
SEWER CAPACITY MEMORANDUM

Terravita
Laguna Hills , CA

PREPARED FOR: Kingsbarn Capital & Development
PREPARED BY: Sue Williams, P.E., Fuscoe Engineering, Inc.
DATE: February 17, 2026

This memorandum summarizes the results of our review of the potential sanitary sewer infrastructure impacts, conducted for the Terravita project, located in the City of Laguna Hills. The purpose of this review is to compile and analyze sewer atlas maps and El Toro Water District (ETWD) criteria, and to evaluate and determine potential sewer-related impacts associated with the potential development of the Terravita project. This memorandum presents the findings of our evaluation.

The approximately 16-acre project site is located northeast of Mill Creek Drive, north of Ridge Route Drive, and west of Moulton Parkway in the City of Laguna Hills.

The site consists of several commercial and office buildings; including a coffee shop, a wellness center, a home-loan office, an employment-search office, among others. The proposed project would be a residential development that is anticipated to include attached single- and multi-family homes. Up to 480 residential units are proposed. The proposed development elements are presented as the Site Map and Summary Tables, included as Attachment 1.

The following is a summary of Fuscoe's findings.

I. Summary of Existing Sanitary Sewer Infrastructure

- a. El Toro Water District (ETWD) owns and operates the existing sanitary sewer infrastructure that accepts and conveys wastewater in the vicinity of the project site. The existing sewer atlas maps are included in Attachment 2.
- b. As shown on the sewer atlas maps (Attachment 2), there is an existing private sewer system that runs through the site, and discharges via an

- 8-inch ETWD lateral into an ETWD 15-inch sewer main in Ridge Route Road.
- c. Based on the ETWD Atlas Sewer Maps, the existing sewer main in Ridge Route Drive is a 15-inch-diameter line, which becomes a 24-inch line at Moulton Parkway.
- d. The proposed project would remove the existing onsite sewer infrastructure, and install a new onsite sewer system, which would discharge into existing 15-inch sewer in Ridge Route Drive via a new connection westerly of the existing 8-inch sewer lateral.
- e. Please see Attachment 2 for exhibits showing the existing public ETWD and private onsite sewer systems.

II. Capacity of Existing Sewer System

- a. El Toro Water District (ETWD) has provided design criteria for its public sewer systems. A copy of this criteria is included as Attachment 3.
- b. ETWD has established maximum peak depths as follows.
 - For piping 15” and smaller in diameter: max d/D = 0.5 (DWF)
 - For piping 18” and larger in diameter: max d/D = 0.75 (DWF)
 - All diameters: max d/D = 0.92 (WWF)
 - DWF: Dry-Weather Flow; WWF: Wet-Weather Flow
- c. Based on ETWD criteria, the 15-inch sewer pipelines will use d/D of 0.5 for DWF, and d/D of 0.92 for WWF.
- d. Flow-depth capacity calculations are included in Attachment 4.
- e. The flow-depth DWF and WWF capacities of the existing and 15-inch main in Ridge Route Drive are presented in Table 1, below.

Table 1 – Capacity of Existing Sewer Systems

Sewer	Location	Pipe Size	Slope (percent)	Design Criteria (DWF)	Design Criteria (WWF)	DWF Capacity (cfs)	WWF Capacity (cfs)
Sewer Main in Ridge Route Drive	Ridge Route Drive to Moulton Pkwy	15-inch	1.9%	50%-full	92%-full	4.452	9.556

III. Proposed Sewer Flows

- a. Sewer generation calculations are based on the number of residential units and the proposed unit mix, along with sewer generation rates.
- b. The sewer generation rates are included in Attachment 3, ETWD – Sewer Design Criteria.
- c. The unit mix for the proposed 480-unit development is included on the Site Map & Summary Tables, included as Attachment 1.
- d. The sewer generation calculations are included as Attachment 5.
- e. Table 2 presents the impacts of the proposed wastewater flow on the existing ETWD sewer system.
- f. The percentage of capacity used for the 15-inch sewer is 3%.

Table 2 – Project Impacts to Existing Sewer Systems

Sewer Pipe	Location	Pipe Size	Slope (%)	Design Criteria DWF	Design Criteria WWF	Proposed Sewer Generation DWF (cfs)	Proposed Sewer Generation WWF (cfs)	Percentage of DWF capacity (%) used by proposed project	Percentage of WWF capacity (%) used by proposed project
Sewer Main in Ridge Route Drive	Ridge Route Drive to Moulton Pkwy	15-inch	1.9%	½-full	92%-full	0.131	0.328	3%	3%

IV. Results

- a. The proposed project, which will consist of 480 residential units will drain through the site to the existing 15-inch ETWD sewer system in Ridge Route Drive, via a new lateral connection.
- b. Based on ETWD's criteria, the proposed wastewater flows would consist of about 3% of the existing 15-inch sewer pipeline's flow capacity.
- c. The existing 15-inch sewer drains easterly toward Moulton Parkway, where it becomes a 21-inch diameter sewer.
- d. Based on the small percentage of the existing pipeline's capacity that the proposed wastewater would impact, it is our opinion that the proposed project will not adversely affect the existing ETWD sewer system.

V. List of Attachments

- 1. Site Information & Summary Tables
- 2. ETWD Sewer Atlas Maps & As-Built Plans
- 3. ETWD – Sewer Design Criteria
- 4. Sewer Flow-Depth Calculations
- 5. Sewer Generation Calculations
- 6. Annotated Sewer Exhibit

If there are any questions or if further clarification on any aspect of this memorandum is needed, please do not hesitate to contact me.

Sincerely,

Sue Williams, P.E.
Technical Manager
Fusco Engineering, Inc
(714) 642-7510

ATTACHMENT 1

SITE MAP & SUMMARY TABLES



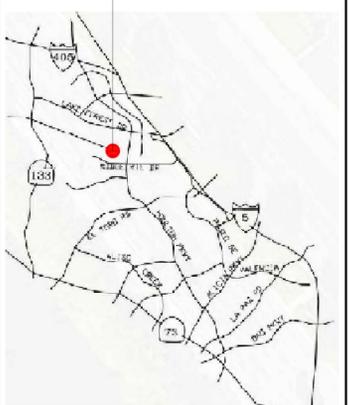
PROJECT DESCRIPTION:

A RESIDENTIAL DEVELOPMENT ON 18.51 ACRES NORTHEAST OF THE INTERSECTION OF RIDGE ROUTE DRIVE AND MILL CREEK ROAD IN THE CITY OF LAGUNA HILLS. THE PROJECT INCLUDES 259 ATTACHED SINGLE-FAMILY UNITS AND 221 MULTI-FAMILY UNITS. THE ATTACHED SINGLE-FAMILY UNITS INCLUDE "DUETS" (46 UNITS), "DUPLICES" (106 UNITS) AND TRIPLEXES (107 UNITS), ALL THREE STORIES IN HEIGHT. THE MULTI-FAMILY BUILDING IS FIVE STORIES IN HEIGHT WITH 221 APARTMENT UNITS WRAPPED AROUND A PARKING STRUCTURE. TWENTY FOUR OF THE TOTAL UNITS WILL BE RESTRICTED FOR VERY LOW INCOME HOUSEHOLDS. DENSITY BONUS LAW INCENTIVES AND WAIVERS ARE REQUESTED.

PROJECT SITE SUMMARY

Zoning:	Multi Family / Mixed Use		
Proposed Development:	Attached Residential		
Gross Area:	18.51		
Total Units:	480		
Gross Density:	25.9 DU/AC		
Product / Area Description:	Gross Area (ac)	Net Area (ac)	Total Unit
Lot 1: Single Family Attached (Duet)	3.23	2.52	46
Lot 2: Single Family Attached (Triplex)	4.60	3.64	107
Lot 3: Single Family Attached (Duplex)	6.47	5.49	106
Lot 4: Multifamily	2.33	2.33	221
Lot A: Corner Park	0.31	0.31	
Lot B: Rec Center	0.30	0.3	
Lot C: Shared Street	1.10	1.1	
Lot D: Shared Strret at Multi-Family	0.17	0.17	
Total	18.51	15.86	480

PROJECT LOCATION



VICINITY MAP

SETBACKS

	MXU Zoning	Proposed
	9-30.040	(Waiver)
Minimum Front setback	20'	10'
Minimum Rear setback	15'	4'
Minimum Side setback	5'	4'
Minimum Parking Lot setback	20'	5'
Minimum Building Separation	10'	6.5'

UNIT SUMMARY - LOTS 1, 2, & 3

LOT 1 - (UA SINGLE-FAMILY ATTACHED "A") Floor Plan Breakdown								
Floor Plan	Bd/Ba	SF (Net)	SF (Gross)	Garage SF	SF (Construction)	# Units	Total SF (Res)	Total SF (Construction)
Plan 1	4bd/3.5ba	2,121	2,328	414	2,742	23	48,783	63,066
Plan 2	4bd/3.5ba	2,738	3,054	407	3,461	23	62,974	79,603
LOT 1 TOTAL						46	111,757	142,669

LOT 2 TRIPLEX (UA SINGLE-FAMILY ATTACHED "B") Floor Plan Breakdown								
Floor Plan	SF (Net)	SF (Gross)	Garage SF	SF (Construction)	Total	Total SF (Res)	Total SF (Construction)	
Plan 1	2bd+den/3ba	1,820	2,010	423	2,433	29	52,780	70,557
Plan 2	3bd/3.5ba	1,965	2,151	438	2,589	29	56,985	75,081
Plan 3	3bd/3.5ba	2,130	2,316	437	2,753	29	61,770	79,837
LOT 2 TOTAL					87	171,535	225,475	

2-PLEX (UA SINGLE-FAMILY ATTACHED "B") Floor Plan Breakdown								
Floor Plan	SF (Net)	SF (Gross)	Garage SF	SF (Construction)	Total	Total SF (Res)	Total SF (Construction)	
Plan 2	3bd/3.5ba	1,965	2,151	438	2,589	10	19,650	25,890
Plan 3	3bd/3.5ba	2,130	2,316	437	2,753	10	21,300	27,530
LOT 2 TOTAL					20	40,950	53,420	

LOT 3 - (UA SINGLE-FAMILY ATTACHED "C") Floor Plan Breakdown								
Floor Plan	SF (Net)	SF (Gross)	Garage SF	SF (Construction)	Total	Total SF (Res)	Total SF (Construction)	
Plan 1	4bd/3.5ba	2,094	2,334	414	2,748	53	110,982	145,644
Plan 2	4bd/3.5ba	2,777	3,025	400	3,425	53	147,181	181,525
LOT 3 TOTAL					106	258,163	327,169	

