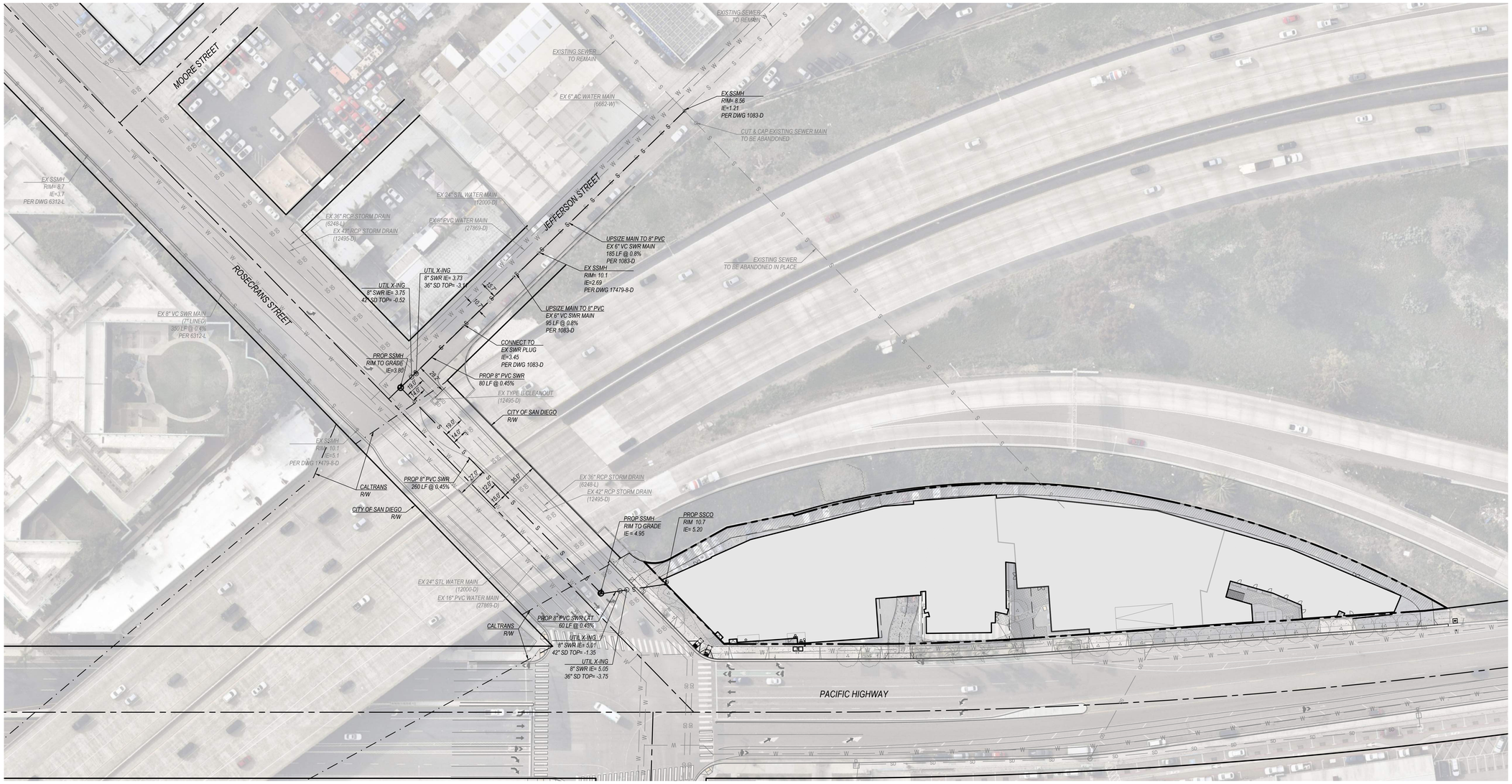
TITLE:
VISIBILITY & CURB USAGE PLAN

DRAWING NO:
C4.1

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

VIEWPOINT OLD TOWN SITE DEVELOPMENT PERMIT

NDP # XXXXXX



SEWER MAIN EXTENSION PLAN

SCALE: 1" = 40'

NOTE:
ANY WORK WITHIN CALTRANS RIGHT-OF-WAY WILL BE COORDINATED WITH CALTRANS AND APPROVED PER CALTRANS POLICY AND GUIDELINES.

0 40 80 120

SCALE: 1" = 40'

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

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ISSUES:

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TERRY PROFESSIONAL ENG. TYLER G LAWSON
PRELIMINARY NOT FOR CONSTRUCTION
CIVIL
STATE OF CALIFORNIA

PROJECT NO:
PLSA 3598

FILE NAME:
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DRAWN BY: CJB
CHECKED BY: TGL

PLOT DATE:
May 18, 2023

TITLE:
SEWER MAIN EXTENSION PLAN

DRAWING NO:
C4.2

APPENDIX B

CITY OF SAN DIEGO SEWER DESIGN CRITERIA

Sewer Design Guide

(Revised May, 2015)

City of San Diego

Public Utilities Department

9192 Topaz Way • San Diego, CA 92123
Tel (858) 292-6300 Fax (858) 292-6310

street alignments) and all potential points of entry of sewage from surrounding lands.

1.3.1.3 Depth of Mains

The planning study shall clearly identify all existing and/or proposed facilities which will exceed standard depths for sewer mains as defined in Subsection 2.2.1.5. In cases where proposed sewers will exceed 15 feet in depth, a request for design deviation (ATTACHMENT 2) must be submitted to the Water and Sewer Development Review Senior Civil Engineer with the Sewer Planning Study. A design deviation will only be approved in exceptional cases and when adequate justification is provided. Mains more than 20 feet deep shall also require approval from the Wastewater Collection Division Senior Civil Engineer.

1.3.1.4 Existing Studies

The City of San Diego maintains an extensive library of sewer planning studies which were prepared for lands throughout the City. These studies are available for review at the Water and Sewer Development Section, Public Utilities Department. All studies are catalogued by subdivision or trunk sewer name. Logs of sewer flow study analyses for recently monitored trunk sewers and a map of sewers which meet the Regional Water Quality Control Board (RWQCB) criteria for being critical or sub-critical may also be viewed. In addition, information regarding proposed CIP projects within the vicinity of a given project may be requested. In many cases, an addendum or reference to one of the existing planning studies may be acceptable in lieu of an independent study. Concurrent with the preparation of planning studies for sewers proposed to connect to existing canyon sewer mains, a study of flow redirection per Council Policy 400-13 and a cost-benefit analysis per Council Policy 400-14 shall be prepared (Refer to ATTACHMENT 1). An existing analysis of redirection of flows and a cost-benefit analysis, as required by Council Policies 400-13 and 400-14 respectively, may be available for reference for various existing canyon sewers.

1.3.2 Flow Estimation

1.3.2.1 Land Use

Present or future allowable land use, whichever results in higher equivalent population, shall be used to generate potential sewage flows.

1.3.2.2 Flow Determination

Flow definitions and calculation procedures are listed below. All calculations shall be tabulated for each sewer main section (manhole to manhole) in the

format shown on Figure 1-2.

Equivalent Population: The equivalent population shall be calculated from zoning information (Ref. Section 1.6). For major new facilities such as high rise apartment buildings, flow rates (assuming one lateral) shall be checked based on the most current, adopted edition of the Uniform Plumbing Code. The most conservative flow rate shall govern.

Daily Per Capita Sewer Flow: The sewer flow for the equivalent population shall be 80 gallons per capita per day (gpcd).

Average Dry Weather Flow (ADWF): Equivalent populations shall be used to calculate the average dry weather flow. The average dry weather flow for each sewer main reach (manhole to manhole) shall be determined by multiplying the total accumulated equivalent population contributing to that reach by 80 gallons per capita per day:

Average Dry Weather Flow = (80 gpcpd) x (Equivalent Population)

Peaking Factor for Dry Weather Flow (PFDWF): The peaking factor is the ratio of peak dry weather flow to average dry weather flow. It is dependent upon the equivalent population within a tributary area. The tributary area is the area upstream of, and including, the current reach for the total flow in each reach of pipe. Figure 1-1, consisting of the table prepared by Holmes and Narver in 1960, shall be used to determine peaking factors for each tributary area. In no instance shall the dry weather flow peaking factor be less than 1.5.

Peak Dry Weather Flow (PDWF): The peak dry weather flow for each sewer main reach shall be determined by multiplying the average dry weather flow by the appropriate peaking factor (Note that peak dry weather flows are not algebraically cumulative as routed through the sewer system, i.e. the peak dry weather flow at any point shall be based on the equivalent population in the basin to that point (Ref. Figure 1-2).

Peak Dry Weather Flow = (Average Dry Weather Flow) x (Dry Weather Flow Peaking Factor)

Peaking Factor for Wet Weather Flow (PFWWF): The peaking factor for wet weather flow is the ratio of peak wet weather flow to peak dry weather flow. It is basin-specific and shall be based on essential information available at the time of the planning study. Information such as historical rainfall/sewage flow data, land use, soil data, pipe/manhole age, materials and conditions, groundwater elevations (post development), inflow and infiltration (I/I) studies, size, slope and densities of the drainage basin, etc., should be utilized in the wet weather analysis to estimate the peaking factor for wet weather. Upward adjustments shall be made in areas with expected high inflow and

infiltration (i.e. high ground water or in areas with lush landscaping schemes). Flow meters are installed throughout the City's sewer system. Flow data collected from these meters are available upon request. The objective of this analysis is to quantify the magnitude of peak wet weather flow with a 10-year return period on a statistical basis.

The Senior Civil Engineer overseeing the preparation of the planning study shall coordinate with the City Sewer Modeling Group for approval of the peaking factors to be used for design.

Peak Wet Weather Flow (PWWF): The peak wet weather flow (or design flow) for a gravity sewer main reach shall be determined by multiplying the peak dry weather flow (ref. Figure 1-2) by the appropriate wet weather peaking factor. The peak wet weather flow is the design flow for a gravity sewer main. It is determined at any point in the system based on the associated upstream average dry weather flow in the basis to that point times the peaking factor for wet weather.

Peak Wet Weather Flow = (Peak Dry Weather Flow) x (Wet Weather Peaking Factor)

1.3.3 Pipe Sizing Criteria

1.3.3.1 Hydraulic Requirements

Manning's formula for open-channel flows shall be used to calculate flows in gravity sewer mains. Manning's coefficient of roughness "n" shall be assumed to be 0.013 for all types of sewer pipe. Sewer grades shall be designed for velocities of 3 to 5 feet per second (fps) where possible. This is extremely important in areas where peak flow will not be achieved for many years. The minimum allowable velocity is 2 fps at calculated peak dry weather flow, excluding infiltration. Sewer mains that do not sustain 2 fps at peak flows shall be designed to have a minimum slope of 1 percent. Additional slope may be required by the Senior Civil Engineer where fill of varied depth is placed below the pipe in order to provide adequate slope after expected settlement occurs. The maximum allowable velocity shall be 10 fps and shall be avoided by adjusting slopes, by increasing the pipe diameter, or by utilizing a vertical curve transition to lower velocities per subsections 2.2.4 and 2.2.9.4. If the Senior Civil Engineer approves a velocity greater than 10 fps, the pipe shall be upgraded to SDR 18 PVC (standard dimension ratio polyvinyl chloride), concrete-encased VC (vitrified clay), or PVC sheet-lined reinforced concrete pipe.

