

PRELIMINARY WATER REPORT

for

COSANTI COMMONS

7000 E. Shea Boulevard

Scottsdale, Arizona

Prepared For:

ESG Architecture & Design

1000 Washington Avenue South

Minneapolis, MN 55415

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PRELIMINARY Basis of Design Report

ACCEPTED

ACCEPTED AS NOTED

REVISE AND RESUBMIT



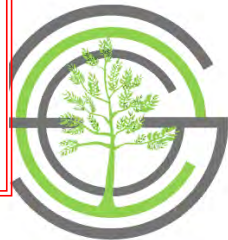
Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.

For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY JCampo

DATE 4/17/2024

Prepared by:



SEG



Water conservation tables not updated with correct unit number and associated demand.

Sustainability Engineering Group

5240 N. 16th Street, Ste. 105

Phoenix, AZ 85016

480.588.7226 www.azSEG.com

Project Number: 230113

Submittal Date: December 18th, 2023

Submittal Date: April 8th, 2024

COS PA No.: 973-PA-2022

Plan Check No.: TBD

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1. INTRODUCTION

1.1. SUMMARY OF PROPOSED DEVELOPEMENT

Cosanti Commons is a proposed 196-unit high-density multifamily project located north of Shea Boulevard between N. 70th Street and N. 71st Street in Scottsdale, Arizona. The project will raze an existing office complex on the eastern portion of the site and construct 1-, 2- and 3-bedroom residential units. The existing commercial development on the western portion of the site will be maintained. Domestic, fire and irrigation service to the residential development will be provided off the existing public 8" ACP water line looping through the site. The purpose of this preliminary report is to provide a water analysis for general plan and zoning review. Refer to **FIGURE 1** for a vicinity map.

1.2. LEGAL DESCRIPTION

The existing parcel located in Section 22, Township 3 North, Range 4 East will be subdivided maintaining the existing commercial site on the west side and the proposed residential development on the east side.

- Existing APN: 175-42-140, Lot 1, 7000 E Shea Boulevard, as recorded on Book 1701, Page 37 of Maricopa County Records. The total land area is 7.255 acres, more or less.

2. DESIGN DOCUMENTATION

2.1. DESIGN COMPLIANCE

The proposed water system is designed to meet design criteria of the City of Scottsdale ("the City") Water Resources Department, the Arizona Department of Environmental Quality ("ADEQ"), and Maricopa County Environmental Services Department ("MCESD").

2.2. PROCEDURES, POLICIES AND METHODOLOGIES

The general methodology used to evaluate public water infrastructure consists of modeling a local network of water distribution mains to meet the city's pressure, velocity, and water demand requirements during daily demand and fire events. Connection to the water system is modeled as a reservoir and pump. The pump will simulate a pressure drop and available flow from the existing water system as depicted by the fire flow test.

2.3. SOFTWARE ACKNOWLEDGEMENT:

Bentley WaterCAD® Version 8i is the computer modeling tool used in this water study.

3. EXISTING CONDITIONS

3.1. EXISTING AND PROPOSED ZONING AND LAND USES

The parcel is presently zoned C-2, central business. The project is requesting rezoning to PUD-PSD, planned unit development with planned shared development overlay.

3.2. EXISTING TOPOGRAPHY, VEGETATION AND LANDFORM FEATURES:

The parcel is fully developed. The topography generally slopes to the south and west approximately

Refer to **FIGURE 2** for an aerial of the overall project existing conditions.

3.3. EXISTING WATER INFRASTRUCTURE:

See **FIGURE 3** - City of Scottsdale (QS 29-44)

- A 12" ACP main is located in Shea Boulevard approximately 28' south of the street centerline running east-west along the entire frontage.
- An 8" ACP main is located in North 70th Street approximately 24' east of the street centerline running north-south along the entire frontage.
- An 8" ACP main is located in East Sahuaro Drive approximately 24' north of the street centerline across a part of the site's frontage.
- An 8" ACP main extends through the site connecting to the mains in North 70th Street and East Sahuaro Drive. The onsite main is public located within a 12' wide easement for water.
- Hydrants exist within the site and along North 70th Street and Sahuaro Drive.
- Existing building water meters and fire lines are located off the mains within the site.
- Existing meter sizes are shown on the Q-S map.

3.4. CERTIFIED FLOW TEST RESULTS OF EXISTING WATER SYSTEM:

Certified fire hydrant flow testing was performed on January 26, 2023, by Arizona Flow Testing LLC at 7:00 a.m. The fire flow test recorded a static pressure of 90.0 psi and residual pressure of 67.0 psi at 2,431 gpm. The extrapolated flow at 20 psi is 4,434 gpm.

The test adjusted to 72 psi static pressure results in a residual pressure of 49.0 psi and a flow of 2,431 gpm. The adjusted flow at 20 psi is 3,776 gpm. The City of Scottsdale requires the adjusted pressure parameters to be used in hydraulic analysis. Test documentation is included in **APPENDIX I**.

4. PROPOSED CONDITIONS

4.1. SITE PLAN:

FIGURE 4 depicts the proposed site plan. The onsite structure and service lines located on the eastern side of the site will be removed. Fee credit for existing meters removed as shown on the Q-S map in **FIGURE 3** will be requested. The existing water line running north-south will remain with the leg extending to the east removed.

The eastern portion of the property will be re-developed with a residential structure containing 196 units and require new domestic, irrigation and fire service.

4.2. PROPOSED WATER SYSTEM:

The new domestic and irrigation meters will be tapped off the existing onsite 8" ACP water line and installed with backflow prevention. Preliminarily, the new domestic meter will be two 2" and the landscape 1". A new 6" fire line will be provided with backflow provided on the fire riser. Existing fire hydrants provide adequate coverage to the existing and proposed structures. An existing located near the southwest corner of the building will be relocated 42 feet north of its current location.

The new fire department connection (FDC) will be installed at the SW corner of the new building within 100 feet of an existing fire hydrant. See **APPENDIX II** for a preliminary utility plan.

4.3. SECOND SOURCE:

The existing water system has sufficient valves to allow for shutdowns in the event of service disruption and assures second sourcing for emergency service.

4.4. WATER REQUIREMENTS:

The city's design standards govern the fire flow rates used for all buildings per Section 6-1.500 of the City of Scottsdale's Design Standards & Policies Manual ("DS&PM"), dated January 2018. The minimum fire flow is 2,500 gpm for high-rise (3-story) commercial and multi-family residential properties, per Section 6-1.501 of the DS&PM.

4.5. MAINTENANCE RESPONSIBILITIES:

Water meter and service line connections to the public main will be located within existing easements and be maintained by the city. The owner will privately maintain on-site domestic and landscape services and backflow preventers as well as the fire line.

5. WATER SYSTEM COMPUTATIONS

5.1. WATER DEMANDS

Table 1: WATER DEMAND CALCULATIONS

	Area (sq.ft.)	Dwelling Units	ADD (gpm/unit)	Avg. Day Demand (gpm)	Max. Day Demand (gpm)	Peak Hour (gpm)
Residential East	-	196	0.27	52.9	105.8	185.2
Commercial/Retail West	203,659	-	1.11E-03	226.1	452.1	791.2
TOTAL DEMAND (gpm):				279.0	558.0	976.4

For illustrative purposes, Table 2 calculates demand for the existing east and west commercial/retail buildings.

	Area (sq.ft.)	ADD (gpm/unit)	Avg. Day Demand (gpm)	Max. Day Demand (gpm)	Peak Hour (gpm)
Ex. Commercial/Retail (east)	38,596	1.11E-03	42.8	85.7	149.9
Ex. Commercial/Retail (west)	203,659	1.11E-03	226.1	452.1	791.2
TOTAL DEMAND (gpm):			268.9	537.8	941.2

Peaking Factors: Max Day = 2.0, Peak Hour = 3.5

5.2. SOFTWARE MODELING:

Bentley WaterCAD® Version 8i is the computer modeling tool used in this study.

Network analysis input parameters included the following:

- Pipe diameters (inches)
- Pipe lengths (feet)
- Pipes invert elevations (feet – MSL)
- A reservoir and a pump to model the fire flow test.
- System demands (gpm)
- Fire flows (gpm)
- Model piping is ductile iron pipe using Hazen-Williams frictional losses (C = 130)

Output parameters included but were not limited to:

- Pressure (psi)
- Flow rates (gpm)
- Velocities (fps)

5.3. MINIMUM PRESSURE REQUIREMENTS:

The following system pressure requirements are in accordance with the City's design standards:

Average day, maximum day and peak hour flow demands:

- Minimum pressure = 50 psi
- Maximum pressure = 120 psi

Maximum day plus coincident fire flow demand:

- Minimum pressure = 30 psi
- Maximum pressure = 120 psi

Head loss in the public mains shall not exceed 10 feet per 1,000 feet length of pipe.