PARKING SUMMARY (ATTACHED RESIDENTIAL) - LOTS: 1, 2 & 3

MIN. PARKING REQUIRED	Spaces required
Single-family, attached	518 spaces
2 covered spaces/unit	259 units
0.3 unassigned spaces/unit	259 units
	77.7 spaces
Total Required	596 spaces
PARKING PROVIDED	Spaces provided
LOT 1 - (SINGLE-FAMILY ATTACHED "A")	
Garage - std (Plan 2)	46 spaces
Garage - offset (Plan 1)	46 spaces
Driveway (assigned)	35 spaces
Open spaces (unassigned)	11 spaces
LOT 2 - (SINGLE-FAMILY ATTACHED "B")	
Garage - std	214 spaces
Driveway - std (assigned)	0 spaces
Open spaces (unassigned)	6 spaces
LOT 3 - (SINGLE-FAMILY ATTACHED "C")	
Garage - std (Plan 2)	106 spaces
Garage - offset (Plan 1)	106 spaces
Driveway (assigned)	53 spaces
Open spaces (unassigned)	17 spaces
	282 spaces
Total Provided	640 spaces

UNIT TYPE	NUMBER OF UNITS	RATIO	TOTAL STALLS
STUDIOS	25	1.00	25
1 BEDROOM	134	1.00	134
2 BEDROOM	82	1.50	63
TOTAL UNITS	221		262
TOTAL RESIDENTIAL STALLS		1.14 RATIO	262
USPS STALL PROVIDED			1
LEASING STALLS PROVIDED			3
TOTAL STALLS REQUIRED			266

USE TYPE	QUANTITY*	RATIO	TOTAL REQUIRED	NUMBER OF REQUIRED	
				STD.	VAN
ASSIGNED RESIDENTIAL	192	0.02	4	3	1
UNASSIGNED GUEST	0	0.05	0	0	0
UNASSIGNED LEASING	3	0.05	1	0	1
TOTAL ACCESSIBLE STALLS REQUIRED:			5	3	2

NOTE:
* THE ACCESSIBLE STALLS FOR EV ARE CALCULATED BELOW AND NOT INCLUDED IN THIS COUNT.
* (CALCULATED NUMBER OF STALLS = ALL PROVIDED - EV READY CHARGERS & EV READY RECEPTACLES)

EV CATEGORY	NUMBERS OF STALLS	RATIO	REQUIRED
ASSIGNED RESIDENTIAL STALLS			
EV READY - CHARGERS	378	10%	38
EV READY - RECEPTACLES		40%	150
RESIDENTIAL EV STALLS REQUIRED		50%	188
	TOTAL	1/25 - 8' AISLE*	STANDARD
	199	8	180
UNASSIGNED LEASING STALLS			
EV READY - CHARGERS	3	10%	1
EV READY - RECEPTACLES		40%	2
RESIDENTIAL EV STALLS REQUIRED		50%	3
	TOTAL	1/25 - 8' AISLE*	STANDARD
	3	1	2

NOTE:
* THE NUMBER OF EV CAPABLE SPACES REQUIRED MAY BE REDUCED BY A NUMBER EQUAL TO THE NUMBER OF EV CHARGERS INSTALLED OVER THE FIVE (5) PERCENT REQUIRED. CBC 4.108.4.2.2 EXCEPTION.
ALL ACCESSIBLE EVSE EQUIPMENT SHALL COMPLY WITH 11B.812. ALL ACCESSIBLE EV STALLS SHALL COMPLY WITH 11A AND 119A.

PARKING LEVEL	STALL COUNT PER USE							TOTAL STALLS PROVIDED
	STANDARD	USPS	GUEST ADA	STANDARD ADA	EV ADA R AISLE	EV CHARGERS	EV RECEPTACLES	
1	8	1	0	1	2	2	9	23
2	35			1	7	7	28	71
3	35			1	7	7	28	71
4	35			1	7	7	28	71
5	35			1	7	7	28	71
8	37				7	7	29	73
TOTALS	185	1	0	5	2	37	150	380

TOTAL STALLS PROVIDED 380

OPEN SPACE SUMMARY	REQUIRED (9-30.040)	PROVIDED (WAIVER REQUEST)
Public Open Space - LOT 1	1/4 of min. Open Space	Remove Requirements - None provided
Public Open Space - LOTS 2,3,4	1/4 of min. Open Space	Remove Requirements - None provided
Common Open Space - LOT 1	0.16 acre	Remove Requirements
Common Open Space - LOTS 2,3,4	0.66 acre	Remove Requirements (0.68 acre provided)
Private Open Space - LOT 1(Deck)	100 sf/unit	Varies - 200 sf min.
Private Open Space - LOT 2	100 sf/unit	Remove Requirements (84 sf deck provided)
Private Open Space - LOT 3	100 sf/unit	Varies - 250 sf min.
Private Open Space - LOT 4 (Deck)	100 sf/ground level unit - 50sf/unit above	Remove Requirements -(60 sf average prov'd)
COMMON LANDSCAPE PLANTING	Area	
LOT 1	11,356 sf	
LOTS 2, 3, 4, A,B & C	164,511 sf	
Total Common Landscape Planting Area	175,867 sf (4.04 acres)	
Landscape Coverage (4.04 ac / 18.51 ac) =	22%	

BUILDING SUMMARY								
UNIT TYPE	B LEVEL	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	PERCENTAGE	TOTAL
SI	1	4	5	5	5	5	11.31%	25
STUDIOS	1	4	5	5	5	5	11.31%	25
A1	4	9	10	12	12	12	24.70%	59
A1A	2	2	2	2	2	2	5.43%	12
A1A	0	1	4	4	4	4	7.69%	17
A2	1	1	0	0	0	0	0.90%	2
A3	0	8	9	9	9	9	19.91%	44
1 BEDS	7	21	25	27	27	27	60.43%	134
B2	1	9	11	11	11	10	23.98%	53
B3	0	0	1	1	1	1	1.81%	4
B4	0	1	1	1	1	1	2.24%	5
2 BEDS	1	10	13	13	13	12	28.05%	62
SUBTOTAL	9	35	43	45	45	44	100%	221

PROPERTY OWNERS:

KB RIDGE ROUTE, LLC
KB MILL CREEK, DST
KB SPECTRUM SUMMIT PLAZA, LLC
ADDRESS:
1645 VILLAGE CENTER CIRCLE, SUITE 200
LAS VEGAS, NV 89134