1.3.3.2 Slope

Slope shall be calculated as the difference in elevation at each end of the pipe divided by the horizontal length of the pipe, and shall be a constant value between manholes.

1.3.3.3 Ratio of Depth of Flow to Pipe Diameter (d_n/D)

New sewer mains 15 inches and smaller in diameter shall be sized to carry the projected peak wet weather flow at a depth not greater than half of the inside diameter of the pipe (d_n/D not to exceed 0.5). New sewer mains 18 inches and larger shall be sized to carry the projected peak wet weather flow at a depth of flow not greater than 3/4 of the inside diameter of the pipe (d_n/D not to exceed 0.75).

1.3.3.4 Minimum Pipe Sizes

The size of a sewer pipe is defined as the inside diameter of the pipe. Sewer mains shall be a minimum of 8 inches in diameter in residential areas, and a minimum of 10 inches in commercial, industrial, and high-rise building areas.

1.3.4 Sewer Study Exhibit Criteria

The DESIGN ENGINEER's sewer study exhibits shall be used to evaluate hydraulics and to establish minimum street and easement widths. Therefore, these documents need to reflect depths and separation of mains from other utilities and improvements. Refer to the Minimum Intake Standards for Sewer Studies in Subsection 1.8.

1.3.5 Private On-Site Wastewater Treatment and Reuse

Refer to Attachment 6 for permitting guidelines of private on-site wastewater treatment and reuse in the City of San Diego.

1.4 SEPARATION OF MAINS

1.4.1 Horizontal Separation

1.4.1.1 Wet Utilities

The separation of water, sewer, reclaimed water mains, and storm drains shall comply with the *State of California Department of Health Services Criteria for the Separation of Water Mains and Sanitary Sewers*. At least 10 feet of horizontal separation shall be maintained between the nearest outer surfaces of sewer lines and potable water mains. More stringent separation requirements

TABLE 1-1
CITY OF SAN DIEGO SEWER DESIGN GUIDE
DENSITY CONVERSIONS

Zone	Maximum Density (DU/Net Ac)	Population per DU	Equivalent Population (Pop/Net Ac)
AR-1-1, RE-1-1	0.1	3.5	0.4
RE-1-2	0.2	3.5	0.7
AR-1-2, RE-1-3	1	3.5	3.5
RS-1-1, RS-1-8	1	3.5	3.5
RS-1-2, RS-1-9	2	3.5	7.0
RS-1-3, RS-1-10	3	3.5	10.5
RS-1-4, RS-1-11	4	3.5	14.0
RS-1-5, RS-1-12	5	3.5	17.5
RS-1-6, RS-1-13	7	3.5	24.5
RS-1-7, RS-1-14	9	3.5	31.5
RX-1-1	11	3.4	37.4
RT-1-1	12	3.3	39.6
RX-1-2, RT-1-2, RU-1-1	14	3.2	44.8
RT-1-3, RM-1-2	17	3.1	52.7
RT-1-4	20	3.0	60.0
RM-1-3	22	3.0	66.0
RM-2-4	25	3.0	75.0
RM-2-5	29	3.0	87.0
RM-2-6	35	2.8	98.0
RM-3-7, RM-5-12	43	2.6	111.8
RM-3-8	54	2.4	129.6
RM-3-9	73	2.2	160.6
RM-4-10	109	1.8	196.2
RM-4-11	218	1.5	327.0

TABLE 1-1
CITY OF SAN DIEGO SEWER DESIGN GUIDE
DENSITY CONVERSIONS (Continued)

Zone	Maximum Density (DU / Net Ac)	Population Per DU	Equivalent Population (Pop/Net Ac)
Schools/Public	8.9	3.5	31.2
Offices	10.9	3.5	38.2*
Commercial/Hotels	12.5	3.5	43.7*
Industrial	17.9	3.5	62.5*
Hospital	42.9	3.5	150.0*

Figures with asterisk (*) represent equivalent population per floor of the building.

Definitions:
DU = Dwelling Units
Ac = Acreage
Pop = Population

Net Acreage is the developable lot area excluding areas that are dedicated as public streets in acres. Gross Area is the entire area in acres of the drainage basin, including lots, streets, etc.

For undeveloped areas, assume Net Acreage = 0.8 x Gross Area in Acres

For developed areas, calculate actual Net Acreage.

Tabulated figures are for general case. The tabulated figures shall not be used if more accurate figures are available.

Population is based on actual equivalent dwelling units (EDU) or the maximum estimate obtained from zoning.

Conversion of Fixture Units to Equivalent Dwelling Units (EDU): The Water Meter Data Card, maintained by the Development Services Department, contains a table of plumbing fixtures that should be used for determining the equivalent dwelling units (EDU's) for the purpose of estimating the rate of wastewater generation in residential, commercial, or industrial areas. Currently, the basis for conversion is: 20 fixtures = 1 EDU and 1 EDU = 280 gallons of wastewater per day.

In high rise building areas, flow rates shall be based on the most current, adopted edition of the applicable Plumbing Code, assuming one lateral per area. The most conservative flow rate shall govern.

PUBLIC UTILITIES DEPARTMENT

PEAKING FACTOR FOR SEWER FLOWS
(Dry Weather)

Ratio of Peak to Average Flow*
Versus Tributary Population

Population	Ratio of Peak to Average Flow	Population	Ratio of Peak to Average Flow
200	4.00	4,800	2.01
500	3.00	5,000	2.00
800	2.75	5,200	1.99
900	2.60	5,500	1.97
1,000	2.50	6,000	1.95
1,100	2.47	6,200	1.94
1,200	2.45	6,400	1.93
1,300	2.43	6,900	1.91
1,400	2.40	7,300	1.90
1,500	2.38	7,500	1.89
1,600	2.36	8,100	1.87
1,700	2.34	8,400	1.86
1,750	2.33	9,100	1.84
1,800	2.32	9,600	1.83
1,850	2.31	10,000	1.82
1,900	2.30	11,500	1.80
2,000	2.29	13,000	1.78
2,150	2.27	14,500	1.76
2,225	2.25	15,000	1.75
2,300	2.24	16,000	1.74
2,375	2.23	16,700	1.73
2,425	2.22	17,400	1.72
2,500	2.21	18,000	1.71
2,600	2.20	18,900	1.70
2,625	2.19	19,800	1.69
2,675	2.18	21,500	1.68
2,775	2.17	22,600	1.67
2,850	2.16	25,000	1.65
3,000	2.14	26,500	1.64
3,100	2.13	28,000	1.63
3,200	2.12	32,000	1.61
3,500	2.10	36,000	1.59
3,600	2.09	38,000	1.58
3,700	2.08	42,000	1.57
3,800	2.07	49,000	1.55
3,900	2.06	54,000	1.54
4,000	2.05	60,000	1.53
4,200	2.04	70,000	1.52
4,400	2.03	90,000	1.51
4,600	2.02	100,000+	1.50

***Based on formula:** **Peak Factor = $6.2945 \times (pop)^{-0.1342}$**
(Holmes & Narver, 1960)

FIGURE 1-1

APPENDIX C

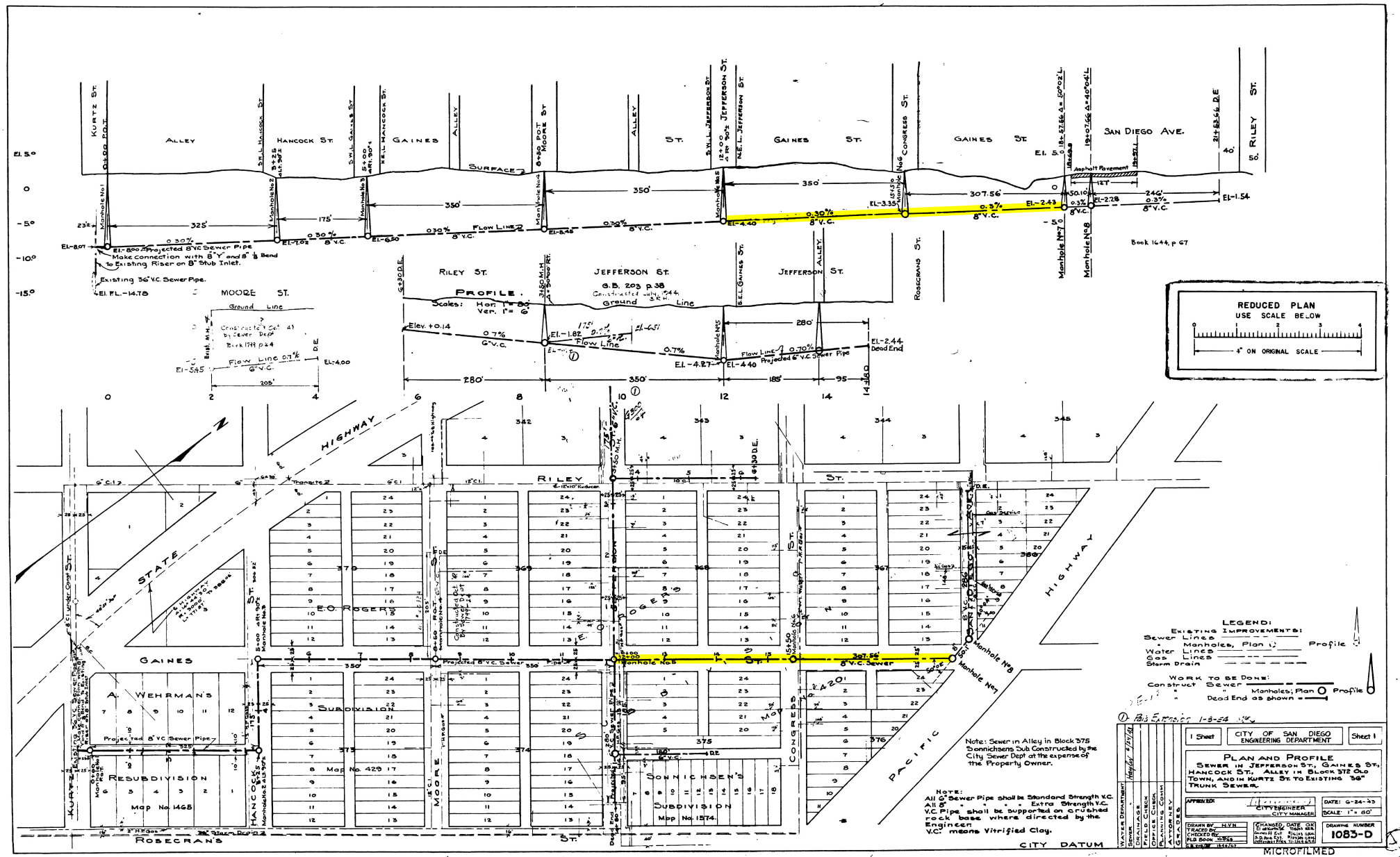
PROJECT FIXTURE UNIT CALCULATION

	STUDIO		48	JUNIOR		60	1 BED		53	2 BED		62	TOTAL UNITS 223
	QUANTITY	WFU	TOTAL	QUANTITY	WFU	TOTAL	QUANTITY	WFU	TOTAL	QUANTITY	WFU	TOTAL	
CLOTHES WASHER	1	4	4	1	4	4	1	4	4	1	4	4	
TUB/SHOWER	1	4	4	1	4	4	1	4	4	2	4	8	
KITCHEN SINK	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	
DISHWASHER	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	1	1.5	1.5	
LAVATORY	1	1	1	1	1	1	1	1	1	2	1	2	
WATER CLOSET	1	2.5	2.5	1	2.5	2.5	1	2.5	2.5	2	2.5	5	
	288 FIXTURES		**696 WFU**	**360 FIXTURES**		**870 WFU**	**318 FIXTURES**		**769 WFU**	**558 FIXTURES**		**1364 WFU**	