5.4. WATER SYSTEM ANALYSIS:

A summary of the modeling results is presented below in Table 2. Detailed WaterCAD® reports are presented in **APPENDIX III**.

Demand Scenario	Water Demand (GPM)	Pressure (PSI)				Max. Velocity (ft/s)	Pipe ID
		Min.	Node	Max.	Node		
Average Day	279	71	J-12	72	J-10	1.44	P-12
Maximum Day	558	70	J-12	71	J-10	2.89	P-12
Peak Hour	976	66	J-8	67	J-10	5.05	P-12
FF + MDD	3,058	31	J-11	37	J-6	9.23	P-7

These results indicate that the proposed water system meets the City’s criteria for daily water usage and fire flow events.

6. SUMMARY / CONCLUSIONS

6.1. Summary:

The proposed water connections are designed to meet criteria of the City’s Design Standards and Policies Manual, the Arizona Department of Environmental Quality (“ADEQ”), and Maricopa County Environmental Services Department (“MCESD”).

The hydraulic output indicates that the surrounding existing public water system and fire hydrants are sufficient to provide domestic, irrigation and fire service to this project.

Pressure regulating valves preset to 80 psi will be required on all water service connections to the building. Backflow prevention will be provided on all metered service connections.

6.2. PROJECT SCHEDULE:

As a residential apartment development, the infrastructure and buildings are proposed to be constructed in a single phase.

7. REFERENCES

1. COS Water Q-S MAP 29-44
2. City of Scottsdale Design Standards & Policies Manual, 2018 (Chapter 6 – Water)

8. FIGURES

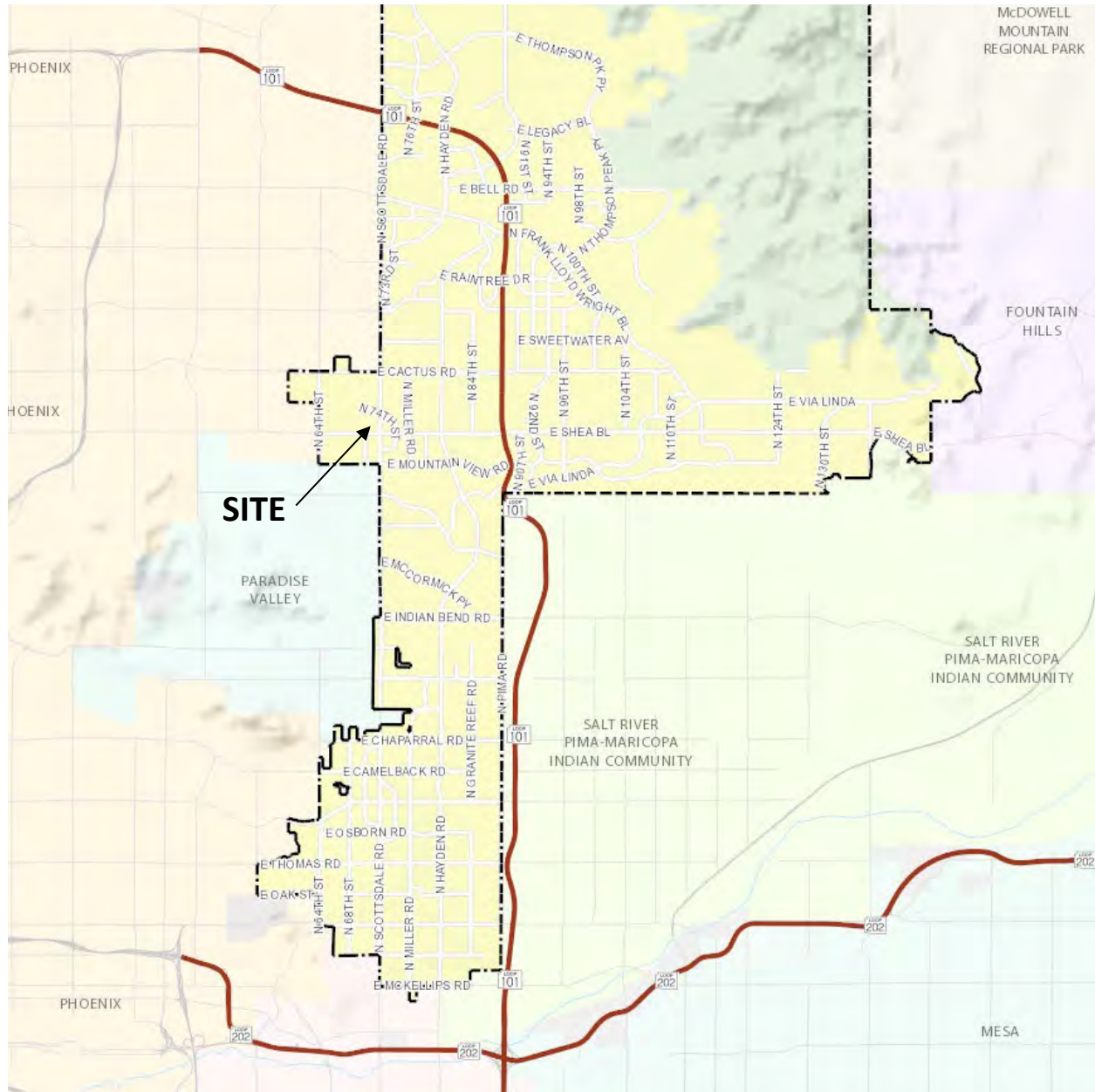
- FIGURE 1 - Vicinity Map- Local Aerial
- FIGURE 2 - Aerial
- FIGURE 3 - COS Water Q-S Map 29-44
- FIGURE 4 - Proposed Site plan

9. APPENDICIES

- APPENDIX I - Fire Hydrant Flow Test
- APPENDIX II - Preliminary Utility Plan
- APPENDIX III - Water Modeling Reports
- APPENDIX IV - COS Water Demand Exhibit

FIGURES

- 1. Vicinity Map***
- 2. Aerial***
- 3. Water Q-S 29-44***
- 4. Proposed Site Plan***



**FIGURE 1 –
Vicinity Map**

5240 N. 16th Street, Suite 105
Phoenix, AZ 85016



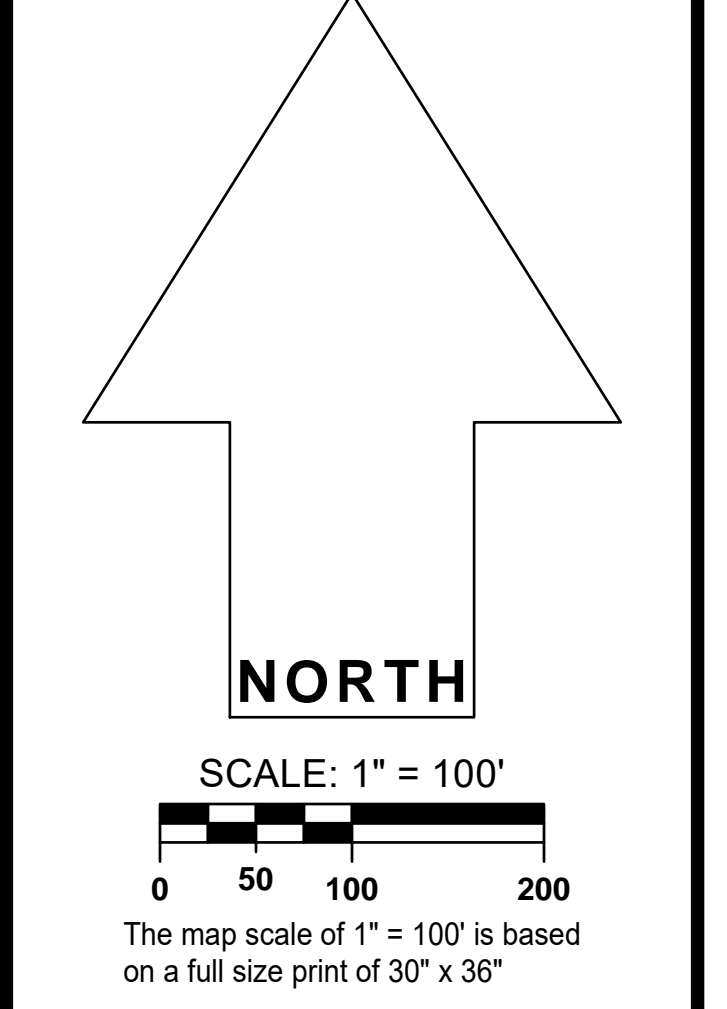
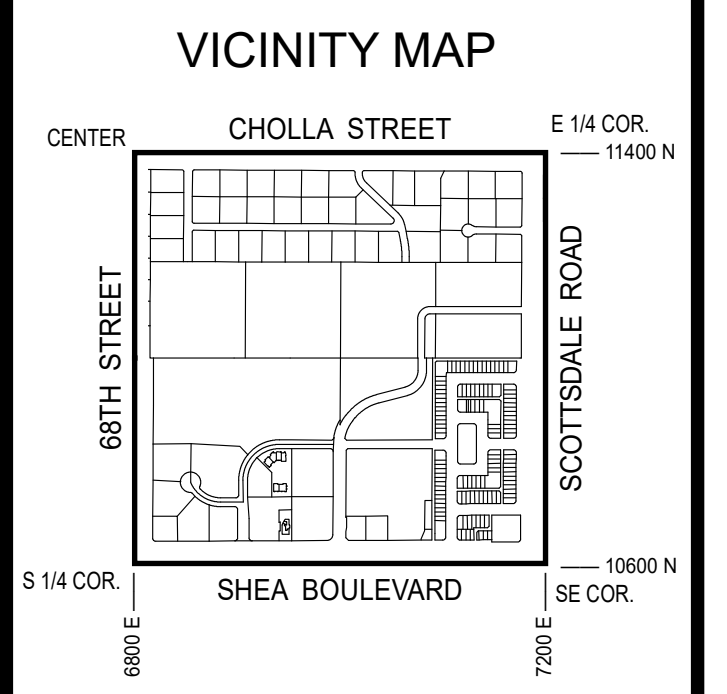
**FIGURE 2 –
Aerial**