LAKEHILLS CORPORATE PARK OWNERS
ASSOCIATION, INC.,
ADDRESS:
C/O WORTH PROPERTY MANAGEMENT
P.O. BOX 449

TERRAVITA

LAGUNA HILLS | CA

KINGSBARN REALTY CAPITAL | 23-109

DATE 12 | 16 | 25



KINGSBARN
REALTY CAPITAL



KELEMEN
COMPANY

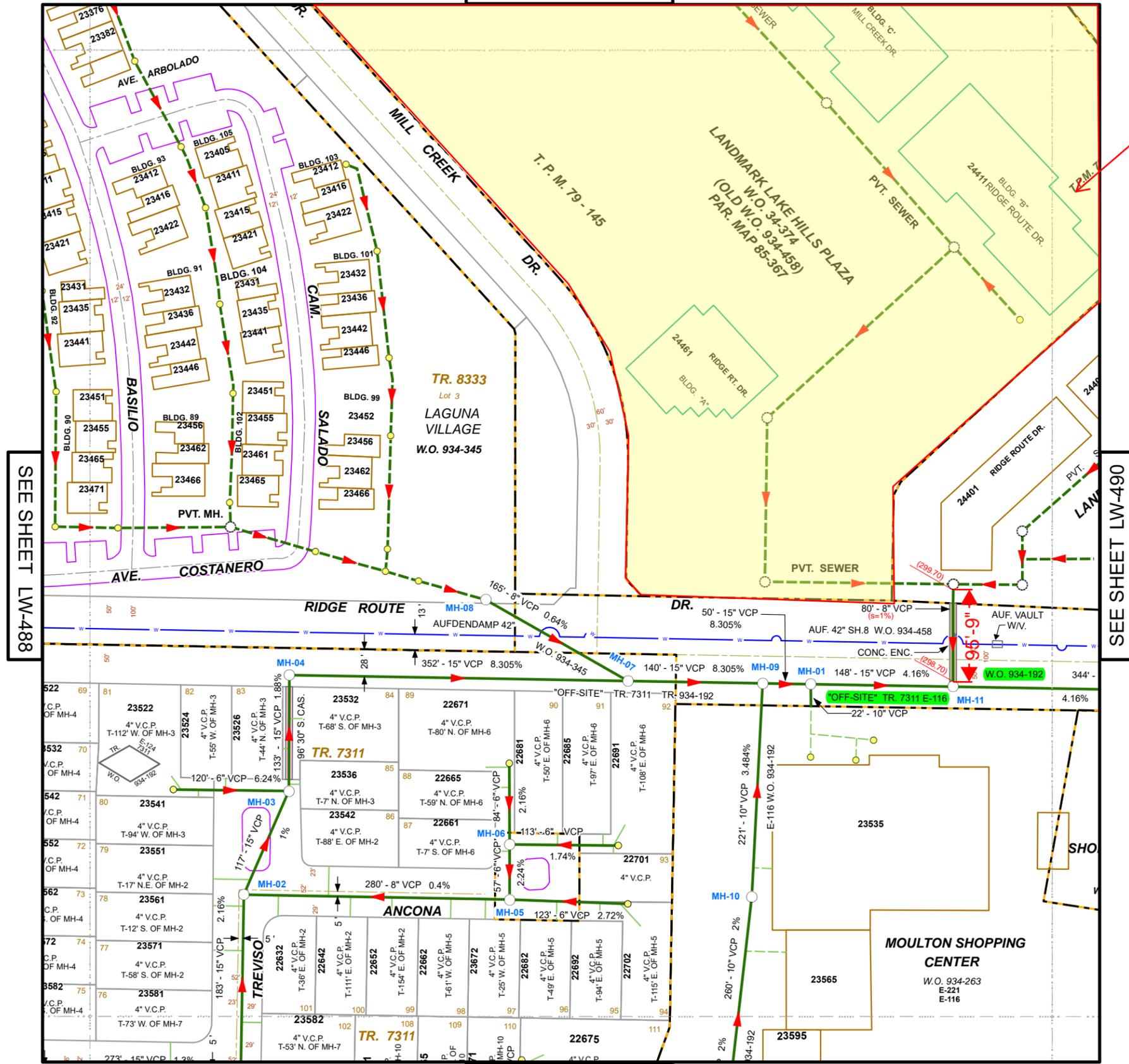


URBAN
ARENA

ATTACHMENT 2

ETWD SEWER ATLAS MAPS & AS-BUILT PLANS

SEE SHEET LV-489

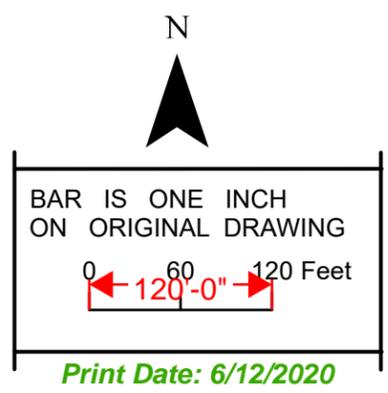


SITE

SEE SHEET LW-488

SEE SHEET LW-490

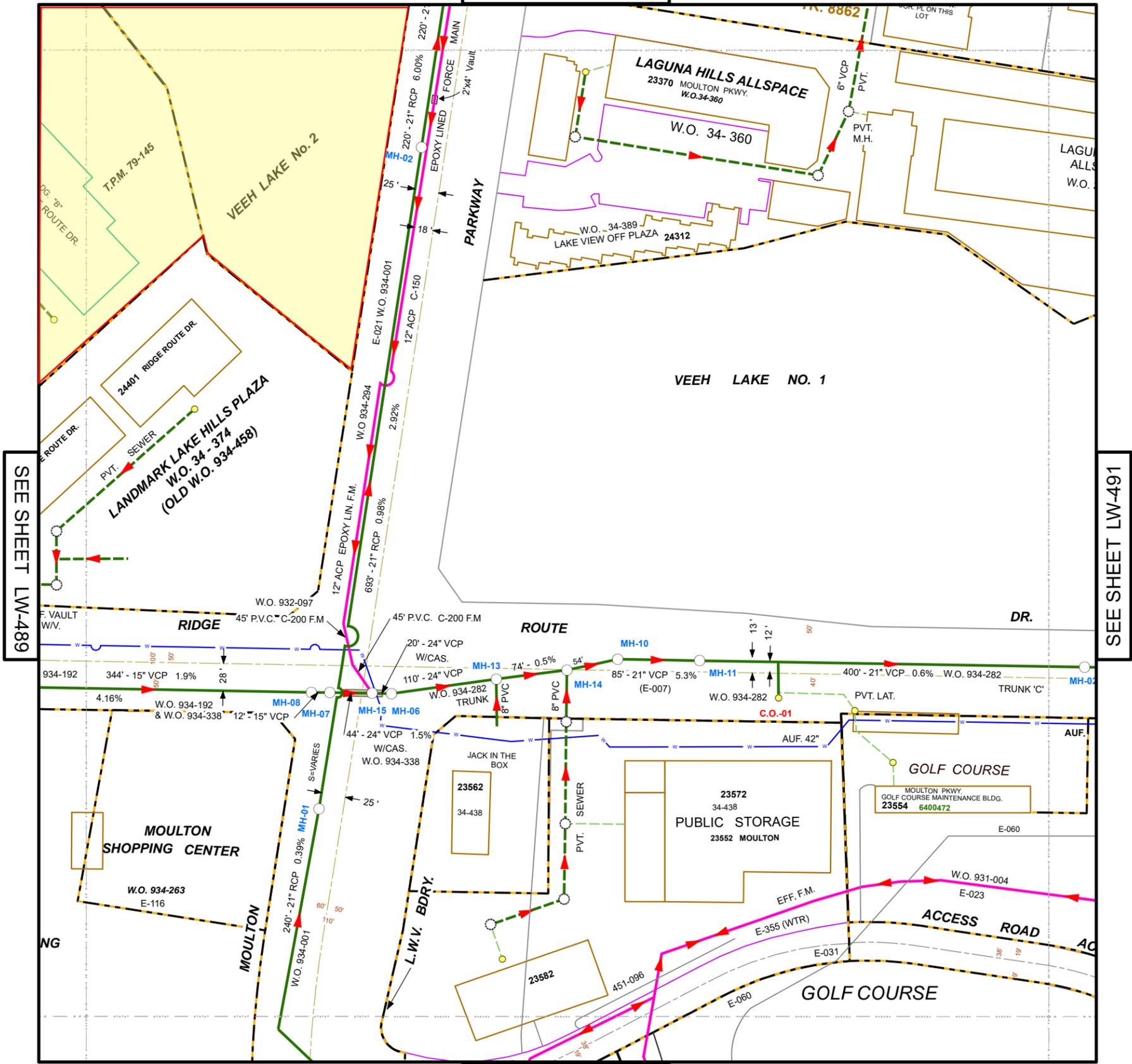
SEE SHEET LX-489



WARNING: THE LOCATION OF EL TORO WATER DISTRICT UNDERGROUND FACILITIES, AS PROVIDED, ARE BELIEVED TO BE ACCURATE. THE EXCAVATOR SHALL TAKE ALL STEPS NECESSARY TO AVOID CONTACT WITH UNDERGROUND FACILITIES WHICH MAY RESULT IN INJURY TO PERSONNEL OR DAMAGE TO FACILITIES. THE FINAL DETERMINATION OF EXACT LOCATIONS, AND COST OF REPAIR TO DAMAGED FACILITIES IS THE RESPONSIBILITY OF THE EXCAVATOR.

EL TORO WATER DISTRICT
ATLAS SHEET NO. LW-489

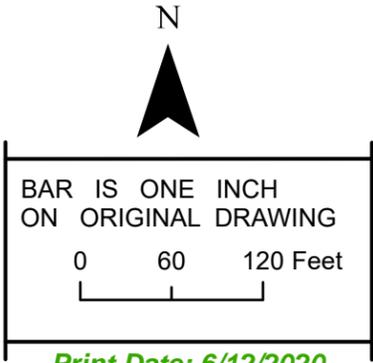
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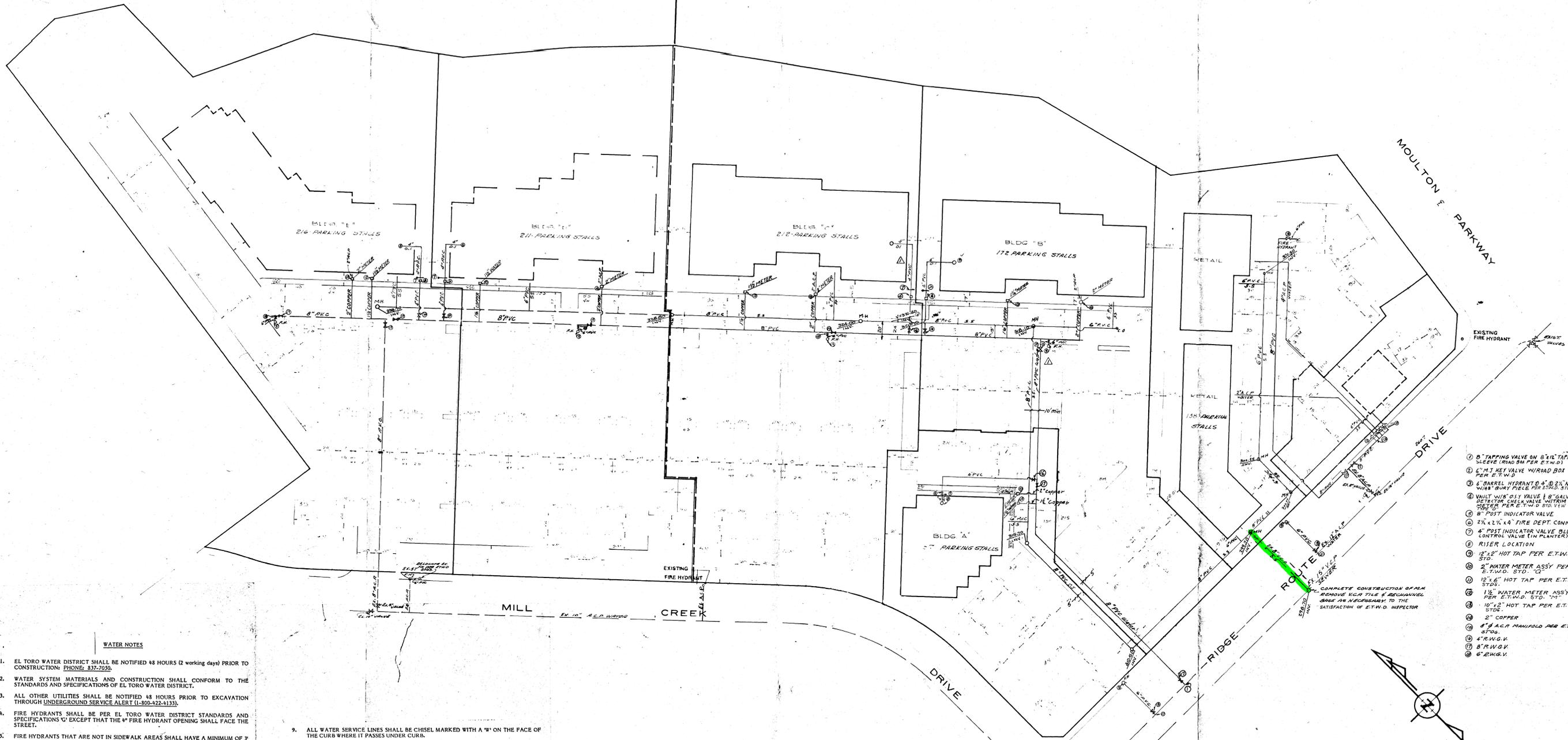


WARNING: THE LOCATION OF EL TORO WATER DISTRICT UNDERGROUND FACILITIES, AS PROVIDED, ARE BELIEVED TO BE ACCURATE. THE EXCAVATOR SHALL TAKE ALL STEPS NECESSARY TO AVOID CONTACT WITH UNDERGROUND FACILITIES WHICH MAY RESULT IN INJURY TO PERSONNEL OR DAMAGE TO FACILITIES. THE FINAL DETERMINATION OF EXACT LOCATIONS, AND COST OF REPAIR TO DAMAGED FACILITIES IS THE RESPONSIBILITY OF THE EXCAVATOR.