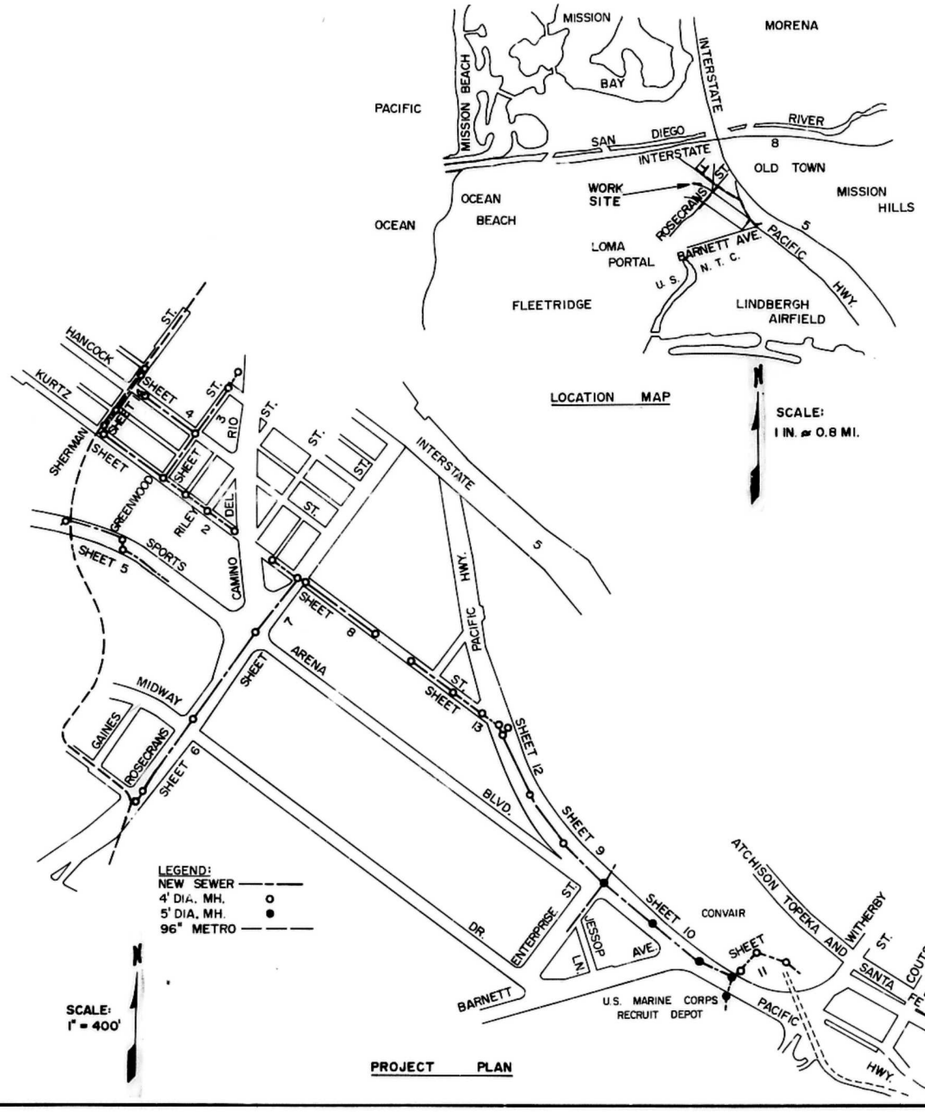
1524 FIXTURES
3699 WFU

APPENDIX D

AS-BUILT DRAWINGS


PROFILE
Scales: Hor. 1" = 50'
Ver. 1" = 5
KURTZ ST.
ALLEY
HANCOCK ST.
GAINES
ALLEY
MOORE ST.
ST.
JEFFERSON ST.
GAINES ST.
GAINES ST.
SAN DIEGO AVE.
S. RILEY ST.
RILEY ST.
JEFFERSON ST.
ALLEY
ROSECRANS ST.
Ground Line
Flow Line
Projected 8" V.C. Sewer Pipe
Make connection with 8" Y and 8" 1/8 Bend to Existing Riser on 8" Stub Inlet.
Existing 36" V.C. Sewer Pipe.
Manhole No 1
Manhole No 2
Manhole No 3
Manhole No 4
Manhole No 5
Manhole No 6
Manhole No 7
Manhole No 8
Book 1644, p 67
REDUCED PLAN
USE SCALE BELOW
4" ON ORIGINAL SCALE
HIGHWAY
STATE
RILEY ST.
GAINES
E.O. ROGERS SUBDIVISION
A. WEHRMAN'S SUBDIVISION
RESUBDIVISION
Map No. 1468
Map No. 429
SONNICHSEN'S SUBDIVISION
Map No. 1574
CONGRESS
PACIFIC HIGHWAY
ROSECRANS ST.
Projected 8" V.C. Sewer
8" V.C. Sewer
LEGEND:
EXISTING IMPROVEMENTS:
Sewer Lines
Manholes, Plan
Profile
Water Lines
Gas Lines
Storm Drain
WORK TO BE DONE:
Construct Sewer
Manholes; Plan
Profile
Dead End as shown
Note: Sewer in Alley in Block 375 Sonnichsens Sub Constructed by the City Sewer Dept at the expense of the Property Owner.
Note:
All 6" Sewer Pipe shall be Standard Strength V.C.
All 8" " " " Extra Strength V.C.
V.C. Pipe shall be supported on crushed rock base where directed by the Engineer.
V.C. means Vitrified Clay.
CITY DATUM
1 Sheet
CITY OF SAN DIEGO
ENGINEERING DEPARTMENT
Sheet 1
PLAN AND PROFILE
SEWER IN JEFFERSON ST., GAINES ST., HANCOCK ST., ALLEY IN BLOCK 372 OLD TOWN, AND IN KURTZ ST. TO EXISTING 36" TRUNK SEWER.
APPROVED:
CITY ENGINEER
CITY MANAGER
DATE: 6-24-43
SCALE: 1" = 80'
DRAWN BY H.V.N.
T. TRACED BY
CHECKED BY
P.L.D. BOOK
DRAWING NUMBER
1083-D
WATER DEPARTMENT
SEWER
DRAINAGE
FIELD CHECK
PLANNING COMM.
ATTORNEY
GRADES
MICROFILMED
JUN 4 v 1969

MIDWAY DRIVE AREA SEWER SYSTEM



SPECIFICATIONS AND DRAWINGS:
CITY OF SAN DIEGO SPECIAL SPECIFICATION NO. 4568

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, FILED MAY 10, 1976, DOC. NO. 755163

CITY OF SAN DIEGO STANDARD DRAWINGS, FILED MARCH 21, 1977, DOC. NO. 758672

CITY OF SAN DIEGO STANDARD SPECIAL PROVISIONS, FILED FEB. 25, 1977, DOC. NO. 758403

DATUM: MEAN SEA LEVEL

MAJOR AND SECONDARY STREETS:
PACIFIC HIGHWAY, MIDWAY DRIVE, SPORTS ARENA BOULEVARD, KURTZ STREET, ROSECRANS STREET (NLY. OF SPORTS AREA BLVD.) ROSECRANS STREET (SLY. OF SPORTS ARENA BLVD.—IS A STATE HIGHWAY)

SEWER PIPE:
ONLY VITRIFIED CLAY PIPE MAY BE USED WHERE CONCRETE CRADLE IS NECESSARY. 15 & 24-INCH PIPE SHALL BE VITRIFIED CLAY. 12-INCH PIPE AND SMALLER MAY BE VITRIFIED CLAY OR POLYVINYL CHLORIDE.

TRAFFIC REQUIREMENTS:
STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, DATE 1976, SECTIONS 7-10.1 THROUGH 7-10.4.

REFER TO THE SPECIAL PROVISIONS FOR TRAFFIC REQUIREMENT DETAILS.

GENERAL NOTE:
THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AGENCIES 48 HOURS PRIOR TO STARTING WORK NEAR THEIR FACILITIES AND SHALL COOPERATE WITH THEM:

SAN DIEGO GAS & ELECTRIC CO. PHONE	235-6323
PACIFIC TEL. & TEL. CO.	298-0595
CITY WATER & SEWER	236-5600
CITY TRAFFIC SIGNALS & SAFETY LIGHTING	236-5505
CITY TRAFFIC ENGINEER	236-6040
CAL TRANS TRAFFIC OPERATIONS	294-5253

EL. UNK. MEANS ELEVATION UNKNOWN

WORK TO BE DONE SCHEDULE

IMPROVEMENT	REGIONAL STANDARD DRAWING	LEGEND
V.C. SEWER MAIN	S-4, G-25	10"
MANHOLE - 4' DIAMETER (SEE DETAIL, SHEET 3)	M-1, S-1, M-3	MH. NO. 37
MANHOLE - 5' DIAMETER	M-1, M-3, S-2	MH. NO. 23
HOUSE CONNECTION SEWER	S-13	V.C. NEW SEWER MAIN PROPERTY LINE S L
JOIN HOUSE CONNECTION SEWER	S-13	S C
HOUSE SEWER	S-13	S H
CONCRETE CRADLE	S-6	
MANHOLE TO BE ABANDONED		
~~TUNNEL~~ ~~OR~~ JACK		
TRENCH SHORING		
ADDITIONAL BEDDING		
RECHANNEL EXISTING MANHOLE		
CONNECT SEWER MAIN TO 96" SEWER MAIN		
MONUMENT (1)	M-21-T	
IMPORTED BACKFILL		

CITY CONTRACT C.I.P. 43-109 (9)

PLANS FOR THE CONSTRUCTION OF
MIDWAY DRIVE AREA
SEWER SYSTEM

CITY OF SAN DIEGO, CALIFORNIA
UTILITIES DEPARTMENT
SHEET 1 OF 14 SHEETS

E.W.O. 147077
U.W.O. 61631

UTILITIES DIRECTOR — DATE 5/1/79 — ENGINEERING SUPERINTENDENT

DESCRIPTION	BY	APPROVED	FILED
ORIGINAL	C.M.		
AS BUILT	C.M.		
RE AS BUILT	C.M.		