GENERAL NOTES:
 THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
 THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

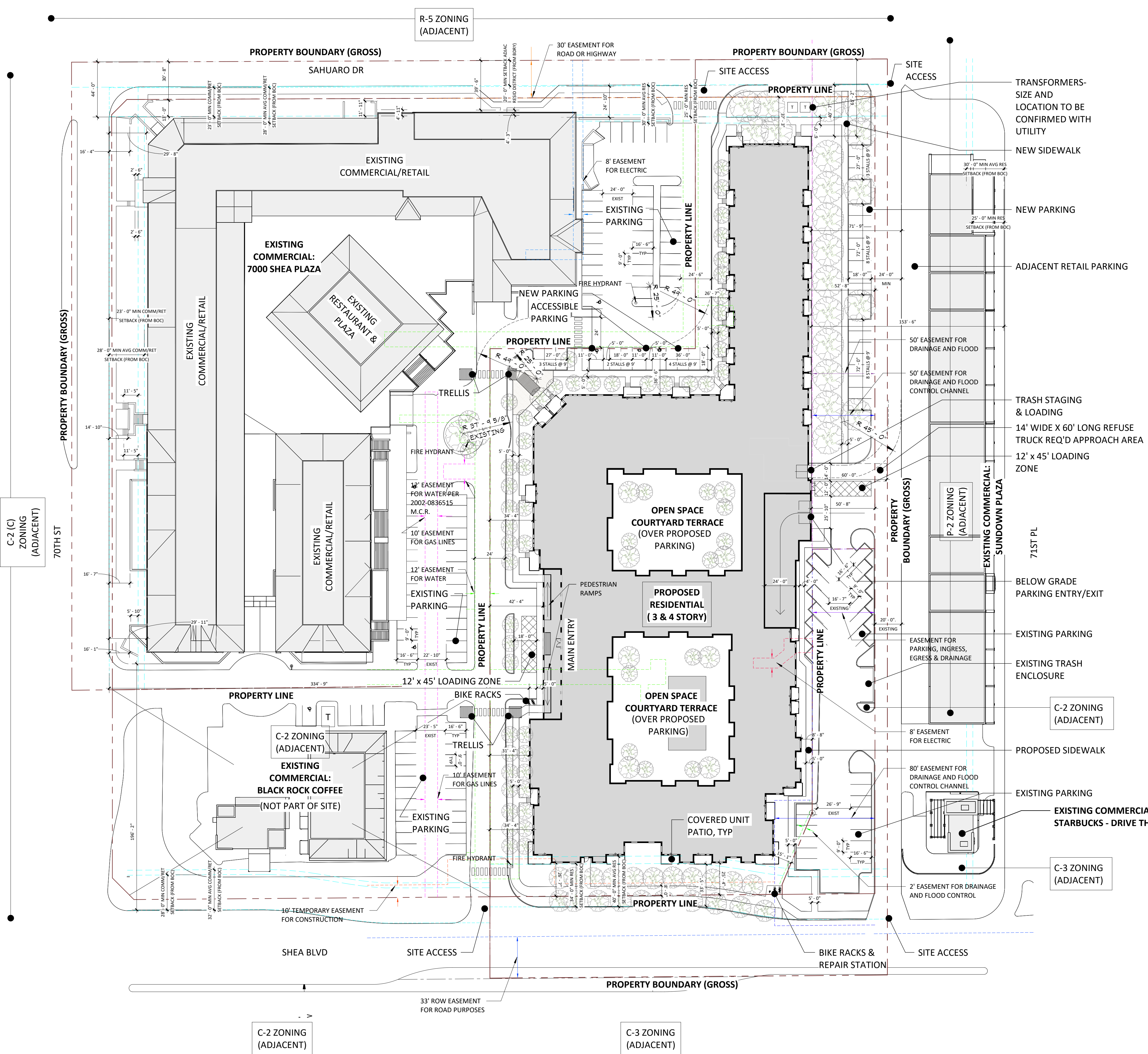
LEGEND:

Air Release Valve	(Symbol)
Non-potable Air Release Valve	(Symbol)
Blowoff	(Symbol)
Cap	(Symbol)
Cathodic Protection	(Symbol)
Fill Drain	(Symbol)
Fire Hydrant	(Symbol)
Non-GPS Point	(Symbol)
Pressure Reducing Valve	(Symbol)
Pump	(Symbol)
Reducer	(Symbol)
Sample Station	(Symbol)
Water Manhole	(Symbol)
Non-Potable Manhole	(Symbol)
Well	(Symbol)
Valve	(Symbol)
Non-potable Valve	(Symbol)
Vault	(Symbol)
Water Main	(Symbol)
Non-Potable Main	(Symbol)
Fire / Private Main	(Symbol)
Non-Scottsdale Main	(Symbol)



WATER
 QUARTER SECTION MAP
29-44
 SE 1/4 SEC. 22 T3N R4E
FIGURE 3

THIS DOCUMENT IS PROVIDED FOR GENERAL INFORMATION PURPOSES ONLY. THE CITY OF SCOTTSDALE DOES NOT WARRANT ITS ACCURACY, COMPLETENESS OR SIMILARITY FOR ANY PARTICULAR PURPOSE. IT SHOULD NOT BE RELIED UPON WITHOUT FIELD VERIFICATION.
 THE CITY OF SCOTTSDALE
 15-JAN-23



PROJECT DATA SUMMARY	
Case No:	TBD
Project Address:	COMMERCIAL/RETAIL BUILDINGS: 7000 E Shea Blvd, Bldgs A, B, C, D, E, G, H and multiple suite numbers (existing per County) RESIDENTIAL BUILDING: TBD -- (7000 E Shea Blvd, Bldg J - existing per County) Scottsdale, AZ 85254
APN (EXISTING):	EXISTING COMMERCIAL/RETAIL SITE: 175-42-1365 (per County) EXISTING RESIDENTIAL SITE: 175-42-1365 (per County)
APN (PROPOSED):	OVERALL SITE: TBD -- (175-42-1365 -- existing per County)
QS:	EXISTING COMMERCIAL/RETAIL SITE + RESIDENTIAL SITE: 29-44
Zoning Classification (EXISTING):	EXISTING COMMERCIAL/RETAIL SITE: C-2 (Central Business) EXISTING RESIDENTIAL SITE: C-2 (Central Business)
Zoning Classification (PROPOSED):	OVERALL SITE: PUD-PSD (Planned Unit Development with Planned Shared Development Overlay)
Site Area Gross Overall (PROPOSED):	±383,577 S.F. (±8.806 A.C.)
Site Area Net Overall (PROPOSED):	±322,023 S.F. (±7.393 A.C.)
Common/Usable Open Space (REQUIRED):	±38,358 S.F. (10% of gross site area); 29,425 S.F. exists
Common Open/Usable Open/Unusable Open Space (PROPOSED):	±64,000 S.F. (16.7% of gross site area); ±34,575 new S.F. proposed
Total Building Area (PROPOSED):	EXISTING COMMERCIAL/RETAIL SITE: ±297,000 GSF (includes below-grade pkg) NEW RESIDENTIAL: ±377,000 GSF (includes below-grade pkg)
Commercial FAR ALLOWED (overall net site area):	Commercial uses: 0.8 FAR max. (0.8 x 322,023 S.F. (net) = 257,618 S.F.)
Commercial FAR PROPOSED (overall net site area):	0.64 FAR (±207,000 S.F./322,023 S.F. (net) = 0.643) -- overall site will not exceed 0.8 FAR for Commercial (non-residential) uses
Residential Density PROPOSED:	23.17 DU/acre (204 DU/±8.806 acres)
Total Units PROPOSED:	204 UNITS
	1-BR: 129 UNITS
	2-BR: 71 UNITS
	3-BR: 4 UNITS
	283 BEDROOMS
Workforce Housing PROPOSED:	20 UNITS
Building Height ALLOWED:	48'-0" maximum with 10'-0" overage allowed for certain roof elements covering no more than 30% of building area
Building Height PROPOSED:	55'-0" + mechanical per ordinance
Vehicle Parking REQUIRED:	±595 stalls
Vehicle Parking PROPOSED:	±729 stalls

