

Appendix J

Sewer Study



SEWER STUDY
FOR
MAGNOLIA AND WARNER
16800 Magnolia St. and 9025 Recreation Cir.
Fountain Valley, CA 92708

Prepared for:

Prepared by:
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JLA Job # 24027
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Introduction

The project site is located in the City of Fountain Valley, between I-405 to the north and east, Recreation St. to the south, and Magnolia St. to the west. The site is bordered to the southeast by an existing commercial building. The site is currently cleared of existing improvements.

An existing 12-inch city sewer main runs from east to west in the center of the property. The existing 12-inch city sewer main serves residential communities to the north of the project site. An existing 8-inch city sewer main in Recreation Circle serves an existing commercial recreation structure and hotel complex.

Existing flows in the 12” main:

“R-1” Zoning:

(Anaheim General Plan Sewage Generation classification Low Density Residential)

$$1,494 \text{ gpd} * 1/7.48 \text{ cf/gal} * 1/24 \text{ day/hour} * 1/60 \text{ hour/min} * 1/60 \text{ min/sec} * 197.5 \text{ acres} \\ = 0.46 \text{ cfs}$$

“PI” Zoning:

(Anaheim General Plan Sewage Generation classification Schools, Public)

$$1,000 \text{ gpd} * 1/7.48 \text{ cf/gal} * 1/24 \text{ day/hour} * 1/60 \text{ hour/min} * 1/60 \text{ min/sec} * 16.9 \text{ acres} \\ = 0.03 \text{ cfs}$$

Total existing flow in 12” main = 0.49 cfs

The planned development includes 657 units with ground level parking, of which 339 units will connect to the existing 12” sewer main.

Additional Proposed Flows in 12” Main

High-density residential/commercial

$$8,964 \text{ gpd} * 1/7.48 \text{ cf/gal} * 1/24 \text{ day/hour} * 1/60 \text{ hour/min} * 1/60 \text{ min/sec} * 4.7 \text{ acres} \\ = 0.065 \text{ cfs}$$

Total proposed flow at manhole at West side of site = 0.56 cfs

Capacity of 12" VCP sewer at 0.24% = 1.62 cfs flowing full
= 0.81 cfs flowing ½ full

Existing flows in the 8" main:

"C-2" Zoning:
(Anaheim General Plan Sewage Generation classification General Commercial)

$4,738 \text{ gpd} * 1/7.48 \text{ cf/gal} * 1/24 \text{ day/hour} * 1/60 \text{ hour/min} * 1/60 \text{ min/sec} * 2.3 \text{ acres}$
= 0.017 cfs

Total existing flow in 8" main = 0.017 cfs

The planned development includes 657 units with ground level parking, of which 318 units will connect to the existing 8" sewer main in Recreation Circle.

Additional Proposed Flows in 8" Main

High-density residential/commercial

$8,964 \text{ gpd} * 1/7.48 \text{ cf/gal} * 1/24 \text{ day/hour} * 1/60 \text{ hour/min} * 1/60 \text{ min/sec} * 3.1 \text{ acres}$
= 0.043 cfs

Total proposed flow at manhole at intersection of Recreation Circle and Magnolia Ave = 0.06 cfs

Capacity of 8" VCP sewer at 0.80% = 1.10 cfs flowing full
= 0.53 cfs flowing ½ full