DESIGN ENGINEER

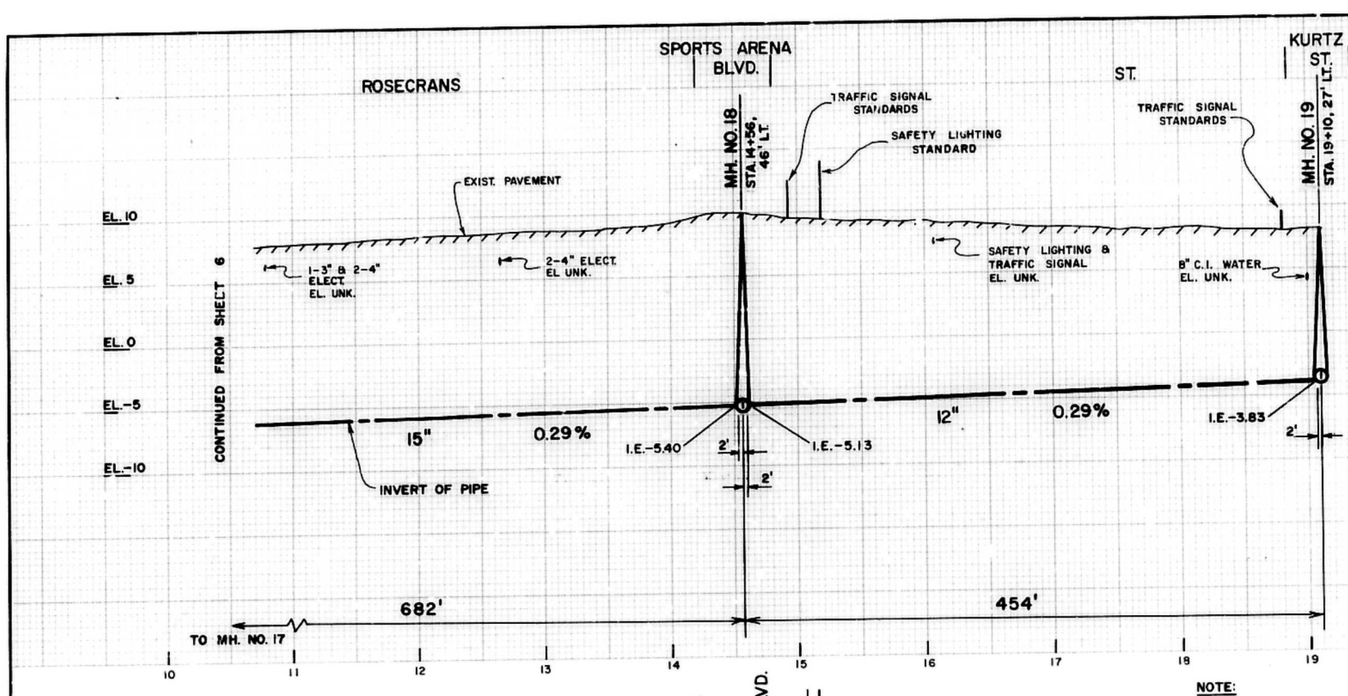
CONSTRUCTION RECORD
CONTROL CERTIFICATION
210-1705
LAMBERT COORDINATES
CONTRACTOR: MASANOVICH — DATE STARTED 9-24-79
INSPECTOR: BENJAMIN BATTLE — DATE COMPLETED 12-24-80
CONNECTIONS BY:

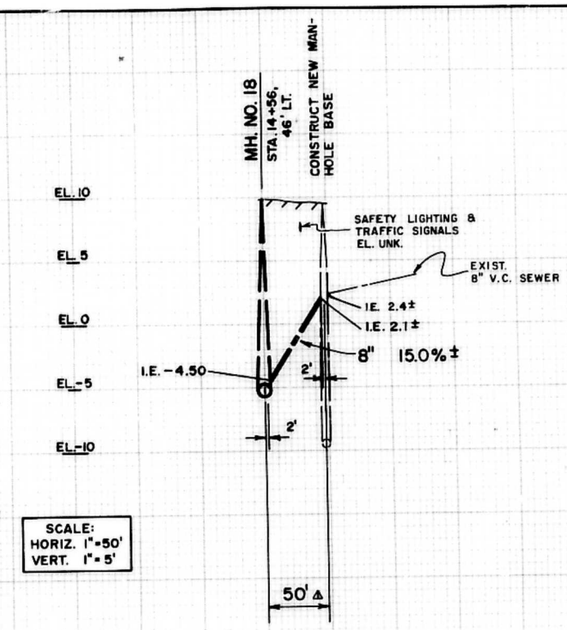
17479-I-D

"AS BUILT"

AS BUILT

0 1 2 3 4 IN

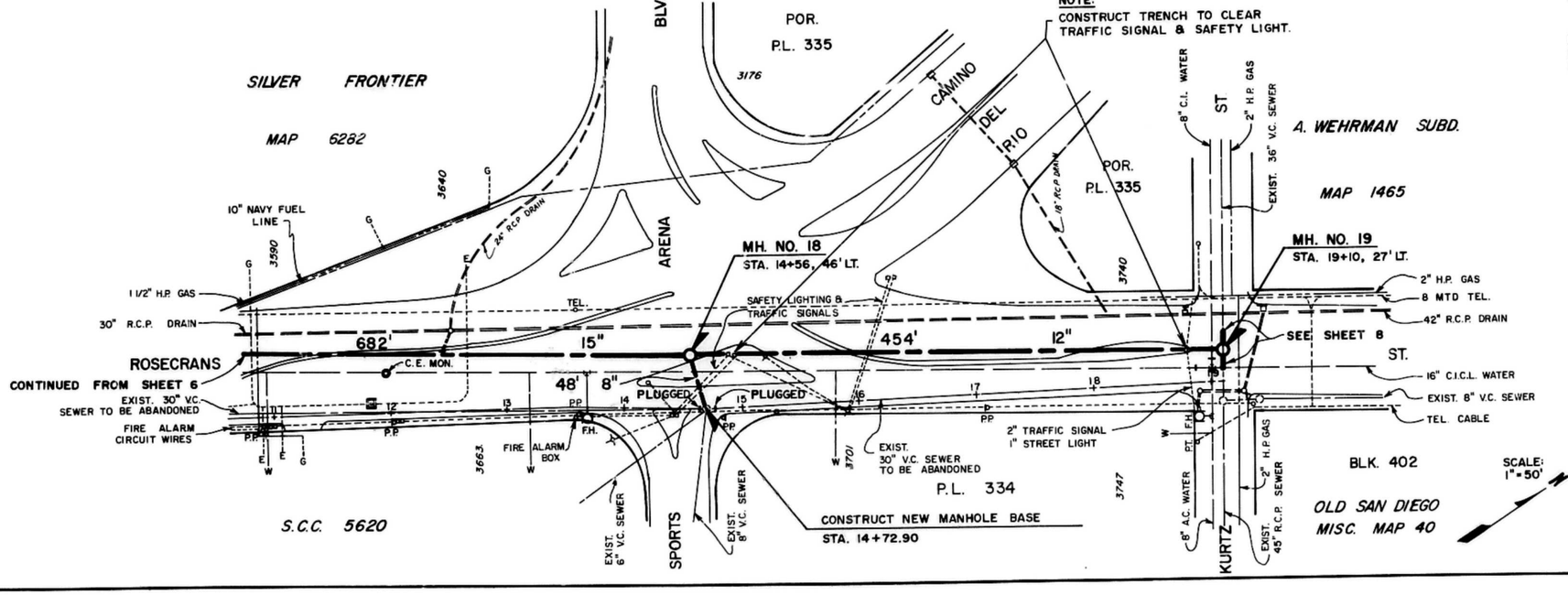




SCALE:
HORIZ. 1"=50'
VERT. 1"=5'

RETIREMENT:
840 FT 30" V.C. 973-D, 974-D 1942

BENCH MARK: (M.S.L.)
E.B.P., GAINES ST. & KURTZ ST. AT CAMINO DEL RIO.
ELEV. 8.771



NOTE:
CONSTRUCT TRENCH TO CLEAR TRAFFIC SIGNAL & SAFETY LIGHT.

SCALE:
1"=50'

MIDWAY DRIVE AREA SEWER SYSTEM
8", 12" & 15" SEWER MAINS
ROSECRANS STREET:
KURTZ ST. TO 840 FT SW'LY

CITY OF SAN DIEGO, CALIFORNIA
UTILITIES DEPARTMENT
SHEET 7 OF 14 SHEETS

E.W.O. 147077
U.W.O. 61631

UTILITIES DIRECTOR — DATE 5/1/79
ENGINEERING SUPERINTENDENT
DESIGN ENGINEER

DESCRIPTION	BY	APPROVED	FILMED
ORIGINAL	C.M.		
AS BUILT	C.M.		