FIGURE 4 - Proposed Site Plan

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APPENDICIES

- I. FH Flow Test***
- II. Preliminary Utility Plan***
- III. Water Model Reports***

Arizona Flow Testing LLC

HYDRANT FLOW TEST REPORT

Project Name: 7000 Shea Blvd.
Project Address: 7000 East Shea Blvd., Scottsdale, Arizona, 85254
Client Project No.: Not Provided
Arizona Flow Testing Project No.: 23045
Flow Test Permit No.: C71231
Date and time flow test conducted: January 26, 2023 at 7:00 AM
Data is current and reliable until: July 26, 2023
Conducted by: Floyd Vaughan – Arizona Flow Testing, LLC (480-250-8154)
Witnessed by: Chris Mendez – City of Scottsdale-Inspector (602-9028-9046)

Raw Test Data

Static Pressure: **90.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **67.0 PSI**
(Measured in pounds per square inch)

Pitot Pressure: **32.0 PSI**
(Measured in pounds per square inch)

Diffuser Orifice Diameter: One 4-inch Pollard Diffuser
(Measured in inches)

Coefficient of Diffuser: 0.9

Flowing GPM: **2,431 GPM**
(Measured in gallons per minute)

GPM @ 20 PSI: **4,434 GPM**

Data with 18 PSI Safety Factor

Static Pressure: **72.0 PSI**
(Measured in pounds per square inch)

Residual Pressure: **49.0 PSI**
(Measured in pounds per square inch)

Approx. distance between hydrants: 280 Feet

Main size: 8-Inch

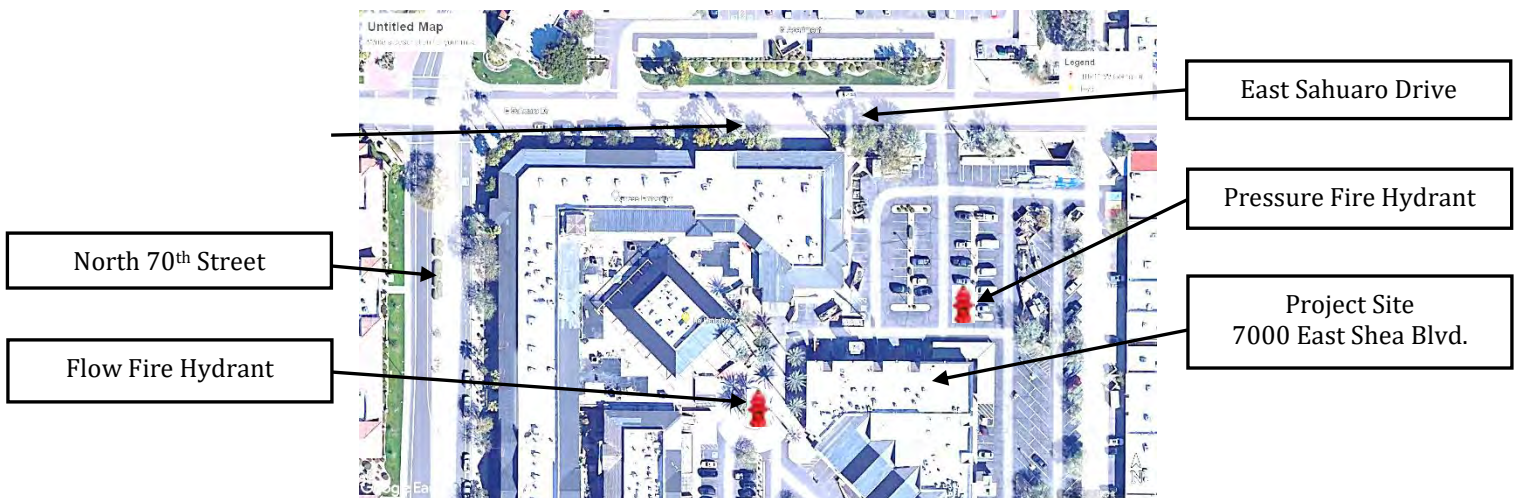
Flowing GPM: **2,431 GPM**

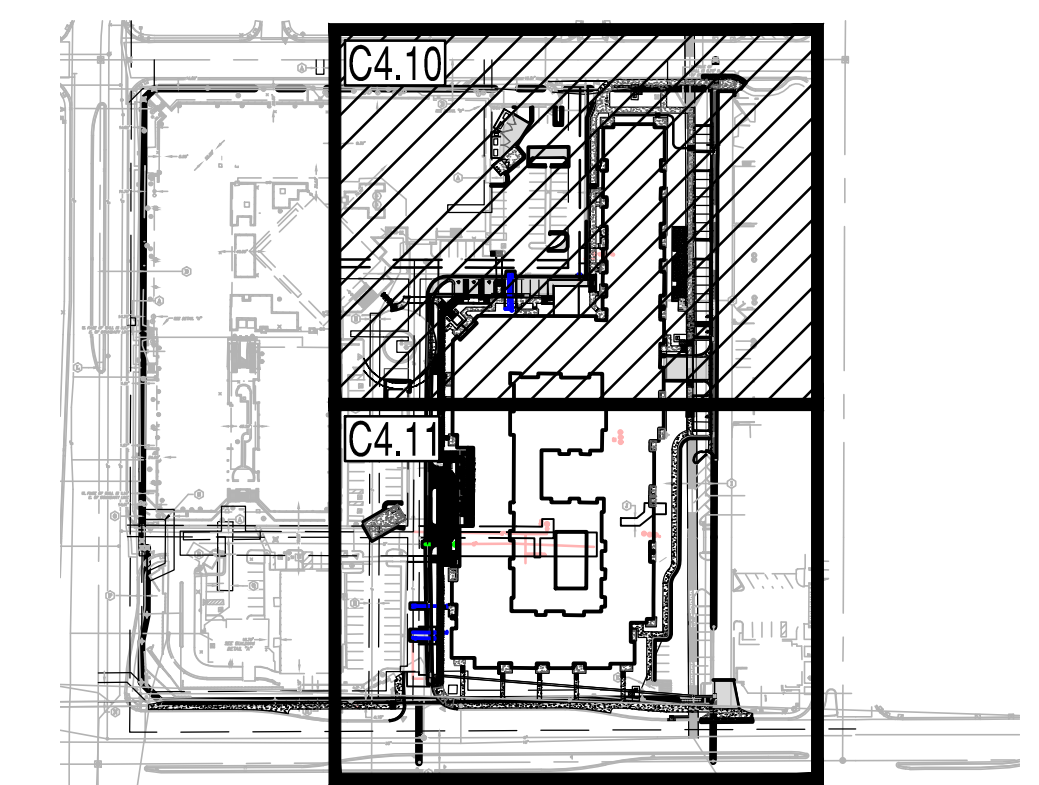
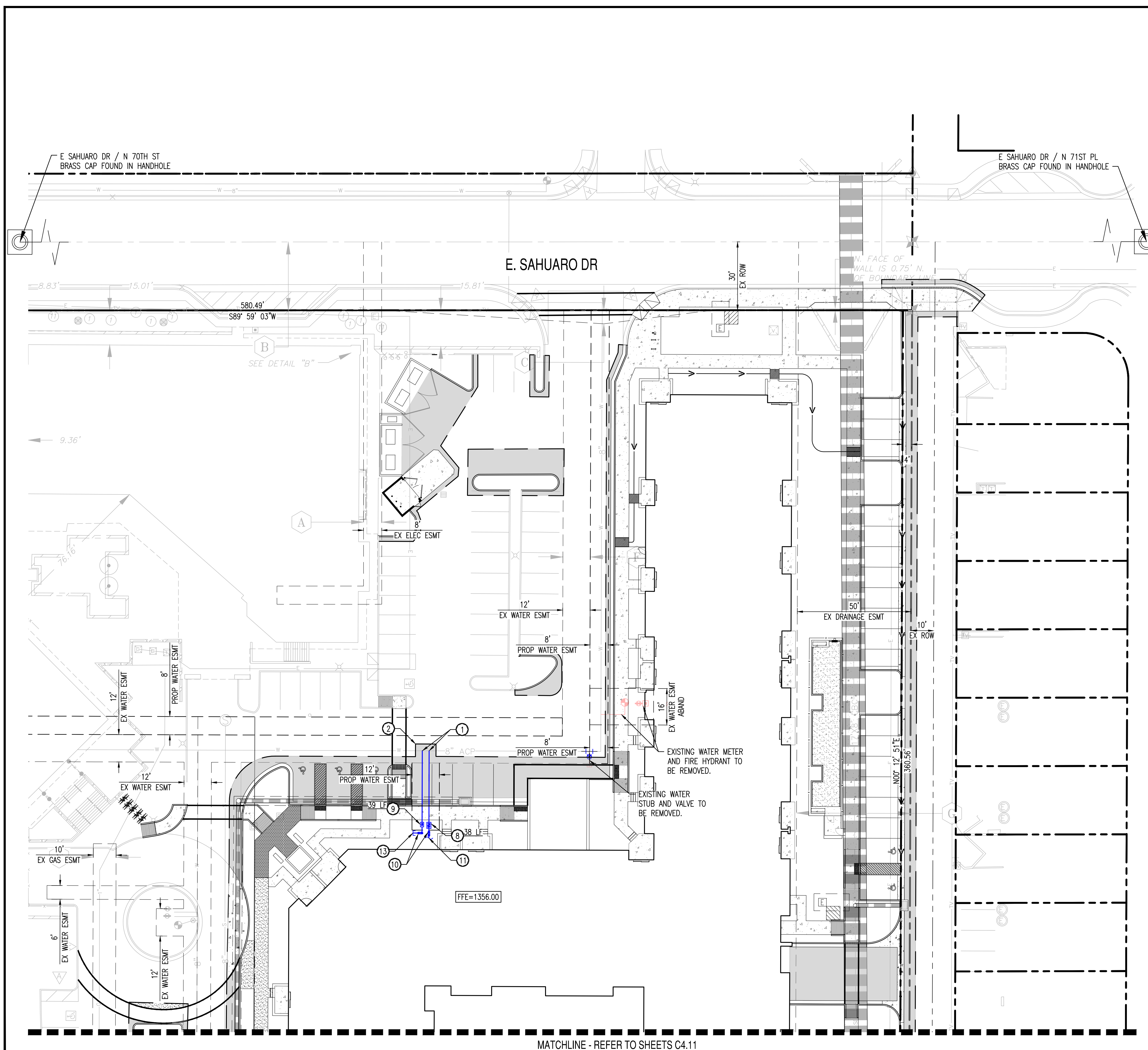
GPM @ 20 PSI: **3,776 GPM**