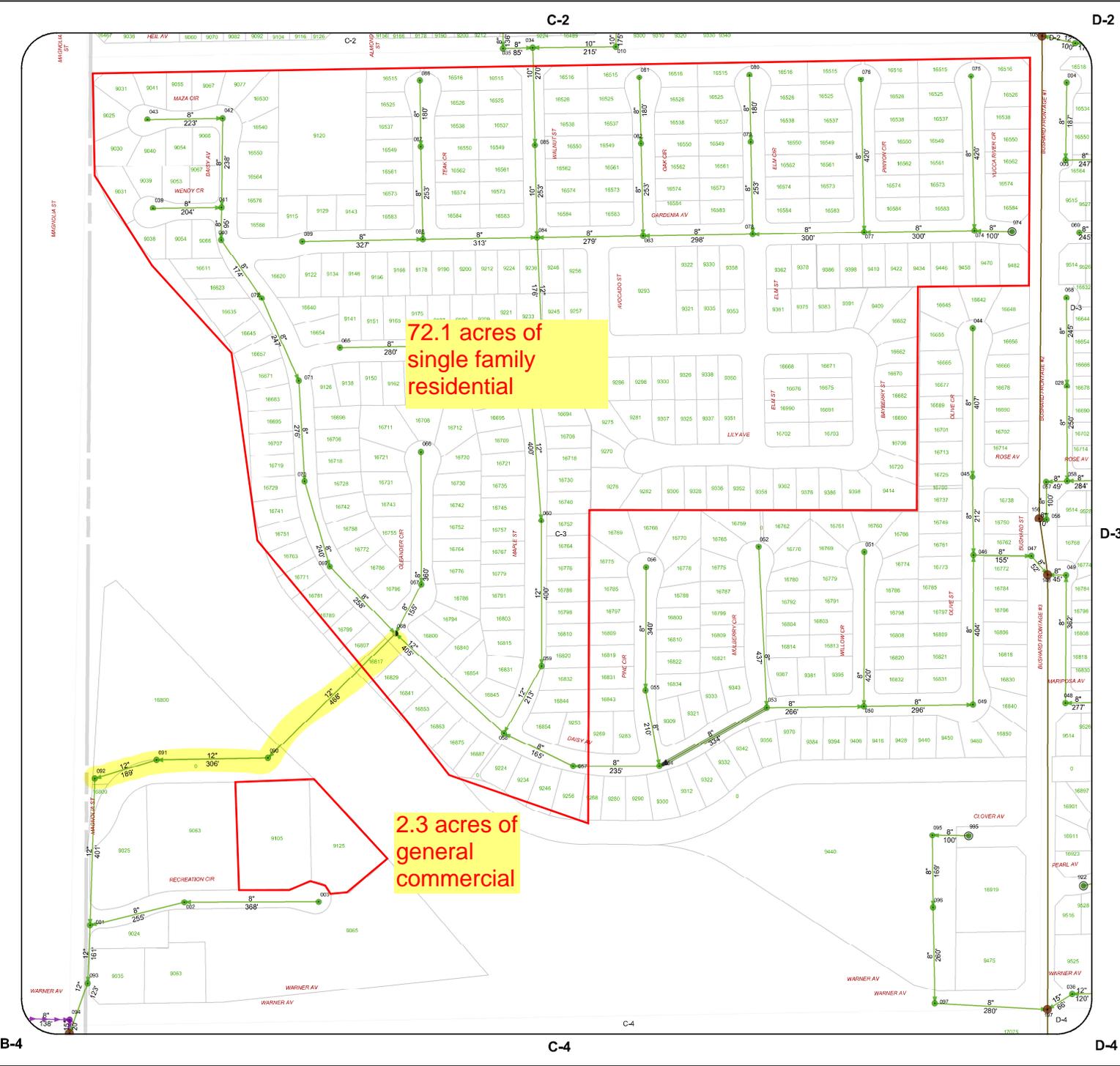
Labib Funk + Associates
Structural | Civil Engineers



Burnett + Young
Shoring Engineers

Conclusion

This sewer analysis indicates that the existing city sewer system is capable of accommodating the increase in sewage flows that will result with the construction of the proposed development. The analysis considers only the proposed development site and the upstream tributary developments on the North side of Interstate 405 and north of Heil Ave. between Magnolia St. and Bushard St. The city sewer atlas follows this report for the reference of the reviewer.



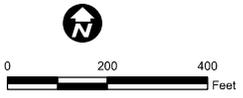
72.1 acres of single family residential

2.3 acres of general commercial

LEGEND:

- Manhole Owner/Type
Fountain Valley MH's
Drop MH's
Drop MH and Coated
Coated MH's (FV)
Private MH's
Midway MH's
Cleanout
Private Cleanout
OCSD MH's
Garden Grove MH's
Huntington Beach MH's
Pump Station
Pump Station (Private)
Pipe Owner/Type
Fountain Valley Pipes
Private Sewer Pipes
Overflow Pipes (FV)
Midway Sewer Line
Garden Grove Pipes
Abandoned Pipes (FV)
Huntington Beach Main
Liner Pipe (FV)
Siphon (FV)
OCSD Trunk Line
City Boundary