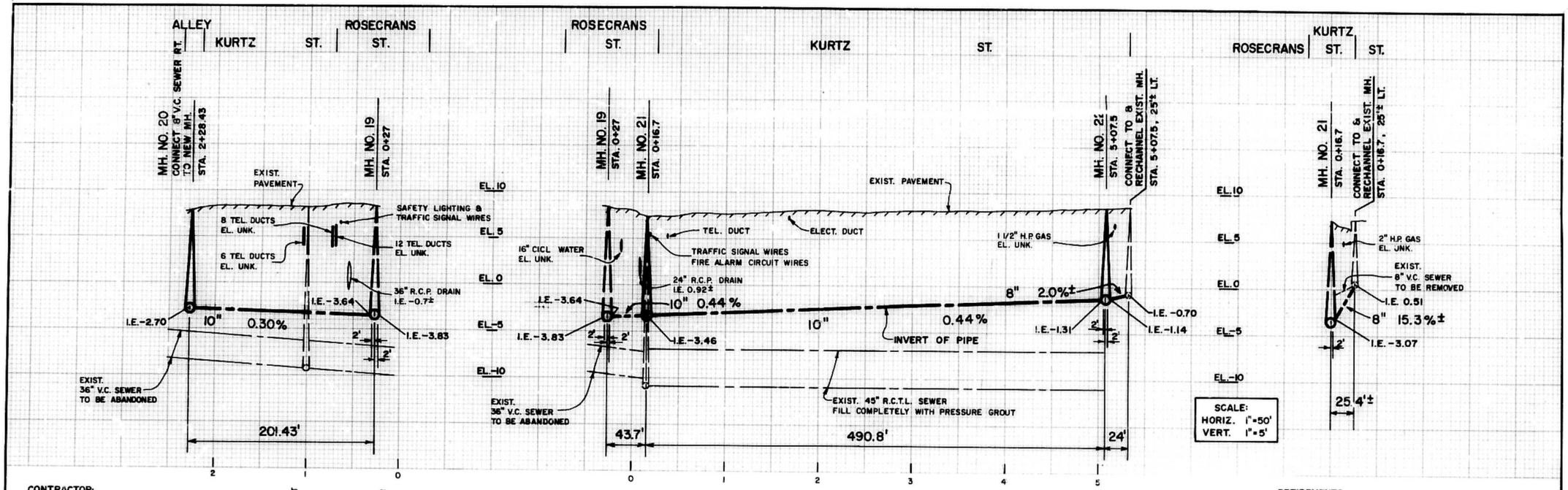
CONSTRUCTION RECORD

CONTROL CERTIFICATION
212-1705
LAMBERT COORDINATES

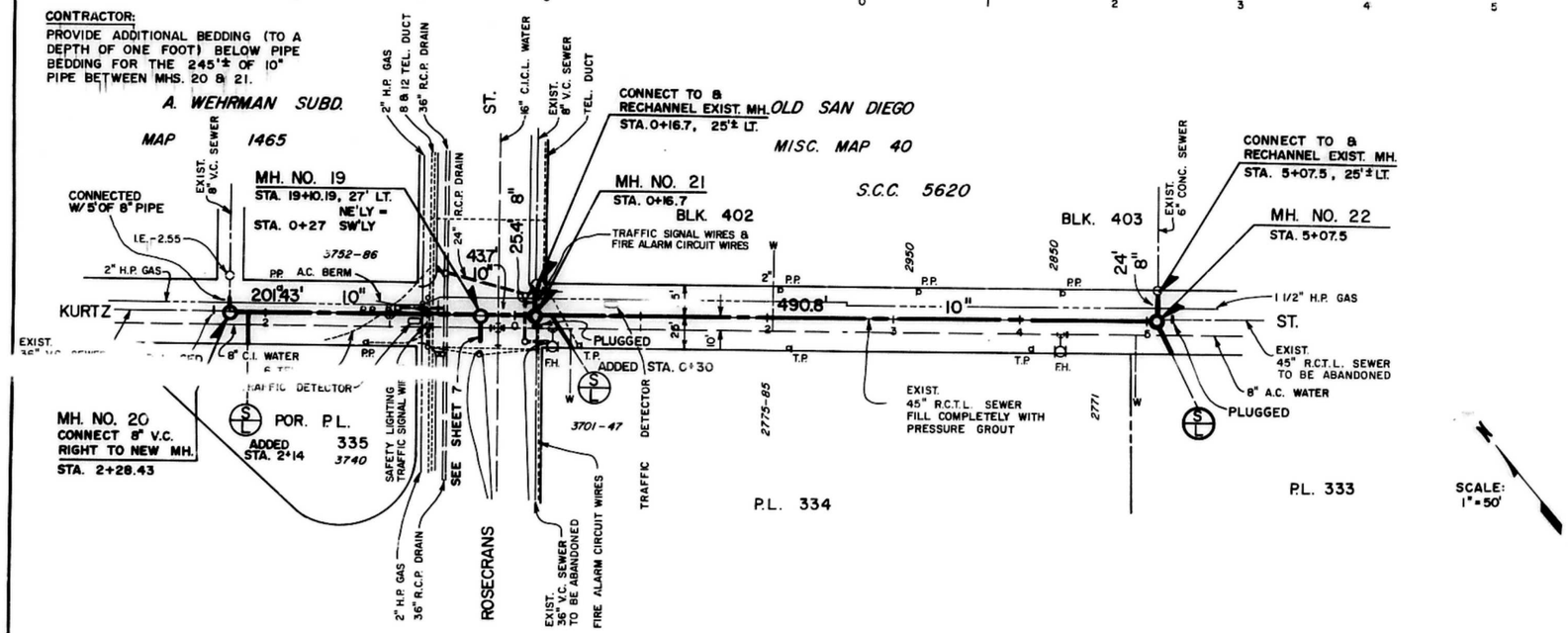
CONTRACTOR: MASANOVICH DATE STARTED 9-24-79
INSPECTOR: BENJAMIN-RASLIS DATE COMPLETED 12-24-80
CONNECTIONS BY:

17479-7-D

AS BUILT



CONTRACTOR:
PROVIDE ADDITIONAL BEDDING (TO A DEPTH OF ONE FOOT) BELOW PIPE BEDDING FOR THE 245'± OF 10" PIPE BETWEEN MHS. 20 & 21.



RETIREMENTS:

25'	8" V.C.	6312-L	1943
780'	45" R.C.T.L.	973-D	1942
529'	36" V.C.	1057-D	1943

BENCH MARK: (M.S.L.)
E.B.P., GAINES ST. & KURTZ ST. AT CAMINO DEL RIO
ELEV. 8.771

FIELD NOTES:

WENTWORTH	212-1704	1-18-78	147077	6 SHTS.
WENTWORTH	212-1704	1-18-78	147077	4 SHTS.

MIDWAY DRIVE AREA SEWER SYSTEM
8" & 10" SEWER MAIN
KURTZ ST.:- 200 FT. NW OF ROSECRANS ST. TO 535 FT. SE OF ROSECRANS ST.

CITY OF SAN DIEGO, CALIFORNIA
UTILITIES DEPARTMENT
SHEET 8 OF 14 SHEETS

E.W.O. 147077
U.W.O. 61631.

UTILITIES DIRECTOR — DATE 5/1/79 — ENGINEERING SUPERINTENDENT

DESCRIPTION	BY	APPROVED	FILMED
ORIGINAL	C.M.		
AS BUILT	C.M.		

DESIGN ENGINEER

CONSTRUCTION RECORD

CONTROL CERTIFICATION
212-1705
LAMBERT COORDINATES

CONTRACTOR: MASANOVICH — DATE STARTED 9-24-79
INSPECTOR: BENJAMIN-RASULIS — DATE COMPLETED 12-24-80
CORRECTIONS BY:

17479-8-D

AS BUILT

APPENDIX E

SEWER CAPACITY ANALYSIS

DATE: 4/10/2023

JOB NUMBER: 574-023

SEWER STUDY SUMMARY

FOR: Viewpoint Old Town - Existing (Sewer Flow Monitoring)

BY: Dexter Wilson Engineering, Inc.

SHT 1 OF 1

REFER TO PLAN SHEET:

LINE	FROM	TO	LENGTH (ft)	POP. PER D.U.	IN-LINE EDUs	POPULATION SERVED		SEWAGE PER CAPITA/DAY (gpd/person)	AVG. DRY WEATHER FLOW (gpd)	PEAKING FACTOR	PEAK FLOW (gpd)	PEAK FLOW (DESIGN FLOW)		LINE SIZE (inches)	DESIGN SLOPE (%)	DEPTH K' [1]	dn (feet)	dn/D[2]	C_a for Velocity[3]	VELOCITY (f.p.s.)	Comment
						IN-LINE	TOTAL					M.G.D.	C.F.S.								
	EX. 11	EX.9	95.0	3.5	3.1	11	11	80	877	4.000	3,509	0.004	0.005	6	0.70	0.005357	0.03771	0.075	0.0270	0.80	0.42 acres Commercial Space
	EX. 9	EX. 7	185.0	3.5	3.1	11	22	80	1,755	4.000	7,019	0.007	0.011	6	0.70	0.010715	0.05245	0.105	0.0439	0.99	0.42 acres Commercial Space
	EX.7	EX.5	350.0	3.5	29.4	103	125	80	9,985	4.000	39,939	0.040	0.062	8	0.30	0.043246	0.13753	0.206	0.1169	1.19	2.48 acres Commercial Space + 1.46 acre Perry's Café
	EX.5	EX.3	350.0	3.5	27.8	97	222	80	17,755	3.927	69,723	0.070	0.108	8	0.30	0.075495	0.18205	0.273	0.1738	1.40	3.72 acres Commetcial Space
	EX3	EX.2	175.0	3.5	14.2	50	272	80	21,745	3.761	81,775	0.082	0.127	8	0.30	0.088545	0.19752	0.296	0.1948	1.46	1.91 acres Commetcial Space
	EX.2	EX.20	325.0	3.5	11.4	40	312	80	24,941	3.627	90,472	0.090	0.140	8	0.30	0.097963	0.20816	0.312	0.2095	1.50	1.53 acres Commercial Space
	EX.20	EX.19	201.0	3.5	3.3	11	323	80	25,860	3.589	92,816	0.093	0.144	10	0.30	0.055429	0.19467	0.234	0.1395	1.48	0.44 acres Commercial Space
	EX.19	EX.18	454.0	3.5	91.6	321	644	80	51,511	2.880	148,357	0.148	0.230	12	0.29	0.055416	0.23358	0.234	0.1395	1.65	12.28 acres Commercial Space

Total EDUS	Total Pop.	Min Slope	Max dn/D
184	644	0.29	0.312

3.122338

DATE: 4/10/2023

JOB NUMBER: 574-023

SEWER STUDY SUMMARY

FOR: Viewpoint Old Town - Existing plus Proposed (Sewer Flow Monitoring)

BY: Dexter Wilson Engineering, Inc.

SHT 1 OF 1

REFER TO PLAN SHEET:

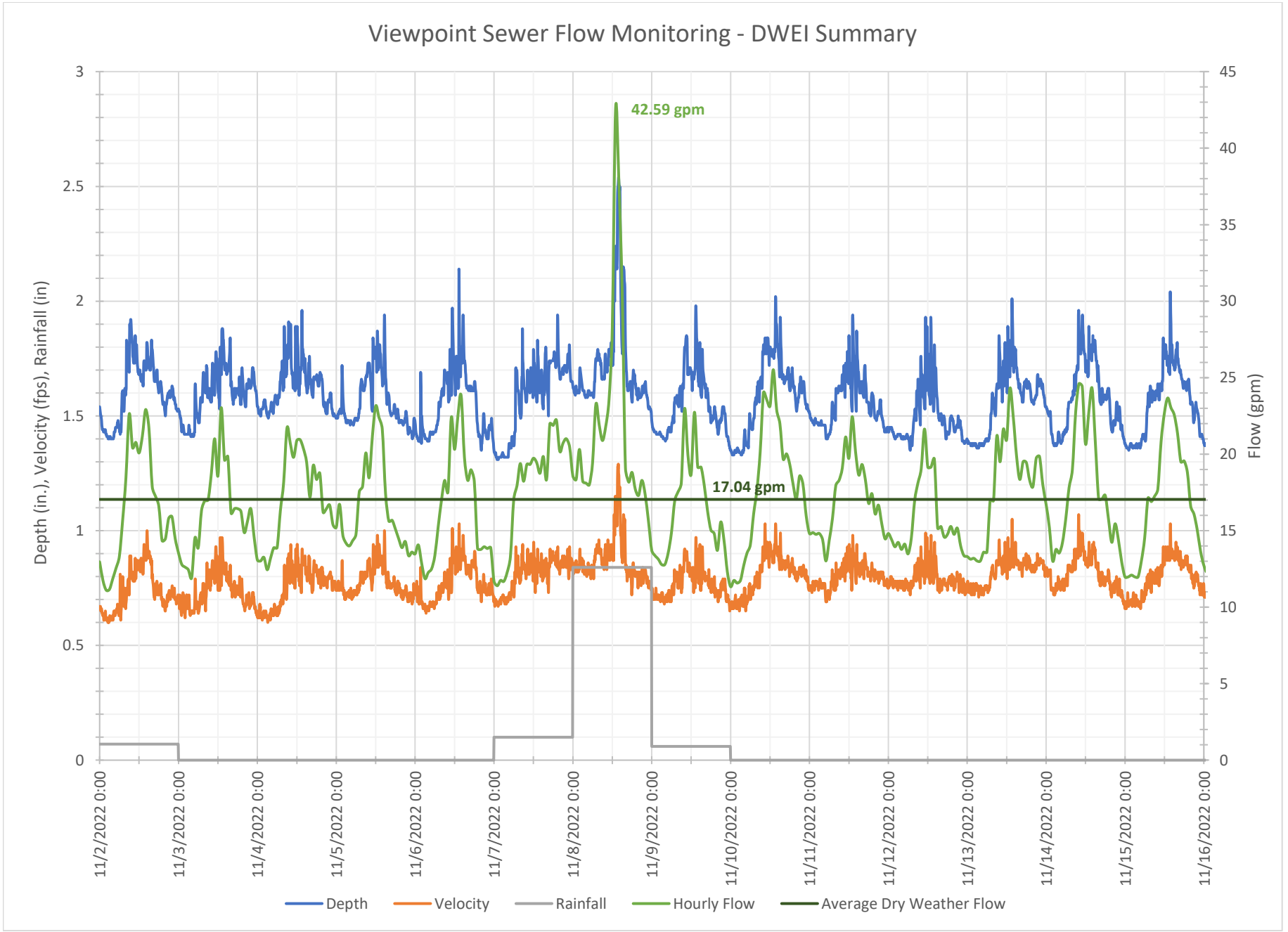
LINE	FROM	TO	LENGTH (ft)	POP. PER D.U.	IN-LINE EDUs	POPULATION SERVED		SEWAGE PER CAPITA/DAY (gpd/person)	AVG. DRY WEATHER FLOW (gpd)	PEAKING FACTOR	PEAK FLOW (gpd)	PEAK FLOW (DESIGN FLOW)		LINE SIZE (inches)	DESIGN SLOPE (%)	DEPTH K' [1]	dn (feet)	dn/D[2]	C_a for Velocity[3]	VELOCITY (f.p.s.)	Comment
						IN-LINE	TOTAL					M.G.D.	C.F.S.								
	1	2	60.0	3.5	185.0	648	648	80	51,800	2.877	149,033	0.149	0.231	8	0.45	0.131759	0.24329	0.365	0.2593	2.00	223 Residential Units (Count as 185 EDUs)
	2	3	260.0	3.5	0.0	0	648	80	51,800	2.877	149,033	0.149	0.231	8	0.45	0.131759	0.24329	0.365	0.2593	2.00	
	3	EX. 11	80.0	3.5	0.0	0	648	80	51,800	2.877	149,033	0.149	0.231	8	0.45	0.131759	0.24329	0.365	0.2593	2.00	
	EX. 11	EX.9	95.0	3.5	3.1	11	658	80	52,677	2.868	151,076	0.151	0.234	8	0.80	0.100174	0.21057	0.316	0.2128	2.47	0.42 acres Commercial Space
	EX. 9	EX. 7	185.0	3.5	3.1	11	669	80	53,555	2.859	153,102	0.153	0.237	8	0.80	0.101518	0.21204	0.318	0.2149	2.48	0.42 acres Commercial Space
	EX.7	EX.5	350.0	3.5	18.5	65	734	80	58,735	2.805	164,743	0.165	0.255	8	0.30	0.178382	0.28709	0.431	0.3235	1.77	2.48 acres Commercial Space
	EX.5	EX.3	350.0	3.5	27.8	97	831	80	66,506	2.703	179,766	0.180	0.278	8	0.30	0.194649	0.30153	0.452	0.3451	1.81	3.72 acres Commercial Space
	EX3	EX.2	175.0	3.5	14.2	50	881	80	70,495	2.628	185,277	0.185	0.287	8	0.30	0.200616	0.30677	0.460	0.3529	1.83	1.91 acres Commetcial Space
	EX.2	EX.20	175.0	3.5	11.4	40	921	80	73,691	2.579	190,039	0.190	0.294	8	0.30	0.205773	0.31123	0.467	0.3595	1.84	1.53 acres Commercial Space
	EX.20	EX.19	175.0	3.5	3.3	11	933	80	74,610	2.567	191,552	0.192	0.296	10	0.30	0.114394	0.28215	0.339	0.2342	1.82	0.44 acres Commercial Space
	EX.19	EX.18	175.0	3.5	91.6	321	1253	80	100,262	2.500	250,654	0.251	0.388	12	0.29	0.093628	0.30496	0.305	0.2028	1.91	12.28 acres Commercial Space

Total EDUS	Total Pop.	Min Slope	Max dn/D
358	1,253	0.29	0.467

Actual Sewer Generation Rate Calculation		
ADWF At Manhole 20	24941	gpd
Upstream Commercial Area	11.94	acre
Actual Sewer Generation Rate	2088.861	gpd/acre
Sewage Per Capita/Day	80.000	gpcpd
Equivalent Population/acre	26.111	ppl/acre
EDU/acre	7.46	EDUs

APPENDIX F

SEWER FLOW TEST MONITORING ANAYLSIS


Viewpoint Sewer Flow Monitoring - DWEI Summary
42.59 gpm
17.04 gpm
Depth (in.), Velocity (fps), Rainfall (in)
Flow (gpm)
3
2.5
2
1.5
1
0.5
0
45
40
35
30
25
20
15
10
5
0
11/2/2022 0:00
11/3/2022 0:00
11/4/2022 0:00
11/5/2022 0:00
11/6/2022 0:00
11/7/2022 0:00
11/8/2022 0:00
11/9/2022 0:00
11/10/2022 0:00
11/11/2022 0:00
11/12/2022 0:00
11/13/2022 0:00
11/14/2022 0:00
11/15/2022 0:00
11/16/2022 0:00
Depth
Velocity
Rainfall
Hourly Flow
Average Dry Weather Flow

Hancock and Kurtz Sewer Flow Monitoring, San Diego, CA 2022

Final Report Submitted to **PASCO LARET SUITER & ASSOCIATES**
December 1, 2022

ADS ENVIRONMENTAL SERVICES

340 The Bridge Street, Suite 204
Huntsville, AL 35806

800-633-7246
www.adsenv.com

Hancock and Kurtz Sewer Flow Monitoring, San Diego, CA 2022

Prepared For:

Chase Blood, P.E.
PASCO LARET SUITER & ASSOCIATES
1911 San Diego Ave Suite 100
San Diego, CA 92110

Prepared By:

ADS, LLC
4820 Mercury Street Suite C
San Diego, CA 92111

December 1, 2022

Chase Blood, P.E.
PASCO LARET SUITER & ASSOCIATES
1911 San Diego Ave Suite 100
San Diego, CA 92110

SUBJECT: Hancock and Kurtz Sewer Flow Monitoring, San Diego, CA 2022

Dear Mr. Blood,

ADS is pleased to submit the report for the Hancock and Kurtz Sewer Flow Monitoring completed on behalf of PASCO LARET SUITER & ASSOCIATES. The metering was conducted at one (1) location. The study was conducted during the period of Wednesday, 02 November 2022 to Wednesday, 16 November 2022.

The report contains depth, velocity, and quantity hydrographs as well as daily long tables for the metering period. An Excel file containing depth, quantity, and velocity entities for the monitoring location in 5-minute format has already been provided.

In addition, we would be happy to further explain any details about the report that may seem unclear. Should you have any questions or comments, you may contact the Project Manager, Paul Mitchell at 714-379-9778.

It has been our pleasure to be of service to you in the performance of this project. Thank you for choosing ADS products and services to meet your flow monitoring needs.

Sincerely,
ADS ENVIRONMENTAL SERVICES

Sean O'Donnell
Hydraulic Data Analyst

Scope and Methodology

Introduction

PASCO LARET SUITER & ASSOCIATES entered into an agreement with ADS Environmental Services to conduct flow monitoring at (1) one location in the San Diego, CA Sanitary Collection System. The study was scheduled for a period of (14) fourteen days. Once in place, the flow monitoring equipment was to be used to measure depth, velocity, and to quantify flows. The objective of this study was to confirm sanitary sewer flows in the monitored locations for planning purposes.

Project Scope

The scope of this study involved using a flow monitor to quantify wastewater flow at the designated locations for the study period. Specifically, the study included the following key components.

- Investigate the proposed flow-monitoring site for adequate hydraulic conditions
- Flow monitor installation
- Flow monitor confirmations and data collections
- Flow data analysis

Equipment installation was completed on November 1, 2022. The monitoring period began on November 2, 2022, and was completed on November 16, 2022. Upon completion of the study, equipment was removed from the system.

Flow Monitoring Equipment

The ***ADS FlowShark Triton*** monitor was selected for this project. This flow monitor is an area velocity flow monitor that uses both the Continuity and Manning's equations to measure flow.

The ADS FlowShark Triton monitor consists of data acquisition sensors and a battery-powered microcomputer. The microcomputer includes a processor unit, data storage, and an on-board clock to control and synchronize the sensor recordings. The monitor was programmed to acquire and store depth of flow and velocity readings at 5-minute intervals.

The FS Triton monitor features cross-checking using multiple technologies in each sensor for continuous running of comparisons and tolerances. The FS Triton monitor can support two (2) sets of sensors. The sensor option used for this project was:

The Peak Combo Sensor installed at the bottom of the pipe includes three types of data acquisition technologies.

The ***up looking ultrasonic depth*** uses sound waves from two independent transceivers to measure the distance from the sensor upward toward the flow surface; applying the speed of sound in the water and the temperature measured by sensor to calculate depth.

The ***pressure depth*** is calculated by using a piezo-resistive crystal to determine the difference between hydrostatic and atmospheric pressure. The pressure sensor is temperature compensated and vented to the atmosphere through a desiccant filled breather tube.

To obtain ***peak velocity*****,** the sensor sends an ultrasonic signal at an angle upward through the widest cross-section of the oncoming flow. The signal is reflected by suspended particles, air bubbles, or organic matter with a frequency shift proportional to the velocity of the reflecting objects. The reflected signal is received by the sensor and processed using digital spectrum analysis to determine the peak flow velocity.

Installation

Installation of flow monitoring equipment typically proceeds in four steps. First, the site is investigated for safety and to determine physical and hydraulic suitability for the flow monitoring equipment. Second, the equipment is physically installed at the selected location. Third, the monitor is tested to assure proper operation of the velocity and depth of flow sensors and verify that the monitor clock is operational and synchronized to the master computer clock. Fourth, the depth and velocity sensors are confirmed and line confirmations are performed.

In pipes up to 42 inches in diameter, the sensors were mounted on expandable stainless-steel rings, inserted at least a foot upstream into influent pipes and tightened against the inside walls of the pipes. Influent pipe installations reduce the influences of turbulence and backwater often caused by changes in channel geometry in manholes.