Scottsdale requires a maximum Static Pressure of 72 PSI for AFES Design.

Flow Test Location

North ↑





PRELIMINARY WATER NOTES

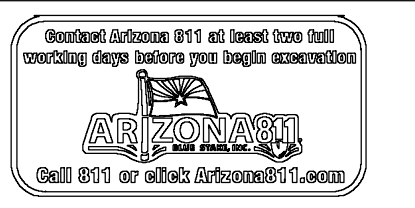
- ① CONNECTION TO EXISTING WATER LINE.
- ② SAWCUT, REMOVE AND REPLACE EXISTING PAVEMENT.
- ⑧ 2" COPPER DOMESTIC SERVICE CONNECTION.
- ⑨ 1" IRRIGATION SERVICE CONNECTION.
- ⑩ BACKFLOW PREVENTION, SIZE TO MATCH WATER METER SIZE.
- ⑪ DOMESTIC CONNECTION TO BUILDING.
- ⑬ CAP WATER LINE END AND PROVIDE MARKER.

PRELIMINARY
NOT FOR
CONSTRUCTION

SUSTAINABILITY
ENGINEERING
GROUP



esg



PROJECT: COSANT COMMONS
LOCATION: 7000 E. SHEA BLVD
SCOTTSDALE, AZ 85254

DRAWN: JC 01/29/2024
DESIGNED: JC 01/29/2024
CHECKED: JC 01/29/2024
FINAL: JC
PROJ. MGR: AF 01/29/2024
DATE: 01/29/2024

ISSUED FOR: CONCEPTUAL DESIGN

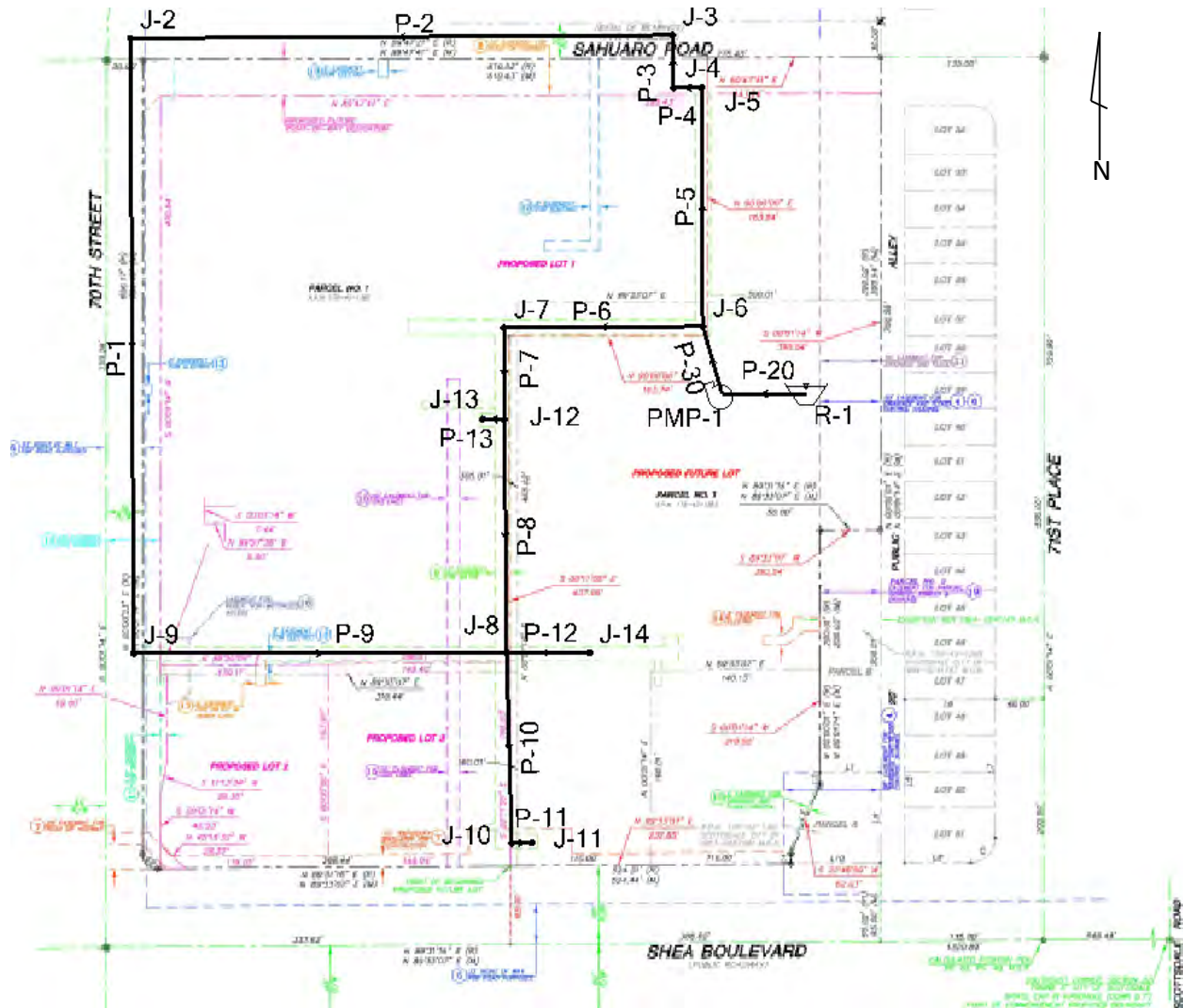
REVISION NO.: DATE:

JOB NO.: 230113

SHEET TITLE: UTILITY PLAN

PAGE NO.: SHEET NO.: C4.10

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APPENDIX III

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 105 Phoenix, AZ 85016
 480.588.7226

Average Day Demand
Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-2	1,354.40	0	1,520.18	72	165.78	72
J-3	1,356.10	0	1,520.26	71	164.16	71
J-4	1,356.40	0	1,520.27	71	163.87	71
J-5	1,356.10	0	1,520.28	71	164.18	71
J-6	1,355.20	0	1,520.32	71	165.12	71
J-7	1,355.10	0	1,520.17	71	165.07	71
J-8	1,354.20	0	1,520.02	72	165.82	72
J-9	1,352.60	0	1,520.08	72	167.48	72
J-10	1,352.90	0	1,520.02	72	167.12	72
J-11	1,352.90	0	1,520.02	72	167.12	72
J-12	1,355.20	0	1,520.11	71	164.91	71
J-13	1,354.80	53	1,520.11	72	165.31	72
J-14	1,353.80	226	1,519.94	72	166.14	72