EL TORO WATER DISTRICT
ATLAS SHEET NO. LW-490

PHASE II ←

→ PHASE I



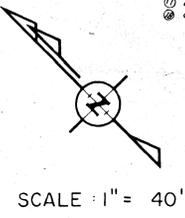
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WATER NOTES

1. EL TORO WATER DISTRICT SHALL BE NOTIFIED 48 HOURS (2 working days) PRIOR TO CONSTRUCTION. PHONE: 837-7026.
2. WATER SYSTEM MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF EL TORO WATER DISTRICT.
3. ALL OTHER UTILITIES SHALL BE NOTIFIED 48 HOURS PRIOR TO EXCAVATION THROUGH UNDERGROUND SERVICE ALERT (1-800-422-4133).
4. FIRE HYDRANTS SHALL BE PER EL TORO WATER DISTRICT STANDARDS AND SPECIFICATIONS 'C' EXCEPT THAT THE 4\"/>
- 5. FIRE HYDRANTS THAT ARE NOT IN SIDEWALK AREAS SHALL HAVE A MINIMUM OF 3' x 3' x 4\"/>
- 6. FIRE HYDRANTS SHALL BE PAINTED SAFETY YELLOW OR APPROVED EQUAL BEFORE RELEASE FOR OCCUPANCY.
- 7. WATER METERS SHALL BE STAKED BY DEVELOPER'S ENGINEER AND SHOWN ON WATER PLAN WITH DIMENSIONS TO NEAREST LOT PROPERTY LINE ALONG RIGHT OF WAY.
- 8. WATER METER-BOXES SHALL BE A MINIMUM OF FIVE (5) FEET FROM ANY DRIVEWAY AND SHALL NOT BE INSTALLED IN SIDEWALKS OR OTHER CONCRETE AREAS WITHOUT PRIOR WRITTEN APPROVAL OF EL TORO WATER DISTRICT.

9. ALL WATER SERVICE LINES SHALL BE CHISEL MARKED WITH A 'W' ON THE FACE OF THE CURB WHERE IT PASSES UNDER CURB.
10. ALL VALVES SHALL BE CHISEL MARKED IN THE NEAREST CURB FACE WITH A 'V' AND FOOTAGE FROM CURB FACE TO VALVE. WHERE VALVE IS IN AN INTERSECTION, TWO CHISEL MARKS FROM DIFFERENT CURB FACES AT THE NEAREST B.C. SHALL BE GIVEN. WHERE VALVE IS IN MID-BLOCK, ONE CHISEL MARK AT A RIGHT ANGLE TO THE VALVE SHALL BE GIVEN.
11. ALL WATER FACILITIES SHALL BE HYDROSTATIC TESTED BY AN APPROVED INDEPENDENT TESTING COMPANY AND RESULTS SHALL BE SUBMITTED, IN WRITING, TO OUR OFFICE.
12. PRIOR TO CONNECTION OF THE NEW WATER FACILITIES TO EXISTING WATER FACILITIES, THE NEW FACILITIES SHALL PASS ALL BACTERIA TESTS. THE NUMBER OF TESTS REQUIRED SHALL BE AT THE DISCRETION OF THE EL TORO WATER DISTRICT INSPECTOR. THE CONTRACTOR SHALL HAVE THE BACTERIA TEST PERFORMED BY AN INDEPENDENT CERTIFIED LABORATORY AND HAVE THE LABORATORY SUBMIT A COPY OF EACH TEST TO OUR OFFICE.
13. CONTRACTOR SHALL SUBMIT TO OUR INSPECTOR AN AS BUILT PRINT WHEN TESTING OF FACILITIES IS DONE. INFORMATION TO BE CALLED OUT ARE THE DISTANCES BETWEEN VALVES, TEES, BENDS, FIRE HYDRANTS, AND SERVICE LINE TAPS ALONG MAIN LINE. ALSO ANY CHANGE IN ANGLE METER STOP LOCATION AT PROPERTY LINE.
14. CURB AND GUTTER MUST BE INSTALLED PRIOR TO INSTALLATION OF WATER MAINS.
15. EL TORO WATER DISTRICT MUST APPROVE ADDITIONS OR RESIZING OF ANY WATER METER BY REVISION TO THIS PLAN.
16. ALL VALVES MUST BE OPERATED UNDER THE SUPERVISION OF EL TORO WATER DISTRICT. FAILURE TO DO SO SHALL RESULT IN CLOSURE OF PROJECT.

NOTE:
 WHEN SIDEWALKS ARE ADJACENT TO CURB ALL METERS AND DETECTOR CIRCLES ARE PLACED BEHIND SIDEWALK.
 ALL WATER AND SEWER CROSSINGS MUST COMPLY TO THE STATE HEALTH DEPARTMENT CODE.



CONSTRUCTION PLAN
 W. O. 34-374
 DATE 12.10.86

APPROVED: EL TORO WATER DISTRICT
Harlan G. Schroth 12.9.86
 HARLAN G. SCHROTH, Gen. Mgr.

APPROVED: ORANGE COUNTY FIRE DEPT
John Allen 12/9/86
 JOHN ALLEN, Capt.

REVISIONS
 1. RELOCATED 4\"/>

DRAWN BY: _____
 DATE: AUG 11, 86
 SHEET 1 OF 1
 JN 8075-46.C1

UTILITY PLAN
 RIDGE ROUTE DR. & MOULTON PKY.
 LAGUNA HILLS CALIFORNIA

OWNER: LANDMARK ASSET DEVELOPMENT GROUP
 LANDMARK LAKEHILLS PROJECT
 1500 QUAL STREET, SUITE 500, NEWPORT BEACH, CA 92660
 (714) 833-7541

PFEILER & ASSOCIATES ENGINEERS
 CIVIL ENGINEERING • SURVEYING
 7003 W. COMMUNIST AVENUE, FULLERTON, CALIFORNIA 92633 TELEPHONE (714) 833-7541

SHEET 1 OF 1

ATTACHMENT 3

ETWD – SEWER DESIGN CRITERIA

Sue Williams

From: Sue Williams
Sent: Monday, March 10, 2025 2:19 PM
To: Rory Harnisch; John Stack
Cc: Julian Blevins; John Olivier; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Categories: Filed in TonicDM, 04014-002 Here - Entitlement, 4014-002 Terravita

Hi Rory,

Following up from my voice mail message, please see snippet below from the fee estimate table. Would you please confirm that these values are not to be used, and if not, would you please provide the values to be used to calculate the wastewater loading for the various unit mix? Additionally, would you please clarify if the peaking factor values are for PDWF or PWWF?

Residential: Apt - >3 BDR	Unit	40	BDR	40
Residential: Apt - 1 BDR	Unit	120	DU	120
Residential: Apt - 2 BDR	Unit	160	DU	160
Residential: Apt - 3 BDR	Unit	200	DU	200
Residential: Apt - Bachelor	Unit	80	DU	80

Thank you,
Sue

SUSAN WILLIAMS, PE, MS, QSD/P

Technical Manager

O (949) 474-1960 | D (714) 642-7510

FUSCOE ENGINEERING, INC.

an employee-owned company

fuscoe.com

FYI, I will be out of the office on Friday March 14th.

F U L L C I R C L E T H I N K I N G ®

From: Sue Williams <SWilliams@fuscoe.com>

Sent: Monday, March 10, 2025 1:55 PM

To: Rory Harnisch <rharnisch@etwd.com>; John Stack <jstack@kingsbarn.com>

Cc: Julian Blevins <jblevins@fuscoe.com>; John Olivier <jolivier@fuscoe.com>; 04014-002@fuscoe.tonicdm.com

Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Hi Rory,

Received, thank you. I have a couple of follow-up questions, in red below. I will give you a call to follow-up and go over it.

Thank you,
Sue



SUSAN WILLIAMS, PE, MS, QSD/P
Technical Manager

D [\(714\) 642-7510](tel:(714)642-7510) | x4347

[Call me on Teams](#)

FYI, I will be out of the office on Friday March 14th.

employee-owned since 2017

From: Rory Harnisch <rharnisch@etwd.com>

Sent: Monday, March 10, 2025 1:41 PM

To: Sue Williams <SWilliams@fuscoe.com>; John Stack <jstack@kingsbarn.com>

Cc: Julian Blevins <jblevins@fuscoe.com>; John Olivier <jolivier@fuscoe.com>; 04014-002@fuscoe.tonicdm.com

Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Warning: Unusual sender <rharnisch@etwd.com>

You don't usually receive emails from this address. Make sure you trust this sender before taking any actions.

Sorry,

Forgot the attachment.

Thanks,

Rory Harnisch, P.E.

Senior Engineer

El Toro Water District

Phone: 949-837-7050 x251 | Cell: 949-415-4032

From: Rory Harnisch

Sent: Monday, March 10, 2025 1:39 PM

To: Sue Williams <SWilliams@fuscoe.com>; John Stack <jstack@kingsbarn.com>

Cc: Julian Blevins <jblevins@fuscoe.com>; John Olivier <jolivier@fuscoe.com>; 04014-002@fuscoe.tonicdm.com

Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Sue,

Here is the as-built that should get you the slope of that 8" piping and to answer your questions below:

1. Peaking factors. I was able to determine the flow factor coefficients from the fee table (attached), but is there also a peaking factor that ETWD applies to the flowrates presented in the fee table, when determining the flow-depth in it's sewer system? Or, should the values in the table be used when calculating sewer generation from the site.

ETWD does not use that Fee Chart. The Fee Chart you referred to is what we use for applying Capital Facilities Fees (Impact Fees) and nothing more. However the peak factor, per our Master Plan is currently approximately 2.48. Is the 2.48 peaking factor to convert the DWF to WWF, or to convert ADF to DWF? Also, since we are not to use the Fee Chart factors for the average flowrates (ADF?), would you please send us what to use for those purposes? The peaking factor will be applied to the factors.

2. Sewer flow-depth criteria. The onsite sewer system will connect to the existing 8" sewer lateral and then to the 15" sewer main in Ridge Route Drive. Please advise what are the allowable flow-depths for the various pipe sizes. I am assuming that the allowable depth for an 8" sewer is 1/2-full, but what is the allowable depth for a 15"-diameter sewer? Would it also be 1/2-full or would the allowable depth be up to 3/4-full?