Data Collection, Confirmation, and Quality Assurance

Data collects were done remotely via wireless connect on a weekly basis. As needed, during the monitoring period, field crews visit each monitoring location to verify proper monitor operation and document field conditions. The following quality assurance steps are taken to assure the integrity of the collected data:

Measure power supplies: monitors were powered by dry cell battery packs. Voltages were recorded and battery packs replaced, as necessary. Separate batteries provided back-up power to memory allowing primary batteries to be replaced without loss of data.

Clock synchronization: Field crews synchronized monitor clocks to master clocks.

Confirm depth and velocity readings: Field crews descended into meter manholes to manually measure depths and velocities and compare the meter readings to confirm that they agreed. The site met the criteria for confirmation for depth and velocity unless noted otherwise in the site commentary section. They also measured silt levels, if any, in the inverts of the pipes. Silt areas were subtracted from flow areas to compute true areas of flow.

Confirm average velocities through cross-sectional velocity profiles: Since ADS velocity sensors measure peak velocity, field crews collected cross-sectional velocity profiles in order to develop a relationship between peak and average velocity in lines that meet the hydraulic criteria.

Upload and Review Data: Data collected from the monitors were uploaded and reviewed by a Data Analyst for completeness, outliers and deviations in the flow patterns, which indicate system anomalies or equipment failure.

Flow Quantification Methods

There are two main equations used to measure open channel flow: the ***Continuity Equation*** and the ***Manning Equation.*** The Continuity Equation, which is considered the most accurate, can be used if both depth of flow and velocity are available. In cases where velocity measurements are not available or not practical to obtain, the Manning Equation can be used to estimate velocity from the depth data based on certain physical characteristics of the pipe (i.e. the slope and roughness of the pipe being measured). However, the Manning equation assumes uniform, steady flow hydraulic conditions with non-varying roughness, which are typically invalid assumptions in most sanitary sewers. The Continuity Equation was used exclusively for this study.

Continuity Equation

The Continuity Equation states that the flow quantity (Q) is equal to the wetted area (A) multiplied by the average velocity (V) of the flow.

Q = A * V

This equation is applicable in a variety of conditions including backwater, surcharge, and reverse flow.

Data Analysis and Presentation

Data Analysis

A flow monitor is typically programmed to collect data at 5-minute intervals throughout the monitoring period. The monitor stores raw data consisting of (1) the ultrasonic depth, (2) the peak velocity and (3) the pressure depth. The data is imported into ADS's proprietary software and is examined by a data analyst to verify its integrity. The data analyst also reviews the daily field reports and site visit records to identify conditions that would affect the collected data.

Velocity profiles and the line confirmation data developed by the field personnel are reviewed by the data analyst to identify inconsistencies and verify data integrity. Velocity profiles are reviewed and an average to peak velocity ratio is calculated for the site. This ratio is used in converting the peak velocity measured by the sensor to the average velocity used in the Continuity equation. The data analyst selects which depth sensor entity will be used to calculate the final depth information. Silt levels present at each site visit are reviewed and representative silt levels established.

Occasionally the velocity sensor's performance may be compromised resulting in invalid readings sporadically during the monitoring period. This is generally caused by excessive debris (silt) blocking the sensor's crystals, shallow flows (~< 1") that may drop below the top of the sensor or very clear flows lacking the particles needed to measure rate. In order to use the Continuity equation to quantify the flow during these periods, a Data Analyst and/or Engineer will use the site's historical pipe curve (depth vs. velocity) data along with valid field confirmations to reconstitute and replace the false velocity recordings with expected velocity readings for a given historical depth along the curve.

Selections for the above parameters can be constant or can change during the monitoring period. While the data analysis process is described in a linear manner, it often requires an iterative approach to accurately complete.

Data Presentation

This type of flow monitoring project generates a large volume of data. To facilitate review of the data, results have been provided in graphical and tabular formats. The flow data is presented graphically in the form of scattergraphs and hydrographs. Hydrographs are based on 5-minute averaging. Tables are provided in daily average format. These tables show the flow rate for each day, along with the daily minimum and maximums, the times they were observed, the total daily flow, and total flow for the month (or monitoring period). The following explanation of terms may aid in interpretation of the flow data table and hydrograph.

DEPTH - Final calculated depth measurement (in inches)

QUANTITY - Final calculated flow rate (in MGD)

VELOCITY - Final calculated flow velocity (in feet per second)

REPORT TOTAL - Total volume of flow recorded for the indicated time period (in MG)

EX20

Site Commentary

SITE INFORMATION

Pipe	Elliptical (8 in H x 7.88 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Wednesday, 02 November 2022 to Wednesday, 16 November 2022**, along with observed minimum and maximum data, are provided in the following table.

This site functioned under normal conditions during the study period. No surcharge conditions were experienced at this location. An increase in depth and velocity due to a rain event was observed on November 8.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	1.58	0.79	0.025
Minimum	1.31	0.60	0.016
Maximum	2.74	1.33	0.089
Min Time	11/07/2022 1:20:00 AM	11/04/2022 3:10:00 AM	11/10/2022 3:50:00 AM
Max Time	11/14/2022 2:20:00 PM	11/14/2022 2:25:00 PM	11/14/2022 2:20:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the five minutes average.

DATA UPTIME

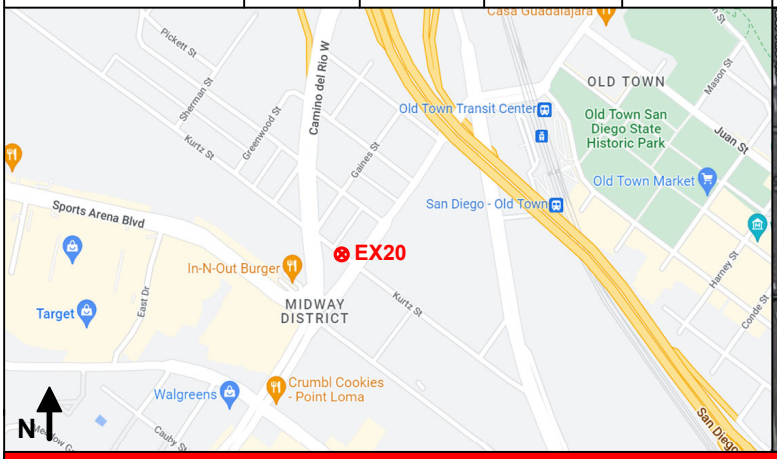
Data uptime observed during **Wednesday, 02 November 2022 to Wednesday, 16 November 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

ADS Site Report

Quality Form

Project Name:	SanDiego.PLSM.TFM.CA22	**City:** San Deigo	**Agency:** PLSA	**FM Initials:** JG	
Site Name:	EX20	**Install Date:** 11/01/2022	**Monitor Type**	Peak Doppler	
Address/Location:	3061-3053 Kurtz St.		**Monitor Model**	Triton +	
			Data Acquisition	Manual/Wireless Collect	
			Manhole ID	N/A	
Access: Drive	**Type of System:**	Sanitary [X]	Storm [ ]	Combined [ ]	**Pipe Height:** 8.00"
					Pipe Width: 7.88"



Investigation Information:

Date/Time of Investigation:	11/01/11 @0500
Site Hydraulics:	Low smooth flow
Upstream Input: (L/S, P/S)	--
Upstream Manhole:	Not Investigated
Downstream Manhole:	Not investigated
Depth of Flow:	1.38" +/- 0.25"
Range (Air DOF):	+/-
Peak Velocity:	.96 fps
Silt:	0 Inches

Manhole Information:

Manhole Depth:	180"
Manhole Material / Condition	Precast/Good
Pipe Material / Condition:	PVC/Good

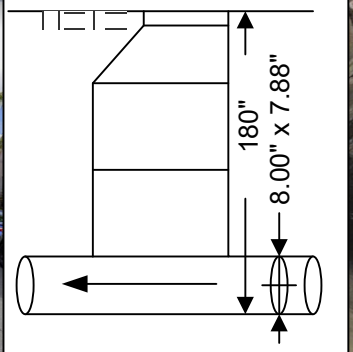
Land Use:	Residential [ ]	Commercial [X]	Industrial [ ]	Other [ ]

Oxygen: 20.9	**H2S:** 0	**LEL:** 0	**CO:** 0

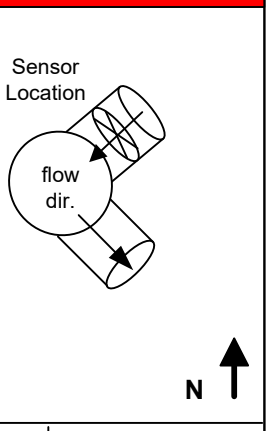
Safety Notes:

2 man crew required and one blower is to be operated at all times.

Other Information:



Cross Section



Plan

Installation Information		Backup	Yes	No	?	Distance
Installation Type:	Standard	Trunk	[ ]	[x]	[ ]	
Sensors Devices:	Ultrasonic/Velocity/Pressure	Lift / Pump Station	[ ]	[X]	[ ]	
Surcharge Height:	0	WWTP	[ ]	[X]	[ ]	
Rain Gauge Zone:		Other	[ ]	[X]	[ ]	

Additional Site Information / Comments:

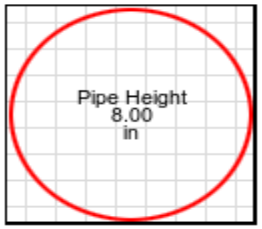
Standard Traffic Control with CA MUTCD TA-15 (Modified)