Average Day Demand
Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Material	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	8.0	Ductile Iron	509	J-2	J-9	130.0	0.000	0.55
P-2	8.0	Ductile Iron	449	J-2	J-3	130.0	0.000	0.55
P-3	8.0	Ductile Iron	44	J-3	J-4	130.0	0.000	0.55
P-4	8.0	Ductile Iron	23	J-4	J-5	130.0	0.000	0.55
P-5	8.0	Ductile Iron	198	J-5	J-6	130.0	0.000	0.55
P-6	8.0	Ductile Iron	165	J-6	J-7	130.0	0.001	1.23
P-7	8.0	Ductile Iron	76	J-7	J-12	130.0	0.001	1.23
P-8	8.0	Ductile Iron	193	J-12	J-8	130.0	0.000	0.89
P-9	8.0	Ductile Iron	309	J-8	J-9	130.0	0.000	0.55
P-10	8.0	Ductile Iron	157	J-10	J-8	130.0	0.000	0.00
P-11	8.0	Ductile Iron	17	J-10	J-11	130.0	0.000	0.00
P-12	8.0	Ductile Iron	69	J-8	J-14	130.0	0.001	1.44
P-13	8.0	Ductile Iron	18	J-13	J-12	130.0	0.000	0.34
P-20	24.0	Ductile Iron	70	PMP-1	R-1	130.0	0.000	0.20
P-30	24.0	Ductile Iron	58	PMP-1	J-6	130.0	0.000	0.20

Average Day Demand
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial, Transient)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,354.50	On	1,355.00	1,520.32	279	165.32	PMP-1

Average Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,355.00	279	1,355.00

Maximum Day Demand
Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-2	1,354.40	0	1,517.29	70	162.89	70
J-3	1,356.10	0	1,517.61	70	161.51	70
J-4	1,356.40	0	1,517.64	70	161.24	70
J-5	1,356.10	0	1,517.66	70	161.56	70
J-6	1,355.20	0	1,517.80	70	162.60	70
J-7	1,355.10	0	1,517.28	70	162.18	70
J-8	1,354.20	0	1,516.72	70	162.52	70
J-9	1,352.60	0	1,516.93	71	164.33	71
J-10	1,352.90	0	1,516.72	71	163.82	71
J-11	1,352.90	0	1,516.72	71	163.82	71
J-12	1,355.20	0	1,517.05	70	161.85	70
J-13	1,354.80	106	1,517.04	70	162.24	70
J-14	1,353.80	452	1,516.43	70	162.63	70

**Maximum Day Demand
Pipe Table - Time: 0.00 hours**

Label	Diameter (in)	Material	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	8.0	Ductile Iron	509	J-2	J-9	130.0	0.001	1.10
P-2	8.0	Ductile Iron	449	J-2	J-3	130.0	0.001	1.10
P-3	8.0	Ductile Iron	44	J-3	J-4	130.0	0.001	1.10
P-4	8.0	Ductile Iron	23	J-4	J-5	130.0	0.001	1.10
P-5	8.0	Ductile Iron	198	J-5	J-6	130.0	0.001	1.10
P-6	8.0	Ductile Iron	165	J-6	J-7	130.0	0.003	2.46
P-7	8.0	Ductile Iron	76	J-7	J-12	130.0	0.003	2.46
P-8	8.0	Ductile Iron	193	J-12	J-8	130.0	0.002	1.78
P-9	8.0	Ductile Iron	309	J-8	J-9	130.0	0.001	1.10
P-10	8.0	Ductile Iron	157	J-10	J-8	130.0	0.000	0.00
P-11	8.0	Ductile Iron	17	J-10	J-11	130.0	0.000	0.00
P-12	8.0	Ductile Iron	69	J-8	J-14	130.0	0.004	2.89
P-13	8.0	Ductile Iron	18	J-13	J-12	130.0	0.000	0.68
P-20	24.0	Ductile Iron	70	PMP-1	R-1	130.0	0.000	0.40
P-30	24.0	Ductile Iron	58	PMP-1	J-6	130.0	0.000	0.40

Maximum Day Demand
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial, Transient)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,354.50	On	1,355.00	1,517.80	558	162.80	PMP-1

Maximum Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,355.00	558	1,355.00

Peak Hour Demand
Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-2	1,354.40	0	1,510.04	67	155.64	67
J-3	1,356.10	0	1,510.93	67	154.83	67
J-4	1,356.40	0	1,511.02	67	154.62	67
J-5	1,356.10	0	1,511.07	67	154.97	67
J-6	1,355.20	0	1,511.46	68	156.26	68
J-7	1,355.10	0	1,510.01	67	154.91	67
J-8	1,354.20	0	1,508.41	67	154.21	67
J-9	1,352.60	0	1,509.03	68	156.43	68
J-10	1,352.90	0	1,508.41	67	155.51	67
J-11	1,352.90	0	1,508.41	67	155.51	67
J-12	1,355.20	0	1,509.35	67	154.15	67
J-13	1,354.80	185	1,509.33	67	154.53	67
J-14	1,353.80	791	1,507.60	67	153.80	67

Peak Hour Demand
Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Material	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	8.0	Ductile Iron	509	J-2	J-9	130.0	0.002	1.93
P-2	8.0	Ductile Iron	449	J-2	J-3	130.0	0.002	1.93
P-3	8.0	Ductile Iron	44	J-3	J-4	130.0	0.002	1.93
P-4	8.0	Ductile Iron	23	J-4	J-5	130.0	0.002	1.93
P-5	8.0	Ductile Iron	198	J-5	J-6	130.0	0.002	1.93
P-6	8.0	Ductile Iron	165	J-6	J-7	130.0	0.009	4.30
P-7	8.0	Ductile Iron	76	J-7	J-12	130.0	0.009	4.30
P-8	8.0	Ductile Iron	193	J-12	J-8	130.0	0.005	3.12
P-9	8.0	Ductile Iron	309	J-8	J-9	130.0	0.002	1.93
P-10	8.0	Ductile Iron	157	J-10	J-8	130.0	0.000	0.00
P-11	8.0	Ductile Iron	17	J-10	J-11	130.0	0.000	0.00
P-12	8.0	Ductile Iron	69	J-8	J-14	130.0	0.012	5.05
P-13	8.0	Ductile Iron	18	J-13	J-12	130.0	0.001	1.18
P-20	24.0	Ductile Iron	70	PMP-1	R-1	130.0	0.000	0.69
P-30	24.0	Ductile Iron	58	PMP-1	J-6	130.0	0.000	0.69

Peak Hour Demand
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial, Transient)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,354.50	On	1,354.99	1,511.47	977	156.47	PMP-1

Peak Hour Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,355.00	977	1,355.00

Fire Flow Demand
Fire Flow Results Table - Time: 0.00 hours

Label	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Maximum) (psi)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)
J-2	1,500	2,500	70	2,500	24	J-9	P-5	9.91
J-3	1,500	2,500	70	2,500	29	J-4	P-5	12.43
J-4	1,500	2,500	70	2,500	30	J-3	P-5	12.79
J-5	1,500	2,500	70	2,500	30	J-4	P-5	12.99
J-6	1,500	2,500	70	2,500	37	J-4	P-12	2.89
J-7	1,500	2,500	70	2,500	30	J-12	P-6	15.05
J-8	1,500	2,500	70	2,500	25	J-14	P-6	13.06
J-9	1,500	2,500	71	2,500	24	J-8	P-6	11.73
J-10	1,500	2,500	71	2,500	19	J-11	P-10	15.96
J-11	1,500	2,500	71	2,500	18	J-10	P-11	15.96
J-12	1,500	2,500	70	2,500	28	J-13	P-6	14.32
J-13	1,606	2,500	70	2,606	28	J-12	P-13	16.63
J-14	1,952	2,500	70	2,952	21	J-8	P-12	18.84

Split FF
Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
J-2	1,354.40	0	1,434.69	35	80.29	35
J-3	1,356.10	0	1,437.99	35	81.89	35
J-4	1,356.40	0	1,438.31	35	81.91	35
J-5	1,356.10	0	1,438.49	36	82.39	36
J-6	1,355.20	1,000	1,439.94	37	84.74	37
J-7	1,355.10	0	1,433.98	34	78.88	34
J-8	1,354.20	0	1,428.68	32	74.48	32
J-9	1,352.60	0	1,430.95	34	78.35	34
J-10	1,352.90	0	1,425.81	32	72.91	32
J-11	1,352.90	1,000	1,425.51	31	72.61	31
J-12	1,355.20	500	1,431.24	33	76.04	33
J-13	1,354.80	106	1,431.23	33	76.43	33
J-14	1,353.80	452	1,428.39	32	74.59	32