For piping 15" and smaller in diameter: max d/D = 0.5 (DWF)

For piping 18" and larger in diameter: max d/D = 0.75 (DWF)

All diameters: max d/D = 0.92 (WWF). Thank you.

Thanks,

Rory Harnisch, P.E.

Senior Engineer

El Toro Water District

Phone: 949-837-7050 x251 | Cell: 949-415-4032

From: Sue Williams <SWilliams@fuscoe.com>

Sent: Monday, March 10, 2025 11:00 AM

To: Rory Harnisch <rharnisch@etwd.com>; John Stack <jstack@kingsbarn.com>

Cc: Julian Blevins <jblevins@fuscoe.com>; John Olivier <jolivier@fuscoe.com>; 04014-002@fuscoe.tonicdm.com

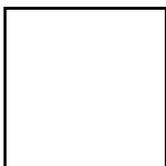
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Good morning Rory,

Just following up on the ETWD criteria (flow-depth and peaking factor) and slope of the existing 8" sewer lateral, would you be able to send these items over today?

Thank you,

Sue



SUSAN WILLIAMS, PE, MS, QSD/P

Technical Manager

SWilliams@fuscoe.com

O [\(949\) 474-1960](tel:(949)474-1960) | D [\(714\) 642-7510](tel:(714)642-7510)

fuscoe.com

15535 Sand Canyon Ave, Suite 100

Irvine, California 92618

FYI, I will be out of the office on Friday March 14th.

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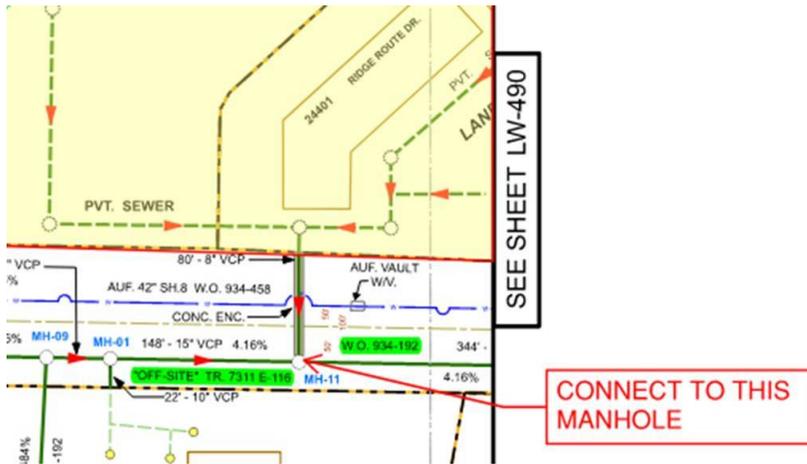
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From: Sue Williams <SWilliams@fuscoe.com>
Sent: Thursday, March 6, 2025 11:36 AM
To: Rory Harnisch <rharnisch@etwd.com>; John Stack <jstack@kingsbarn.com>
Cc: Julian Blevins <jblevins@fuscoe.com>; John Olivier <jolivier@fuscoe.com>; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Hi Rory,
There is one more item that would be needed, does the District have a record of the slope of the existing 8” lateral that connects to the 15” main in Ridge Route Drive, per snippet below? The project is proposing to connect to the existing 8” lateral.
Thank you,
Sue



SUSAN WILLIAMS, PE, MS, QSD/P
Technical Manager

D [\(714\) 642-7510](tel:7146427510) | x4347

[Call me on Teams](#)

FYI, I will be out of the office on Friday March 14th.

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From: Sue Williams <SWilliams@fuscoe.com>
Sent: Thursday, March 6, 2025 10:22 AM

To: Rory Harnisch <rharnisch@etwd.com>; John Stack <jstack@kingsbarn.com>
Cc: Julian Blevins <jblevins@fuscoe.com>; John Olivier <jolivier@fuscoe.com>; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Hi Rory,

Thank you for the conversation and email correspondence. I am suggesting that I should be the point-of-contact, unless John S. disagrees. As I mentioned to you during our phone call, Fuscoe has been asked to prepare a memorandum which will summarize the sewer flowrates that would be generated by the proposed project. Sewer calculations and analyses require knowledge of information specific to various agencies, in this case, ETWD. Regarding the items requested, specific to ETWD's Sewer Master Plan, would you please provide the following:

1. Peaking factors. I was able to determine the flow factor coefficients from the fee table (attached), but is there also a peaking factor that ETWD applies to the flowrates presented in the fee table, when determining the flow-depth in it's sewer system? Or, should the values in the table be used when calculating sewer generation from the site.
2. Sewer flow-depth criteria. The onsite sewer system will connect to the existing 8" sewer lateral and then to the 15" sewer main in Ridge Route Drive. Please advise what are the allowable flow-depths for the various pipe sizes. I am assuming that the allowable depth for an 8" sewer is 1/2-full, but what is the allowable depth for a 15"-diameter sewer? Would it also be 1/2-full or would the allowable depth be up to 3/4-full?

Thank you very much Rory.

-Sue

**SUSAN WILLIAMS, PE, MS,
QSD/P**
Technical Manager
O (949) 474-1960 | D (714) 642-7510

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F U L L C I R C L E T H I N K I N G ®

From: Rory Harnisch <rharnisch@etwd.com>
Sent: Thursday, March 6, 2025 10:04 AM
To: Sue Williams <SWilliams@fuscoe.com>; John Stack <jstack@kingsbarn.com>
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

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Sue/John,

Thanks for reaching out. I just got off the phone with Sue and we discussed sending information about the sewer system so her team can perform a preliminary sewer study. I will provide the data however I have 2 comments.

- 1) For ease of communication and to prevent miscommunication and misinformation please designate 1 person as the POC to ETWD. This will streamline the process.
- 2) For the preliminary sewer study, which specific information do you need? We are reluctant to provide the entire master plan for security purposes however I am more than happy to provide specific information you need with regards to the sewer system in that area. Please advise on what you need.

Thanks,

Rory Harnisch, P.E.
Senior Engineer
El Toro Water District
Phone: 949-837-7050 x251 | Cell: 949-415-4032

From: Sue Williams <SWilliams@fuscoe.com>
Sent: Thursday, March 6, 2025 8:05 AM
To: Dave <dave@seesdev.com>; Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; Rory Harnisch <rharnisch@etwd.com>; 04014-002@fuscoe.tonicdm.com; John Olivier <jolivier@fuscoe.com>
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Good morning Dave,
Thank you for your email. We will defer the sewer study at this time, and will reflect that on the resubmittal's response to comments. We will submit the other studies and plans, as mentioned.

Thank you,
Sue

**SUSAN WILLIAMS, PE, MS,
QSD/P**
Technical Manager
O (949) 474-1960 | D (714) 642-7510

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F U L L C I R C L E T H I N K I N G ®

From: Dave <dave@seesdev.com>
Sent: Thursday, March 6, 2025 6:52 AM
To: Sue Williams <SWilliams@fuscoe.com>; Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

External sender <dave@seesdev.com>

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Hello Sue,

I received a response from the City Engineer yesterday and he determined that a sewer study will not be required by the City. He will defer that decision to ETWD.

However, his team will be reviewing the other civil plans and technical studies, such as the traffic/VMT, VTTM, hydrology, WQMP, drainage, etc. Their required deposit to review the studies is \$3,000. I will coordinate the deposit and plan reviews with them after the next package is submitted.

Thanks,
Dave See

From: Sue Williams <SWilliams@fuscoe.com>
Sent: Monday, March 3, 2025 10:00 AM
To: Dave <dave@seesdev.com>; Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Hi Dave,

Thank you for your reply. Please see attached email correspondence from Rory at ETWD. It looks like if a sewer study is required, then ETWD will have their consultant prepare one, with the developer paying the fee. Please let me know if you have any questions regarding this information.

Thank you,
Sue

**SUSAN WILLIAMS, PE, MS,
QSD/P**

Technical Manager

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F U L L C I R C L E T H I N K I N G ®

From: Dave <dave@seesdev.com>
Sent: Friday, February 28, 2025 5:18 PM
To: Sue Williams <SWilliams@fuscoe.com>; Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete I to see etter_Team Assignment - Mill Creek - Sewer Study Assessment

Warning: Unusual link

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Hello Sue,

I've been coordinating the sewer study issue with the Assistant Engineer in Public Works. The City Engineer has been out of town but returning Monday. A sewer study may not be needed, subject to his determination on that issue. My experience with sewer studies is that a determination may need to be made whether or not there is adequate sewer capacity to accommodate the new development, regardless of which entity owns the sewer main. It may require looking up past records and studies, such as the General Plan EIR (or Housing Element) to confirm how much development capacity (ie. no. of units or s.f.) was anticipated at that time, and/or if there were mitigation measures that applied to each development. I'll keep looking into this matter and will let you know what I find out early next week.

Regarding the ETWD Will Serve letter, that document is required by PW staff.

Thanks,
Dave See
Contract Planner

From: Sue Williams <SWilliams@fuscoe.com>
Sent: Wednesday, February 26, 2025 8:17 AM
To: Dave <dave@seesdev.com>; Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete letter_Team Assignment - Mill Creek - Sewer Study Assessment

Hi Dave,

I just wanted to chime in again and try to clarify what is being requested from the city regarding the sewer study shown on the checklist. We are thinking that the "sewer study" is just an item on the checklist, and perhaps it does not apply to this project, since the public sewer system is not owned/maintained by the City. We reached out to El Toro Water District (ETWD) regarding what they would require regarding a sewer study, and they requested that we contact the City to have them clarify what is being requested. Perhaps all that is needed is to have ETWD provide a will-serve letter regarding sewer capacity?

Please feel free to give me a call on my cell (714) 642-7510 if there are any questions, as Julian will be out until next Tuesday.

Thank you,
Sue

SUSAN WILLIAMS, PE, MS,
QSD/P

Technical Manager

O (949) 474-1960 | D (714) 642-7510

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F U L L C I R C L E T H I N K I N G ®

From: Dave <dave@seesdev.com>

Sent: Tuesday, February 25, 2025 5:33 PM

To: Julian Blevins <jblevins@fuscoe.com>

Cc: Sue Williams <SWilliams@fuscoe.com>; Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com

Subject: RE: Terravita incomplete letter_Team Assignment - Mill Creek - Sewer Study Assessment

Warning: Unusual sender <dave@seesdev.com>

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Julian,

Sounds good. I'll be meeting with the City Engineer in the next day or two to discuss the process of how all of the technical studies are reviewed and processed. Besides the sewer study, we'll also need his involvement in the review of the VTTM, traffic/VMT, hydrology, PQWMP, etc. I'll keep you posted.