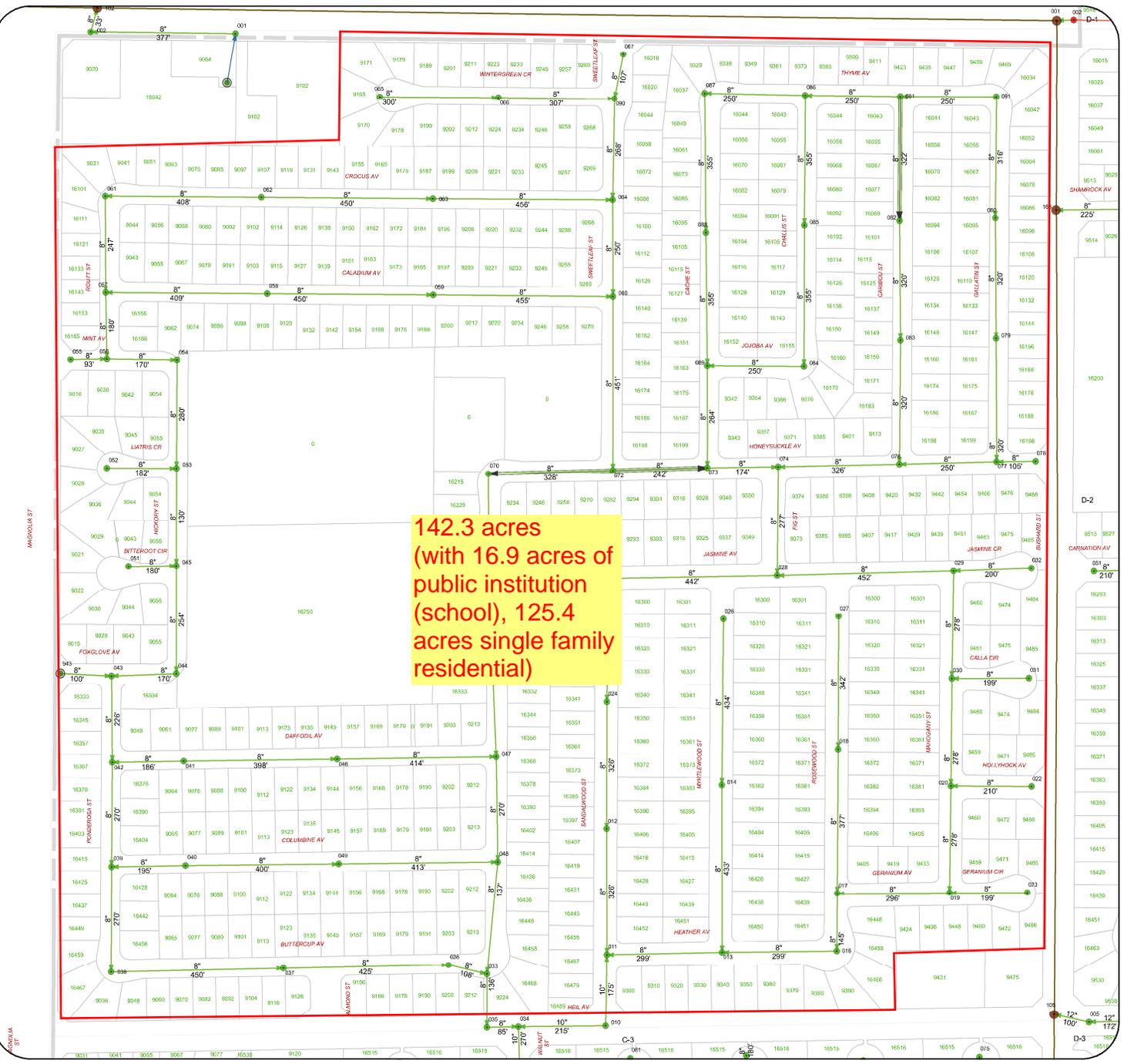
Grid index table with columns D-1 to J-1 and rows C-2 to B-7. Cell C-3 is highlighted.



CITY OF FOUNTAIN VALLEY
SANITARY SEWER ATLAS MAPS
ANDERSON PENNA
CREATED: Dec 2013 SHEET NO: 6 of 46
GRID NO: C-3



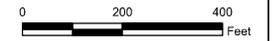
D-1



LEGEND:

- Manhole Owner/Type**
- Fountain Valley MH's
 - Drop MH's
 - Drop MH and Coated
 - Coated MH's (FV)
 - Private MH's
 - Midway MH's
 - Cleanout
 - Private Cleanout
 - OCSD MH's
 - Garden Grove MH's
 - Huntington Beach MH's
 - PS Pump Station
 - PS Pump Station (Private)
- Pipe Owner/Type**
- Fountain Valley Pipes
 - Private Sewer Pipes
 - Overflow Pipes (FV)
 - Midway Sewer Line
 - Garden Grove Pipes
 - Abandoned Pipes (FV)
 - Huntington Beach Main
 - Liner Pipe (FV)
 - Siphon (FV)
 - OCSD Trunk Line
 - City Boundary

	D-1	E-1	F-1	G-1	H-1	J-1
C-2	D-2	E-2	F-2	G-2	H-2	J-2
C-3	D-3	E-3	F-3	G-3	H-3	J-3
B-4	C-4	D-4	E-4	F-4	G-4	H-4
B-5	C-5	D-5	E-5	F-5	G-5	H-5
B-6	C-6	D-6	E-6	F-6	G-6	H-6
B-7	C-7	D-7	E-7	F-7	G-7	H-7



CITY OF FOUNTAIN VALLEY

SANITARY SEWER ATLAS MAPS

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	<p>GRID NO: C-2</p>	

D-3

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