Split FF
Pipe Table - Time: 0.00 hours

Label	Diameter (in)	Material	Length (ft)	Start Node	Stop Node	Hazen-Williams C	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	8.0	Ductile Iron	509	J-2	J-9	130.0	0.007	3.91
P-2	8.0	Ductile Iron	449	J-2	J-3	130.0	0.007	3.91
P-3	8.0	Ductile Iron	44	J-3	J-4	130.0	0.007	3.91
P-4	8.0	Ductile Iron	23	J-4	J-5	130.0	0.007	3.91
P-5	8.0	Ductile Iron	198	J-5	J-6	130.0	0.007	3.91
P-6	8.0	Ductile Iron	165	J-6	J-7	130.0	0.036	9.23
P-7	8.0	Ductile Iron	76	J-7	J-12	130.0	0.036	9.23
P-8	8.0	Ductile Iron	193	J-12	J-8	130.0	0.013	5.36
P-9	8.0	Ductile Iron	309	J-8	J-9	130.0	0.007	3.91
P-10	8.0	Ductile Iron	157	J-10	J-8	130.0	0.018	6.38
P-11	8.0	Ductile Iron	17	J-10	J-11	130.0	0.018	6.38
P-12	8.0	Ductile Iron	69	J-8	J-14	130.0	0.004	2.89
P-13	8.0	Ductile Iron	18	J-13	J-12	130.0	0.000	0.68
P-20	24.0	Ductile Iron	70	PMP-1	R-1	130.0	0.001	2.17
P-30	24.0	Ductile Iron	58	PMP-1	J-6	130.0	0.001	2.17

Split FF
Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial, Transient)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,354.50	On	1,354.95	1,439.98	3,058	85.03	PMP-1

Split FF

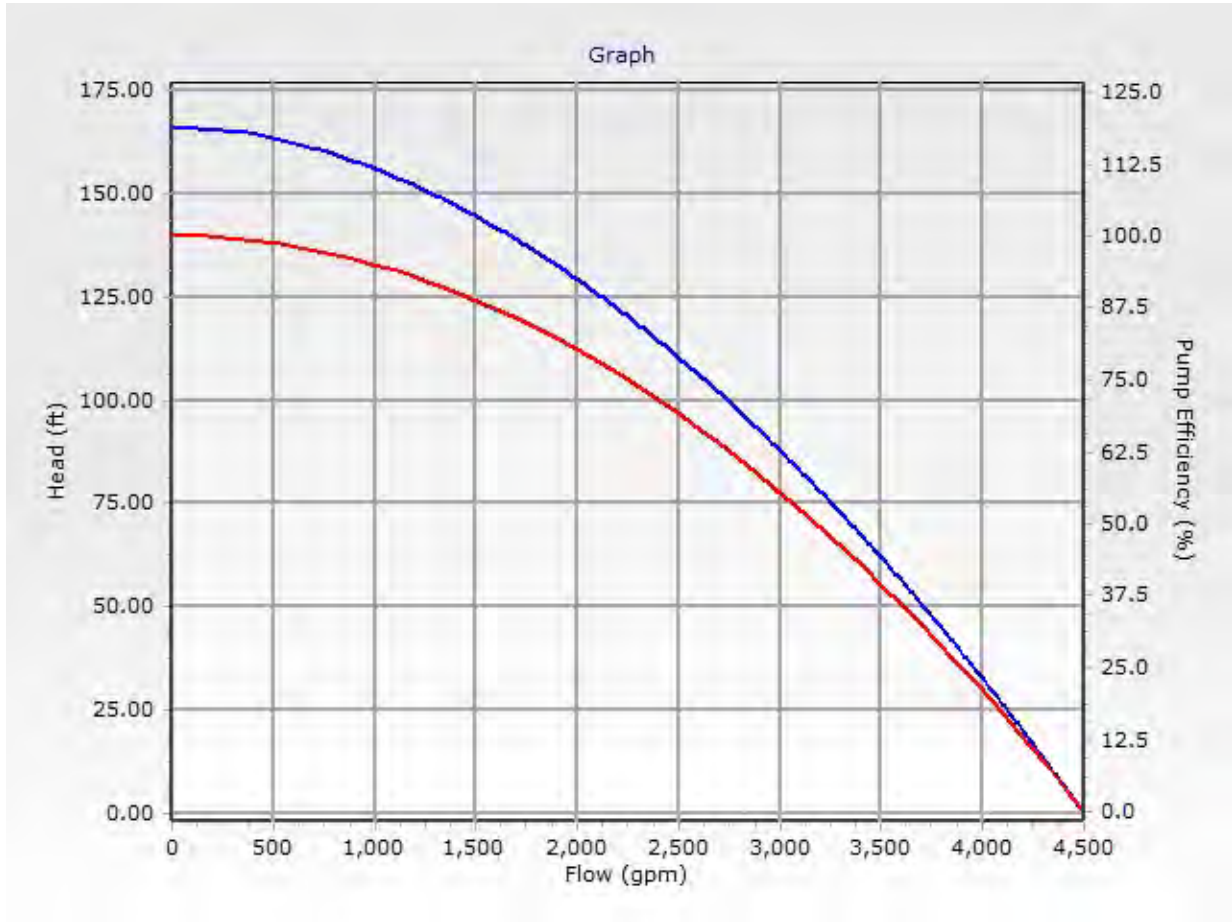
Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,355.00	3,058	1,355.00

7000 Block Shea Blvd.wtg
Active Scenario: ADD
Pump Definition Detailed Report: PMP-1

Element Details			
ID	77	Notes	
Label	PMP-1		
Pump Definition Type			
Pump Definition Type	Standard (3 Point)	Design Head	113.16 ft
Shutoff Flow	0 gpm	Maximum Operating Flow	3,776 gpm
Shutoff Head	166.28 ft	Maximum Operating Head	46.19 ft
Design Flow	2,431 gpm		
Pump Efficiency Type			
Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0 gpm		
Transient (Physical)			
Inertia (Pump and Motor)	0.000 lb·ft ²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

7000 Block Shea Blvd.wtg
Active Scenario: ADD
Pump Definition Detailed Report: PMP-1



INSTRUCTIONS

IDENTIFY WATER CONSERVATION MEASURES ABOVE THOSE REQUIRED BY CITY CODE THAT THE DEVELOPMENT(S) PROPOSE TO IMPLEMENT. ENTER AN "X" FOR EACH PROPOSED MEASURE.

TABLE 2: APPROVED SUPPLEMENTAL WATER CONSERVATION MEASURES		
7000 Block Shea Boulevard - 973-PA-2022		
PROPOSED FOR THIS DEVELOPMENT (ENTER "X")	MEASURE	DESCRIPTION
x	1. Submetering	Multi-family and mixed-use developments SUBMETER UNITS for leak detection and for occupants ability to manage their own water use
x	2. No outdoor water features	Decorative water features outdoors can be a source of water use that is not functional
	3. Indoor water features submetered	Water features have proven to be a source of leaks. Submetering that is capable of alerts to the building monitoring system greatly reduce water waste
x	4. Limitation on functional turf grass	Functional grass turf are areas used for congregation of large number of people and should be limited to up to 10% of the landscapable area
	5. Limitations on artificial turf	Artificial turf is a large source of heat especially during summer months.
	6. Landscaped Rainwater harvesting	Earthworks, such as berms and basins, are encouraged to promote passive rainwater harvesting for planned plants and trees
x	7. Cooling tower controllers with monitoring technology	Arizona high evapotranspiration rates, cooling towers use significantly more water here than in other states. Monitory systems can optimize this water use.
	8. Pools and splashpads submeters with monitoring technology	Pools and splashpad can be a source of leaks. Submetering that is capable of alerts to the building monitoring system greatly reduce water waste. Timers on Splash pads

NOTES:
Greywater systems and large areas of artificial turf are not recommended by water conservation.
This list represents water conservation measures that the conservation office has approved and has shown to provide proven water savings.

TABLE INPUT VALUES LAST UPDATED: 5/19/2023

INSTRUCTIONS

INPUT DEVELOPMENT NAME, CASE NUMBER, AND QUANTITY VALUES TO DETERMINE TOTAL AVERAGE DAILY WATER USE PER THE 2018 DESIGN STANDARDS AND POLICY MANUAL (DS7PM) CHAPTER 6 USING GALLONS PER DAY (GPD) VALUES FROM FIGURE 6-1.2