Just so you are aware, I'm the contract planner that was recently retained by the Planning Dept. to manage and process this project. This is my only assignment with them, so I made myself available anytime for questions, meetings, coordination with City staff, etc. to make sure the process goes smoothly.

Thanks,

Dave See

Cell (562) 514-5881

From: Julian Blevins <jblevins@fuscoe.com>

Sent: Tuesday, February 25, 2025 5:15 PM

To: Dave <dave@seesdev.com>; Sue Williams <SWilliams@fuscoe.com>

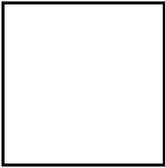
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com

Subject: RE: Terravita incomplete letter_Team Assignment - Mill Creek - Sewer Study Assessment

Thank you Dave for the quick response,

I think just passing along the inquiry to the City would suffice for now. Depending on their response, we may want to set something up afterwards.

Thanks,



JULIAN BLEVINS
Project Manager
jblevins@fuscoe.com

O [\(858\) 554-1500](tel:(858)554-1500) | D [\(858\) 337-8628](tel:(858)337-8628)
fuscoe.com
6390 Greenwich Drive, Suite 170
San Diego, California 92122

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From: Dave <dave@seesdev.com>
Sent: Tuesday, February 25, 2025 4:40 PM
To: Sue Williams <SWilliams@fuscoe.com>; Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete letter_Team Assignment - Mill Creek - Sewer Study Assessment

Warning: Unusual sender <dave@seesdev.com>

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Hello everyone,
I will reach out to the City Engineer for guidance on your sewer study questions. I can setup a meeting with him and your team to discuss if you think that would be beneficial.

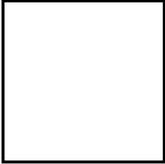
Thanks,
Dave See

From: Sue Williams <SWilliams@fuscoe.com>
Sent: Tuesday, February 25, 2025 2:05 PM
To: Julian Blevins <jblevins@fuscoe.com>; Dave <dave@seesdev.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; rharnisch@etwd.com; 04014-002@fuscoe.tonicdm.com
Subject: RE: Terravita incomplete letter_Team Assignment - Mill Creek - Sewer Study Assessment

Hi Dave,
Additional information, a sewer study assessment was listed as item 18 (checklist item R14) per snippet below. Please advise what the City is looking for regarding this study, as the sewer main is owned by ETWD.
Thank you,
Sue

18. Sewer Study Assessment (Checklist Item R14)

This study was not included in the submittal package and must be submitted to conform with the requirements described in the Application Checklist. A Sewer Study must verify whether the existing sewer system can accommodate the proposed development, and if not, the study must identify needed improvements that would allow a development project to move forward.



SUSAN WILLIAMS, PE, MS, QSD/P
Technical Manager
SWilliams@fuscoe.com

O [\(949\) 474-1960](tel:9494741960) | D [\(714\) 642-7510](tel:7146427510)
fuscoe.com
15535 Sand Canyon Ave, Suite 100
Irvine, California 92618

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From: Julian Blevins <jblevins@fuscoe.com>

Sent: Tuesday, February 25, 2025 1:59 PM

To: dave@seesdev.com

Cc: Ken Kozlik <kkozlik@fuscoe.com>; Sue Williams <SWilliams@fuscoe.com>; rharnisch@etwd.com

Subject: RE: Terravita incomplete letter_Team Assignment

Hello Dave,

I am the Civil working on the subject project (See incomplete letter attached), and I am looking for clarification regarding the Sewer Study requirement (below). Is the City requesting only a sewer study, or a Sewer Study with will serve letters from El Toro Water District (ETWD)? The existing 15" sewer main that the project proposed to connect to is owned and maintained by ETWD. See attached sewer ATLAS map showing the project location and proposed POC to the public main.

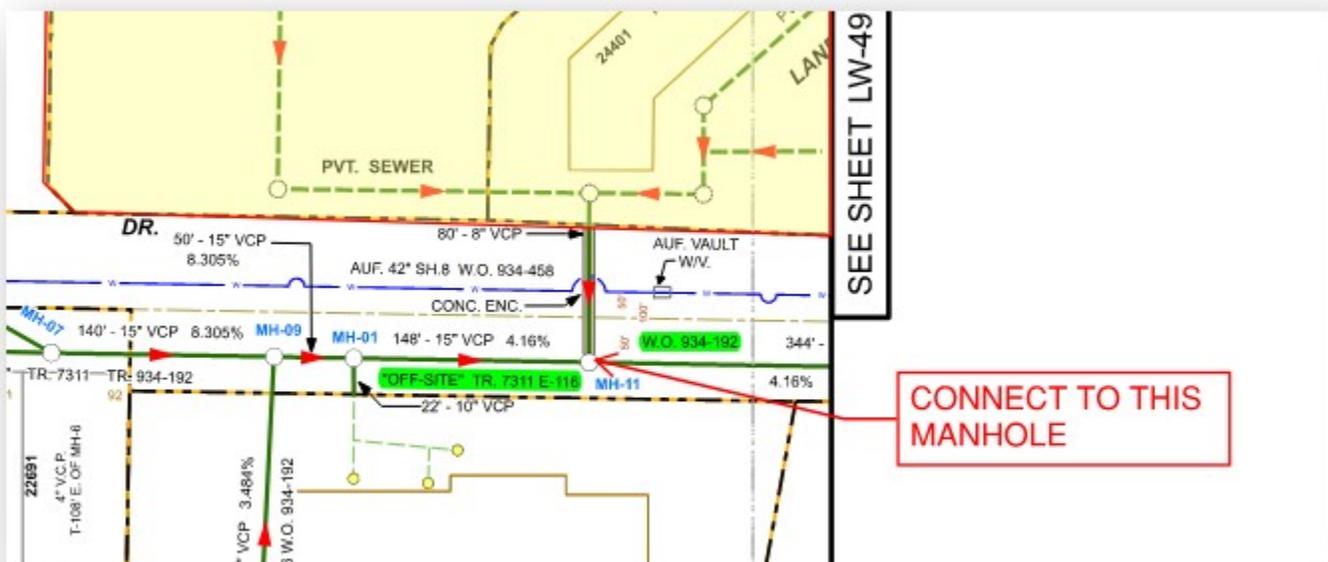
Please advise.

Thanks,

3. Proposed Site Plan (Checklist Item C4)

UA/Fusco

- Checklist Item C4 requires submittal of a Site Plan that shows gross building area, building setbacks to property lines, utility lines/easements (on and off-site), and existing/proposed improvements (buildings, driveways, walkways, landscaping, open space, ADA paths, trash enclosures, parking area, fire lanes, preliminary Title 24, ground-mounted mechanical equipment/PV, water quality/hydromodification areas, etc.). Identify buildings, parking, landscaping, and ingress/egress within 100 feet of the project property. A Site Plan was submitted, as required; however, the plan is missing building setbacks to property lines, driveway and street widths, walkways, landscaping, open space, ADA paths, trash enclosures, preliminary Title 24, parking stall dimensions and striping, ground-mounted mechanical equipment/PV, water quality/hydromodification areas, etc.



JULIAN BLEVINS
Project Manager

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JULIAN BLEVINS
Project Manager

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From: John Olivier <jolivier@fuscoe.com>
Sent: Tuesday, February 25, 2025 3:56 AM
To: Julian Blevins <jblevins@fuscoe.com>
Cc: Ken Kozlik <kkozlik@fuscoe.com>; Bryan Smith <bsmith@fuscoe.com>
Subject: Fw: Terravita incomplete letter_Team Assignment

Hi Julian,
Vincent's list looked about right. That's good news that Firesafe is on the team for the Fire Master Plan. Regarding the justification letter, we should suggest that the Morgan do it - at least worth a try. Please let me know what your timing will be for the sewer study. That looks to be the long lead item for us.
John



JOHN OLIVIER, PE
Chief Executive Officer/President

D [\(949\) 466-5859](tel:(949)466-5859) | x4301

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From: Vincent Do <vincent@urbanarena.com>
Sent: Monday, February 24, 2025 4:19:17 PM
To: Michael Schrock <michael@urbanarena.com>; Jackie Case <jackie@urbanarena.com>; John Stack <jstack@kingsbarn.com>; Philip Mader <pmader@kingsbarn.com>; John Olivier <jolivier@fuscoe.com>; Christopher Steuart <chris@urbanarena.com>; Jose Ho <joseh@aoarchitects.com>; Julian Blevins <jblevins@fuscoe.com>
Subject: RE: Terravita incomplete letter_Team Assignment

External sender <vincent@urbanarena.com>
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+ Jose (AO) & Julian (Fuscoe)

Team,

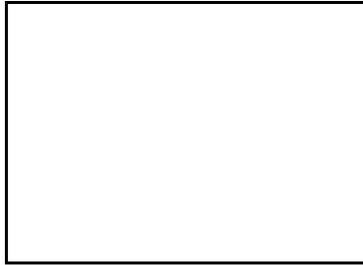
I took a shot at adding the team's responsible party to each of these comments. Let me know if you see any discrepancies...

Thanks

VINCENT DO, RLA
Principal | Planning

**URBAN
ARENA**

3195 Red Hill Avenue, Loft F
Costa Mesa, CA 92626
O 714 754 4500
C 949 701 7781



From: Michael Schrock <michael@urbanarena.com>

Sent: Friday, February 21, 2025 2:01 PM

To: Vincent Do <vincent@urbanarena.com>; Jackie Case <jackie@urbanarena.com>; John Stack <jstack@kingsbarn.com>; Philip Mader <pmader@kingsbarn.com>; John Olivier <jolivier@fuscoe.com>; Christopher Steuart <chris@urbanarena.com>

Subject: FW: Terravita incomplete letter

John,

We will review the attached letter immediately for incompleteness...

On SB 330 applications – city's are using 'incompleteness' as a method to slow the process...

This submittal package is enormous and quite extensive... Plenty for the staff to review...

John – unless I am mistaken - lots of this is in your court including letter of justification, hazardous waste statement, waste management plan, unusual conditions study, air quality analysis, fiscal impact analysis, housing report, noise impact assessment, traffic study, public outreach strategy report, need arborist for tree preservation study, and EIR stuff... Oh boy is this a handful...