Hydrograph Report

EX20

Flow Monitor

EX20

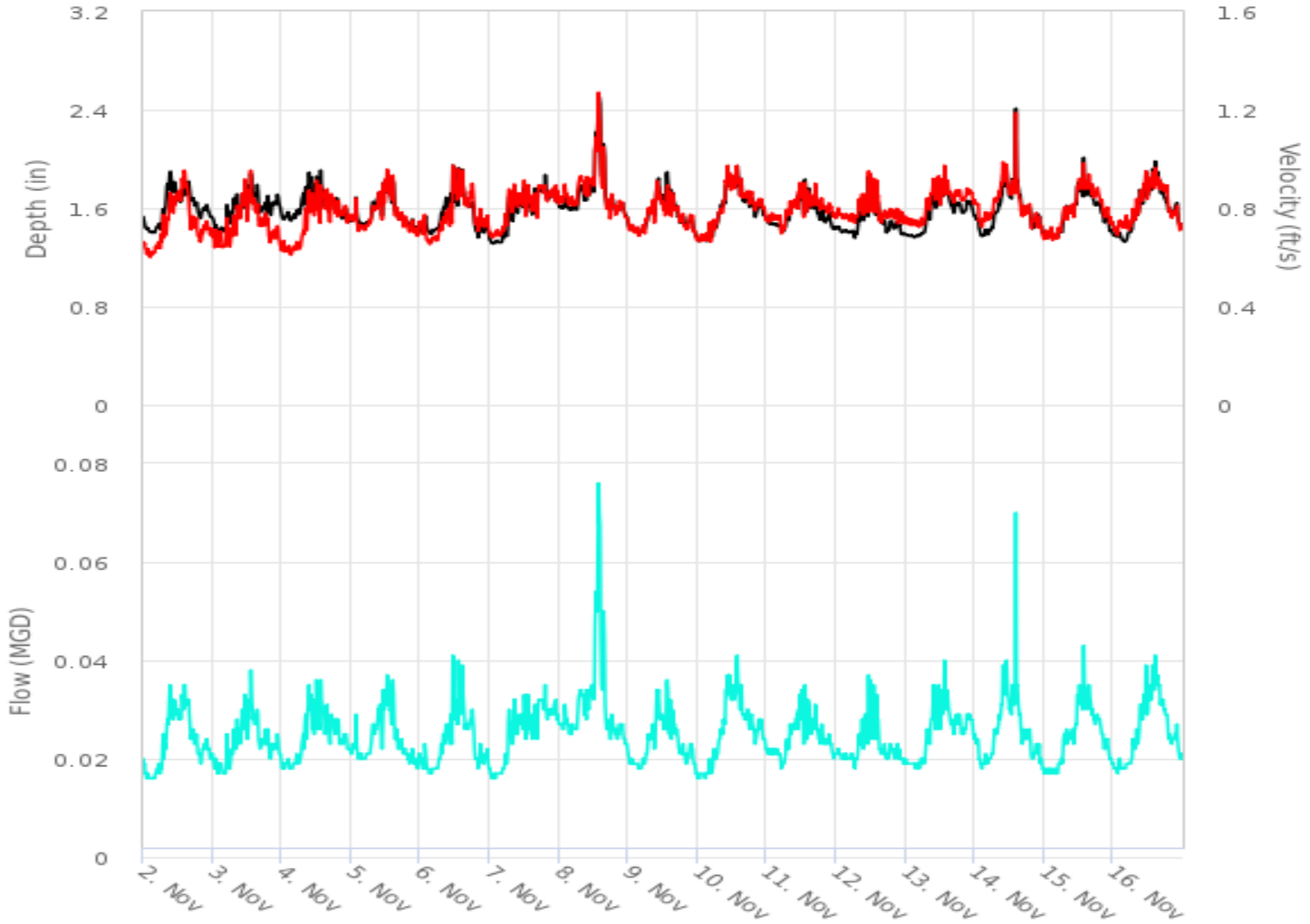


Report Period

11/02/2022
To
11/16/2022

Legend

- DFINAL
- QFINAL
- VFINAL



Scattergraph Report

EX20

Flow Monitor

EX20

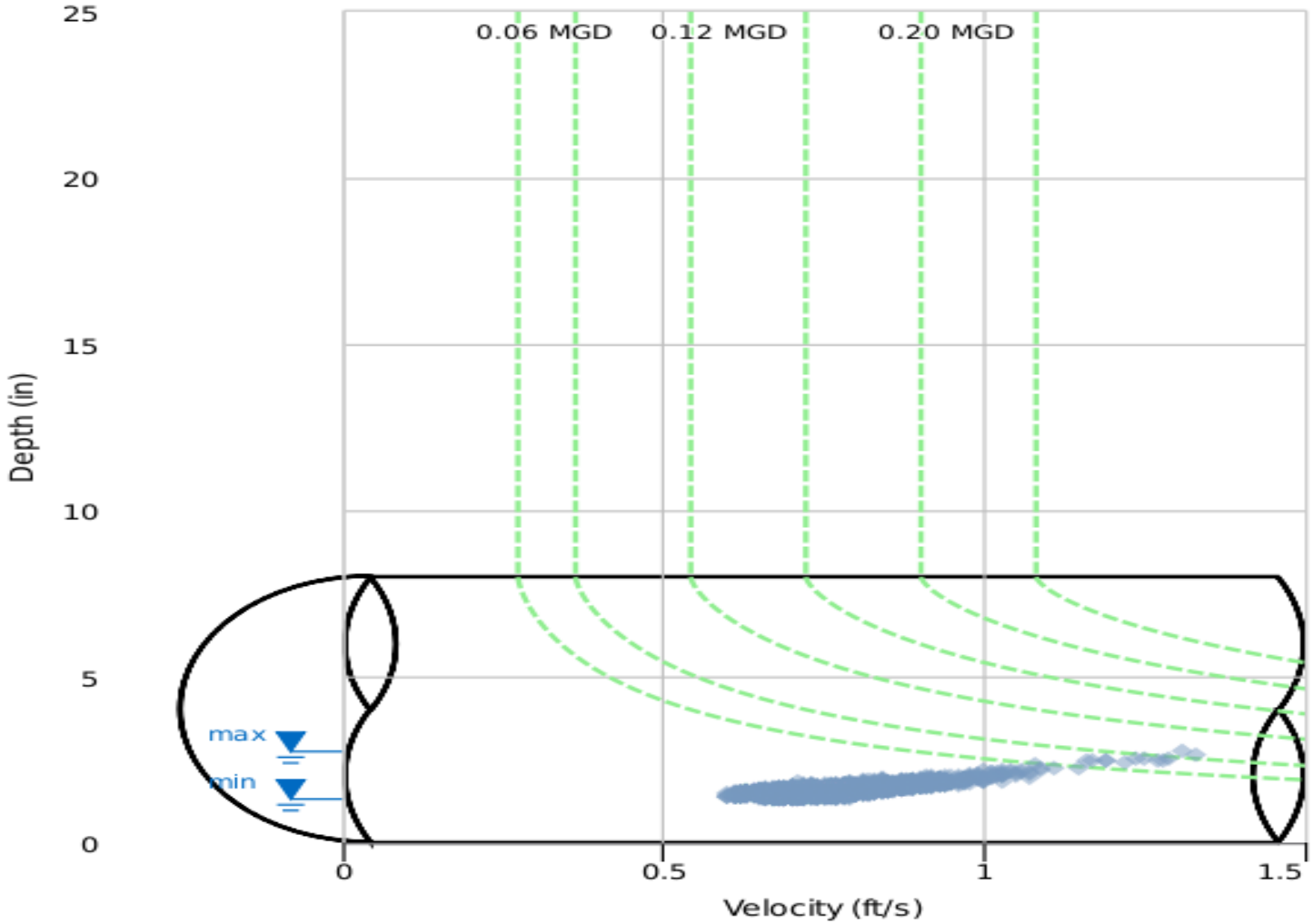
Pipe Height
8.00
in

Report Period

11/02/2022
To
11/16/2022

Legend

- DFINAL - VFINAL
- Iso-Q™
- Min-Max Depth



Daily Tabular Report

11/02/2022 00:00 - 11/16/2022 23:55
EX20Pipe: Elliptical (8 in H x 7.88 in W), Silt0.00 in

	DFINAL (in)					VFINAL (ft/s)					QFINAL (MGD - Total MG)						Rain (in)
Date	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total	Total
11/02/2022	02:35	1.40	09:25	1.92	1.60	02:30	0.60	14:25	1.00	0.74	01:15	0.016	14:25	0.038	0.024	0.024	-
11/03/2022	03:45	1.41	13:15	1.88	1.60	02:00	0.62	12:40	0.97	0.74	00:55	0.017	13:15	0.039	0.023	0.023	-
11/04/2022	03:20	1.49	13:35	1.96	1.63	03:10	0.60	12:05	0.94	0.75	03:10	0.017	13:35	0.039	0.025	0.025	-
11/05/2022	23:10	1.40	14:40	1.94	1.56	23:05	0.68	14:40	1.00	0.77	23:00	0.018	14:40	0.042	0.024	0.024	-
11/06/2022	20:10	1.35	13:20	2.14	1.55	03:20	0.64	13:25	1.03	0.77	03:05	0.017	13:20	0.048	0.024	0.024	-
11/07/2022	00:55	1.31	19:20	1.94	1.58	00:15	0.67	12:05	0.95	0.81	00:15	0.016	19:20	0.038	0.026	0.026	-
11/08/2022	23:55	1.50	13:55	2.54	1.72	17:55	0.72	13:50	1.29	0.87	17:55	0.022	13:50	0.077	0.031	0.031	-
11/09/2022	23:55	1.35	13:25	1.98	1.55	23:45	0.65	13:25	0.97	0.77	23:45	0.016	13:25	0.042	0.023	0.023	-
11/10/2022	00:30	1.33	13:40	2.02	1.59	02:40	0.65	10:30	1.03	0.80	00:00	0.016	13:40	0.046	0.026	0.026	-
11/11/2022	05:05	1.40	13:10	1.94	1.56	05:00	0.69	13:10	0.98	0.80	05:00	0.018	13:10	0.041	0.025	0.025	-
11/12/2022	06:40	1.35	11:20	1.93	1.49	06:40	0.72	11:20	0.99	0.79	06:35	0.018	11:20	0.041	0.023	0.023	-
11/13/2022	02:55	1.36	13:35	2.01	1.57	03:30	0.71	13:40	1.05	0.83	01:15	0.018	13:40	0.046	0.026	0.026	-
11/14/2022	02:25	1.37	14:20	2.74	1.58	23:55	0.67	14:25	1.33	0.81	23:55	0.017	14:20	0.089	0.026	0.026	-
11/15/2022	01:10	1.35	13:45	2.04	1.56	00:00	0.66	13:50	1.03	0.79	00:00	0.017	13:50	0.046	0.025	0.025	-
11/16/2022	03:50	1.32	14:35	2.05	1.59	01:15	0.68	13:40	1.01	0.81	01:10	0.017	13:40	0.045	0.026	0.026	-

11/02/2022 00:00 - 11/16/2022 23:55

	DFINAL (in)	VFINAL (ft/s)	QFINAL (MGD - Total MG)	Rain (in)
Total			0.374	
Average	1.58	0.79	0.025	

LEGEND

PROJECT BOUNDARY

EXISTING PUBLIC GRAVITY SEWER FACILITIES

PROPOSED PUBLIC GRAVITY SEWER FACILITIES

ANALYZED TRIBUTARY AREA BOUNDARY

EX.X COMPUTER MODEL MANHOLE NUMBER

N

0 250 FEET

INTERSTATE CALIFORNIA 5

SHERMAN ST

KURTZ ST

SPORTS ARENA BLVD

CAMINO DEL RIO W

JEFFERSON ST

GAINES ST

HANCOCK ST

ROSECRANS ST

PACIFIC HWY

TAYLOR ST

CONGRESS ST

EX.6" EX.6" EX.6" EX.8" EX.7 EX.9 EX.11 EX.5 EX.8" EX.8" EX.8" EX.3 EX.8" EX.8" EX.2 EX.8" EX.8" EX.20 EX.10" EX.19 EX.12" EX.15" EX.10" EX.6" EX.6" EX.7" EX.8" 8" 8" 8" 8" 1 2 3

EXHIBIT A

MANHOLE DIAGRAM

VIEWPOINT OLD TOWN

DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
(760) 438-4422