Vincent – please assign responsibilities to each of UA and Fuscoe so we can be as efficient as possible... We will do the additions to the site plan, roof plan, solar study, massing model, thank you

MICHAEL SCHROCK
Founding Principal

**URBAN
ARENA**

3195 Red Hill Avenue, Loft F
Costa Mesa, CA 92626
O 714 754 4500
C 949 278 1571



From: John Stack <jstack@kingsbarn.com>
Sent: Friday, February 21, 2025 1:00 PM
To: Michael Schrock <michael@urbanarena.com>; John Olivier <jolivier@fuscoe.com>
Cc: Philip Mader <pmader@kingsbarn.com>
Subject: FW: Terravita incomplete letter

Michael/John,

Please see the attached comments from the City determining the application is incomplete. We need to resubmit as soon as possible as they are not going to review anything without a complete application.

We are in the final stages of the SB330 window so the plans need to be perfect.

Thank You,

John Stack | VP, Development Manager
2500 Sand Hill Road, Suite 320
Menlo Park, CA 94025
o: 650.782.3300 | d: 650.782.3302 | c: 407.754.8377



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From: Dave <dave@seesdev.com>
Sent: Friday, February 21, 2025 12:23 PM
To: John Stack <jstack@kingsbarn.com>
Cc: Jennifer Lowe <jlowe@lagunahillsCA.gov>; Jay Wu <jwu@lagunahillsCA.gov>
Subject: Terravita incomplete letter

John,

This is to inform you that the City of Laguna Hills has issued the attached Incomplete Letter for application USE-0209-2025, the Terravita project. Please see attached.

Sincerely,
Dave See
Contract Planner

ATTACHMENT 4

SEWER FLOW-DEPTH CALCULATIONS

Worksheet for Circular Pipe - 15-inch-capacity-DWF

Project Description	
Friction Method	Manning Formula
Solve For	Discharge
Input Data	
Roughness Coefficient	0.013
Channel Slope	0.019 ft/ft
Normal Depth	7.50 in
Diameter	15.0 in
Results	
Discharge	4.452 cfs
Flow Area	0.6 ft ²
Wetted Perimeter	2.0 ft
Hydraulic Radius	3.75 in
Top Width	1.25 ft
Critical Depth	10.26 in
Percent Full	50.0 %
Critical Slope	0.007 ft/ft
Velocity	7.26 ft/s
Velocity Head	0.82 ft
Specific Energy	1.44 ft
Froude Number	1.826
Maximum Discharge	9.578 cfs
Discharge Full	8.904 cfs
Slope Full	0.005 ft/ft
Flow Type	Supercritical
GVF Input Data	
Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	7.50 in
Critical Depth	10.26 in
Channel Slope	0.019 ft/ft
Critical Slope	0.007 ft/ft

Worksheet for Circular Pipe - 15-inch-capacity-WWF

Project Description	
Friction Method	Manning
	Formula
Solve For	Discharge
Input Data	
Roughness Coefficient	0.013
Channel Slope	0.019 ft/ft
Normal Depth	13.80 in
Diameter	15.0 in
Results	
Discharge	9.556 cfs
Flow Area	1.2 ft ²
Wetted Perimeter	3.2 ft
Hydraulic Radius	4.42 in
Top Width	0.68 ft
Critical Depth	14.07 in
Percent Full	92.0 %
Critical Slope	0.019 ft/ft
Velocity	8.09 ft/s
Velocity Head	1.02 ft
Specific Energy	2.17 ft
Froude Number	1.081
Maximum Discharge	9.578 cfs
Discharge Full	8.904 cfs
Slope Full	0.022 ft/ft
Flow Type	Supercritical
GVF Input Data	
Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	92.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	13.80 in
Critical Depth	14.07 in
Channel Slope	0.019 ft/ft
Critical Slope	0.019 ft/ft

ATTACHMENT 5

SEWER GENERATION CALCULATIONS

Terravita - Laguna Hills

(2/2026)

Sewer Flow Generation to El Toro Water District (ETWD) Sewer System

	Proposed Residential							
	Number Of Units	DWF (gpd/du)	DWF gpd	DWF (cfs)	Peaking Factor	Total Peak Flow (gpd)	Total Peak Flow (cfs)	
Lot 1	Studio	0	80	0	0	2.5	0	0.000
	1 bdrm	0	120	0	0	2.5	0	0.000
	2 bdrm	0	160	0	0	2.5	0	0.000
	3 bdrm	0	200	0	0	2.5	0	0.000
	4 bdrm	46	240	11040	0.0171	2.5	27,600	0.0427
	Totals	46						
			11,040	0.0171		27,600	0.0427	

	Proposed Residential							
	Number Of Units	DWF (gpd/du)	DWF gpd	DWF (cfs)	Peaking Factor	Total Peak Flow (gpd)	Total Peak Flow (cfs)	
Lot 2	Studio	0	80	0	0	2.5	0	0.000
	1 bdrm	0	120	0	0	2.5	0	0.000
	2 bdrm	29	160	4640	0.00717914	2.5	11,600	0.018
	3 bdrm	78	200	15600	0.02413677	2.5	39,000	0.060
	4 bdrm	0	240	0	0.0000	2.5	0	0.0000
	Totals	107						
			20,240	0.0313		50,600	0.0783	

	Proposed Residential							
	Number Of Units	DWF (gpd/du)	DWF gpd	DWF (cfs)	Peaking Factor	Total Peak Flow (gpd)	Total Peak Flow (cfs)	
Lot 3	Studio	0	80	0	0	2.5	0	0.000
	1 bdrm	0	120	0	0	2.5	0	0.000
	2 bdrm	0	160	0	0	2.5	0	0.000
	3 bdrm	0	200	0	0	2.5	0	0.000
	4 bdrm	106	240	25440	0.0394	2.5	63,600	0.0984
	Totals	106						
			25,440	0.0394		63,600	0.0984	

	Proposed Residential							
	Number Of Units	DWF (gpd/du)	DWF gpd	DWF (cfs)	Peaking Factor	Total Peak Flow (gpd)	Total Peak Flow (cfs)	
Lot 4	Studio	25	80	2000	0.00309446	2.5	5,000	0.008
	1 bdrm	134	120	16080	0.02487944	2.5	40,200	0.062
	2 bdrm	62	160	9920	0.01534851	2.5	24,800	0.038
	3 bdrm	0	200	0	0	2.5	0	0.000
	4 bdrm	0	240	0	0.0000	2.5	0	0.0000
	Totals	221						
			28,000	0.0433		70,000	0.1083	

Total Units: 480

DWF = Dry-Weather Flow
WWF = Wet-Weather Flow

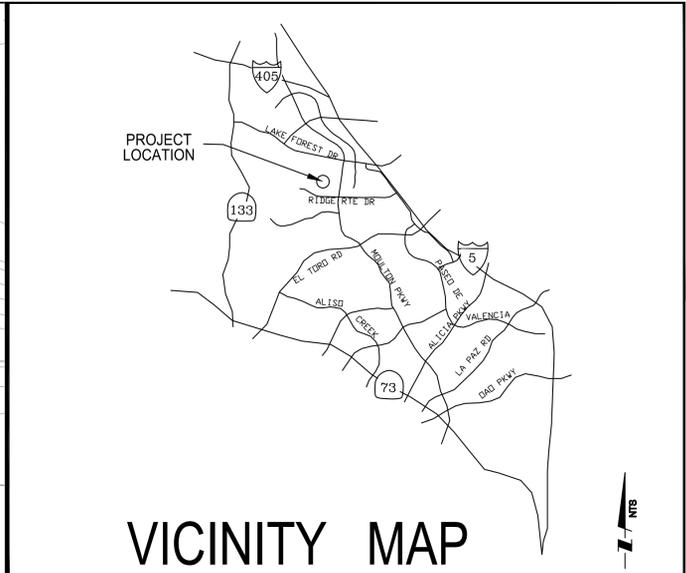
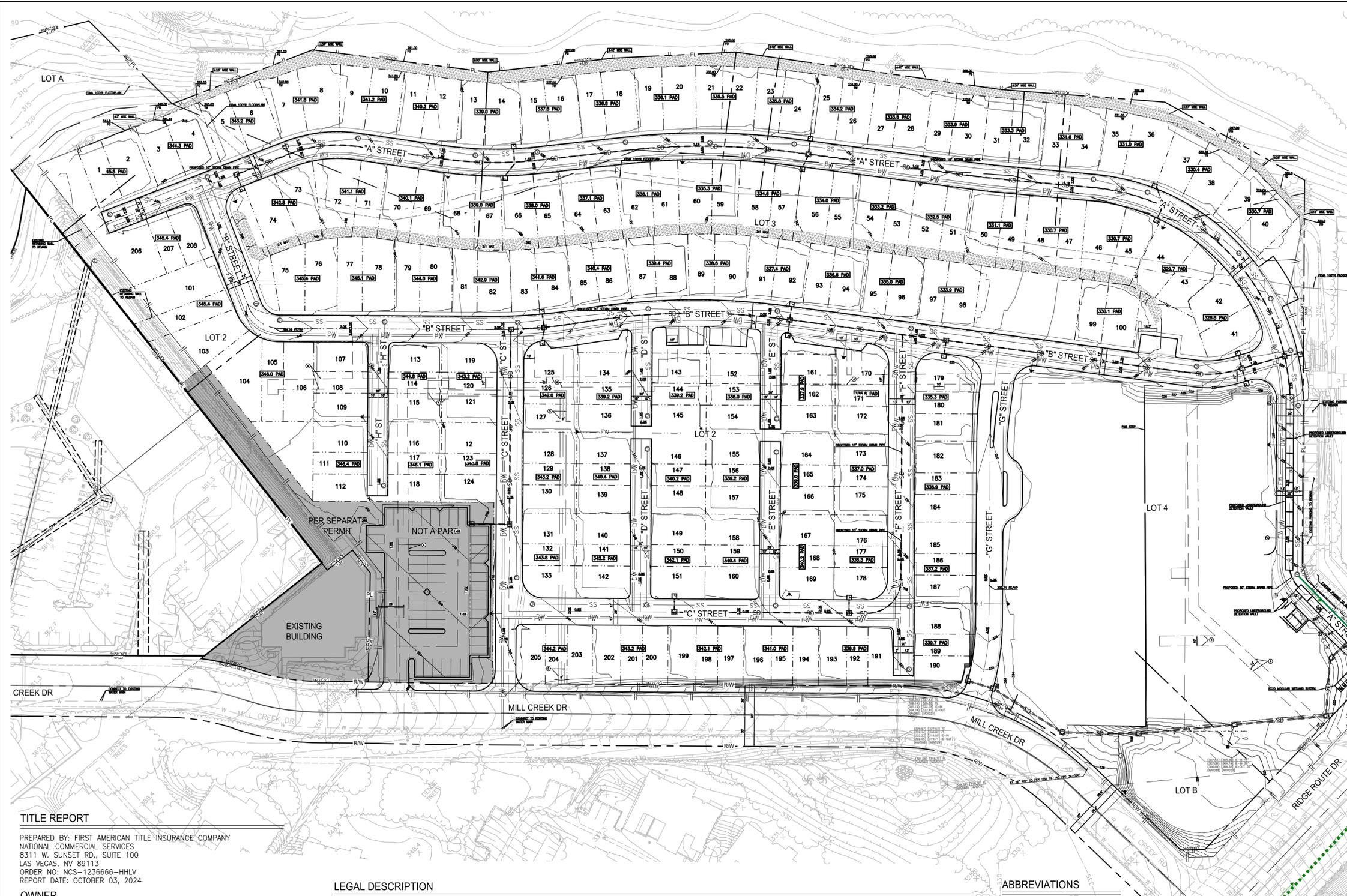
* Note: Generation Factors Per ETWD

DWF	
84,720	0.131
gpd	cfs

WWF (Peak)	
211,800	0.328
gpd	cfs

ATTACHMENT 6

ANNOTATED SEWER EXHIBIT



LEGEND

STREET CENTERLINE	---
RIGHT OF WAY	--- RW ---
EASEMENT	---
SEWER PIPE	SS
SEWER MANHOLE	○
SEWER CLEANOUT	○
FIRE WATER	FW
DOMESTIC WATER	W
FIRE HYDRANT	⊕
STORM DRAIN	---
CATCH BASIN	⊕
JUNCTION STRUCTURE	⊕
STORM DRAIN INLET	⊕
BUILDING	▒
CONCRETE	▒
ASPHALT CONCRETE	▒
ELECTRICAL	E
GAS	G
SIDEWALK	---
CURB AND GUTTER	---
MODULAR WETLAND SYSTEM (MWS)	---
STORM WATER DETENTION VAULT	⊕
FILTERRA BIOFILTRATION SYSTEM	⊕
LOT NUMBER	A
CONDOMINIUM UNIT NUMBER	10
PAD ELEVATION	PAD=1275.0
TOP AND TOE OF SLOPE	---
PROPOSED CONTOUR	---
EXISTING CONTOUR	---

TITLE REPORT

PREPARED BY: FIRST AMERICAN TITLE INSURANCE COMPANY
 NATIONAL COMMERCIAL SERVICES
 8311 W. SUNSET RD., SUITE 100
 LAS VEGAS, NV 89113
 ORDER NO: NCS-1236666-HHLV
 REPORT DATE: OCTOBER 03, 2024

OWNER

KB RIDGE ROUTE, LLC, A DELAWARE LIMITED LIABILITY COMPANY, AS TO PARCELS 1 AND 2
 KB MILL CREEK, DST, A DELAWARE STATUTORY TRUST, AS TO PARCELS 3, 4 AND 5
 LAKEHILLS CORPORATE PARK OWNERS ASSOCIATION, INC., A CALIFORNIA NONPROFIT MUTUAL BENEFIT CORPORATION, AS TO PARCEL 7

LEGAL DESCRIPTION

PARCEL A:
 PARCELS 1 THROUGH 5 AND 7 INCLUSIVE AS SHOWN ON PARCEL MAP NO. 98-191, IN THE CITY OF LAGUNA HILLS, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS PER MAP FILED IN BOOK 311, PAGES 26 THROUGH 31 INCLUSIVE OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT ONE-HALF UNDIVIDED INTEREST IN AND TO ALL MINERALS, OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES IN OR UNDER, OR WHICH MAY BE PRODUCED FROM SAID LAND WHICH UNDERLIES A PLANE PARALLEL TO AND 500 FEET BELOW THE PRESENT SURFACE OF SAID LAND, FOR THE PURPOSE OF PROSPECTING FOR, THE EXPLORATION, DEVELOPMENT, PRODUCTION, EXTRACTION AND TAKING OF SAID MINERALS, OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES FROM SAID LAND BY MEANS OF MINES, WELLS, DERRICKS AND/OR OTHER EQUIPMENT FROM SURFACE LOCATIONS ON ADJOINING OR NEIGHBORING LAND OR LYING OUTSIDE OF THE ABOVE DESCRIBED LAND, IT BEING UNDERSTOOD THAT THE OWNER OF SUCH MINERAL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES, AS SET FORTH ABOVE, SHALL HAVE NO RIGHT TO ENTER UPON THE SURFACE OF THE ABOVE DESCRIBED LAND NOR TO USE ANY OF THE SAID LAND OR ANY PORTION THEREOF ABOVE SAID PLANE PARALLEL TO AND 500 FEET BELOW THE PRESENT SURFACE OF THE SAID LAND FOR ANY PURPOSE WHATSOEVER, AS SET FORTH IN AN INSTRUMENT RECORDED FEBRUARY 15, 1974 IN BOOK 11076, PAGE 773 OF OFFICIAL RECORDS.

PARCEL B:
 NON-EXCLUSIVE EASEMENTS FOR SURFACE DRAINAGE FROM PARCEL 2 OVER PARCEL 1 ("PARCEL 1") OF PARCEL MAP 85-367 IN THE CITY OF LAGUNA HILLS, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS PER MAP FILED IN BOOK 262, PAGE 5 THROUGH 6 OF MAPS IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY THROUGH THE DRAINAGE PATTERNS AND SYSTEMS AS ARE ESTABLISHED FROM TIME TO TIME UPON PARCEL 1 AS SET FORTH IN THE DEED RECORDED APRIL 26, 1991 AS INSTRUMENT NO. 91-197995 OF OFFICIAL RECORDS.

PARCEL C:
 A NON-EXCLUSIVE EASEMENT FOR ACCESS, INGRESS AND EGRESS OVER AND UPON THE AREA OF PARCEL 1 DESCRIBED IN SCHEDULE 1 ATTACHED THERETO AS "SLOPE MAINTENANCE AREA" AND "SLOPE MAINTENANCE AREA ACCESS" FOR THE SOLE PURPOSES OF PERMITTING ACCESS TO ACCOMPLISH CERTAIN SLOPE MAINTENANCE AREA LOCATED WITHIN PARCEL 2, AS SET FORTH IN THE ABOVE-MENTIONED DEED.

PARCEL D:
 A NON-EXCLUSIVE EASEMENT OF ACCESS, INGRESS AND EGRESS OVER AND UPON THE AREA OF PARCEL 1 DESCRIBED ON SCHEDULE 1 ATTACHED THERETO AS "PEDESTRIAN ACCESS" FOR THE SOLE PURPOSE OF PERMITTING ACCESS TO PARCEL 1, AS SET FORTH IN THE FIRST ABOVE-MENTIONED DEED.

PARCEL E:
 AN EASEMENT TO MAINTAIN, REPAIR, RESTORE AND/OR REPLACE ONE (1) TEMPORARY PROJECT LEASING INFORMATION SIGN ("TEMPORARY LEASING SIGN") FOR THE BENEFIT OF PARCEL 2 AND LOCATED ON PARCEL 1 ADJACENT TO MOUTON PARKWAY AT THE LOCATION SHOWN ON SCHEDULE 1 ATTACHED THERETO AS SET FORTH ALSO IN THE FIRST ABOVE-MENTIONED DEED

PARCEL F:
 NON-EXCLUSIVE EASEMENTS FOR ACCESS AND PARKING AS MORE PARTICULARLY SET FORTH IN SECTION 4.2 OF THE AMENDED AND RESTATED DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS AND RECIPROCAL EASEMENT AGREEMENT RECORDED MAY 17, 2006 AS INSTRUMENT NO. 2006000332225 OF OFFICIAL RECORDS.

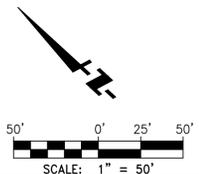
ABBREVIATIONS

BFP	BACK FLOW PREVENTER
CB	CATCH BASIN
CL	CENTERLINE
CO	CLEANOUT
CONC	CONCRETE
C&G	CURB AND GUTTER
EX	EXISTING
FL	FLOWLINE
FYS	FRONT YARD SETBACK
LIP	LIP OF GUTTER
MTR	METER
NTS	NOT TO SCALE
PB	PULLBOX
PL	PROPERTY LINE
PROP	PROPOSED
R/W	RIGHT-OF-WAY
RYS	REAR YARD SETBACK
SQR	SQUARE
SYS	SIDE YARD SETBACK
TRANS	TRANSFORMER
UM	UTILITY MARKER
WV	WATER VALVE

SITE SUMMARY

DESCRIPTION	AREA (ACRE)	TOTAL UNITS
LOT 2 UA SINGLE-FAMILY ATTACHED "B"	5.47	108
LOT 3 UA SINGLE-FAMILY ATTACHED "C"	6.62	100
LOT 4 MULTI-FAMILY	2.40	210
LOT A TERRACE PARK	0.38	
LOT B CORNER PARK	0.40	
GRAND TOTAL	15.27	418
Affordable Unit (5% of total) =		24 units total
(All affordable units are located in the Multi-Family Building, Lot 4)		

SEWER EXHIBIT



VESTING TENTATIVE TRACT NO. LAGUNA HILLS TERRAVITA FOR CONDOMINIUM PURPOSES

FUSCOE ENGINEERING
 FULL SERVICE THINKING
 6390 Greenwich Dr Suite 170 San Diego, Ca 92122
 858.554.1500
 fuscoe.com

December 13, 2024
JOB NO. 2486-005-015
DRAWN BY: JB
SHEET T-1.2

ASSESSOR'S PARCEL NUMBER

588-161-06 (AFFECTS: PARCEL 1)
588-161-07 (AFFECTS: PARCEL 2)
588-161-08 (AFFECTS: PARCEL 3)
588-161-09 (AFFECTS: PARCEL 4)
588-161-10 (AFFECTS: PARCEL 5)
588-161-13 (AFFECTS: PARCEL 7)