TABLE 1: QUANTITY INPUT TABLE FOR THE DEVELOPMENT

7000 Block Shea Boulevard - 973-PA-2022

WATER USE DEVELOPMENT TYPE/CATEGORY	AVERAGE UNIT WATER USE PER DS&PM CH. 6 (GPD/UNIT)	INPUT APPLICABLE QUANTITY FOR DEVELOPMENT IN THIS COLUMN	NUMERICAL UNIT	TOTAL AVERAGE WATER USE (GPD)	NOTES
Category: Residential/ Commerical Residential/ Hotel					
< 2 DU/ac	485.6		DU	36,319	
2 – 2.9 DU/ac	470.4	196	DU	-	
3 – 7.9 DU/ac	248.2		DU	-	
8 – 11.9 DU/ac	227.6		DU	-	
12 – 22 DU/ac	227.6		DU	-	
High Density Condominium (condo)	185.3	204	DU	37,801	Community pool demands not included here. Refer to separate category.
Resort Hotel	446.3		ROOM	-	Includes site amenities such as 1 "standard" restaurant w/ associated dedicated kitchen, laundry service, landscaping, fountains, and 1 medium capacity pool. Large event venues/kitchens or multiple/large pools and multiple restaurants are not included.
Category: Commerical/ Other					
Restaurant	1.3		FT2	-	
Commercial/Retail	0.80	203,659	FT2	162,927	
Commerical High Rise	0.60		FT2	-	per IBC highrise is at or over 75 feet to highest finished floor
Office	0.60		FT2	-	
Institutional	1,340		ACRE	-	
Industrial	1,027		ACRE	-	
Research and Development	1,284		ACRE	-	
Category: Special Use Areas					
Natural Area Open Space	-		ACRE	-	Zero water demand
Developed Open Space - Parks	1,786		ACRE	-	
Developed Open Space- Golf Course	4,285		ACRE	-	
Category: Evaporation from Swimming Pools/Spas, Cooling, Turf Area Irrigation, Other Outdoor Consumptive Uses					
Extra large pool (60k to 100k gallons)	274		EA	-	Annual mean ETo = 74.75 in as collected by AZ Met. Kc = 1.1. Average pool size of 400 sq. ft. loses 20,490 gallons per year, or 51.23 gallons per sq ft, not including backwashing or leaks, per AMWUA calculator.
Large pool (above 30k to 60k gallons)	154		EA	-	
Medium pool (15k to 30k gallons)	75	1	EA	75	
Small pool or spa (under 15k gallons)	51		EA	-	
Total Bermuda Turf Area	0.10		FT2	-	1 sq ft of non-overseeded turf at 60% efficiency with increased Kc is 35 gallons per sq ft per year, per AMWUA calculator.
Total Overseeded Turf Area	0.02		FT2	-	1 sq ft of overseeded turf at 60% efficiency with increased Kc is 9 gallons per sq ft per year, per AMWUA calculator.
Evaporative Cooling/ Cooling Towers	-		TOTAL COOLING TONNAGE	-	Based on 1.50 cycles of concentration and average annual daily utilization of 68%. Water use is linear with respect to total cooling capacity tonnage. Based on US Dept of Energy Efficiency and Renewable Energy data.
Category: Filter Backwash Flows & Make-up Water from Pools & Spas (rapid sand filters)					
Extra large pool (60k to 100k gallons)	229	-	EA	-	Based on once per 7 day backwash @ 50,100, and 150gpm, respectively for each size pool category for 8 minute duration. Quantity values used from pool input values above.
Large pool (above 30k to 60k gallons)	171	-	EA	-	
Medium pool (15k to 30k gallons)	114	1	EA	114	
Small pool or spa (under 15k gallons)	57	-	EA	-	

A. TOTAL AVERAGE DAILY WATER USE FOR THIS DEVELOPMENT **200,918 GPD**

NOTES:
 GPD=GALLONS PER DAY, DU=DWELLING UNITS, FT2=SQUARE FEET, AC=ACRE, EA=EACH UNIT, ETO=EVAPOTRANSPIRATION, Kc=CROP COEFFICIENT, AZMET=ARIZONA METEOROLOGICAL NETWORK, AMWUA=ARIZONA MUNICIPAL WATER USERS ASSOCIATION
 NONE OF THE VALUES OR CALCULATIONS HEREIN ARE INTENDED TO BE USED FOR INFRASTRUCTURE DESIGN, PEAK FLOW DETERMINATION, OR SYSTEM CAPACITY ANALYSIS. FOR THESE PURPOSES REFER TO CH.6 & 7 OF THE CITY'S DESIGN STANDARDS AND POLICY MANUAL FOR THE RESPECTIVE DESIGN VALUES AND PEAKING FACTORS.

Water Demand Exhibit Summary

7000 Block Shea Boulevard - 973-PA-2022

1. Total Estimated Water Use per Day on a Sustainable Basis (gallons per day, gpd)

200,918

gpd

2. Net Water (NW) / Consumptive Use (gallons per day, gpd)

51,114

gpd

3. Proposed Water Conservation Measures Above Those Required By City Code

X	1. Submetering	Multi-family and mixed-use developments SUBMETER UNITS for leak detection and for occupants ability to manage their own water use
X	2. No outdoor water features	Decorative water features outdoors can be a source of water use that is not functional
	3. Indoor water features submetered	NOT PROPOSED
X	4. Limitation on functional turf grass	Functional grass turf are areas used for congregation of large number of people and should be limited to up to 10% of the landscapable area
	5. Limitations on artificial turf	NOT PROPOSED
	6. Landscaped Rainwater harvesting	NOT PROPOSED
X	7. Cooling tower controllers with monitoring technology	Arizona high evapotranspiration rates, cooling towers use significantly more water here than in other states. Monitory systems can optimize this water use.
	8. Pools and splashpads submeters with monitoring technology	NOT PROPOSED

4. Annual Economic Value of the Development on a per Gallon of Use Basis (Applies to Commercial or Mixed Use, To be Completed by City)

1. Major City Revenues

\$/1,000 gallons

2. Total Annual Output Impact

\$/1,000 gallons

TABLE 4: WATER USE SUMMARY

7000 Block Shea Boulevard - 973-PA-2022

WATER USE SUMMARY FOR THE DEVELOPMENT

USE CATEGORY	AMOUNT	UNITS	% OF TOTAL USE	CALCULATION NOTES
A. TOTAL DAILY AVERAGE WATER USE	200,918	GPD	100.0%	A=B+C, C=D+E, F=B+D
B. OUTDOOR CONSUMPTIVE USE	26,561	GPD	13.2%	
C. TOTAL INDOOR USE	174,357	GPD	86.8%	
D. INDOOR CONSUMPTIVE USE	24,552	GPD	12.2%	
E. WASTEWATER TO SEWER	149,804	GPD	74.6%	
F. TOTAL CONSUMPTIVE USE (NET USE)	51,114	GPD	25.4%	

NOTES:
 GPD=GALLONS PER DAY
 ALL VALUES ARE FOR AVERAGE WATER USE ANALYSIS ONLY. THIS CALCULATION IS NOT INTENDED TO BE USED FOR INFRASTRUCTURE DESIGN, PEAK FLOW DETERMINATION, OR SYSTEM CAPACITY ANALYSIS. FOR THESE PURPOSES REFER TO CH.6 & 7 OF THE CITY'S DESIGN STANDARDS AND POLICY MANUAL FOR THE RESPECTIVE DESIGN VALUES, PEAKING FACTORS, AND DESIGN REQUIREMENTS.

TOTAL AVERAGE WATER USE (GALLONS PER DAY, GPD)

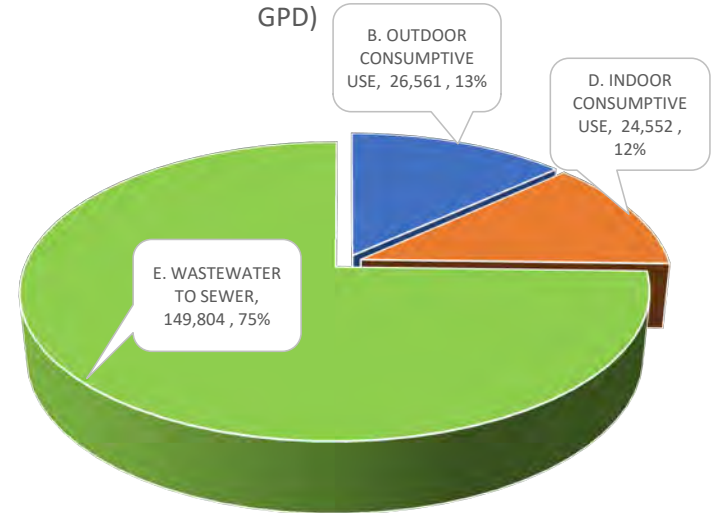


TABLE INPUT VALUES LAST UPDATED: 5/19/2023

TABLE 5: DETAILED WATER USE BREAKDOWN FOR THE DEVELOPMENT

7000 Block Shea Boulevard - 973-PA-2022

TO RIGHT: WATER USE ALLOCATION --->	A. TOTAL AVERAGE WATER USE (GPD)	B. AVERAGE OUTDOOR CONSUMPTIVE WATER USE ⁽¹⁾			C. AVERAGE INDOOR TOTAL WATER USE ⁽¹⁾			D. AVERAGE INDOOR CONSUMPTIVE WATER USE ⁽²⁾			E. AVERAGE WASTEWATER FLOWS TO SEWER ⁽³⁾		
BELOW: WATER USE DEVELOPMENT TYPE/CATEGORY		UNIT OUTDOOR CONSUMPTIVE WATER USE (GPD/UNIT)	OUTDOOR CONSUMPTIVE USE (GPD)	OUTDOOR CONSUMPTIVE USE (% OF TOTAL USE)	UNIT TOTAL INDOOR WATER USE (GPD/UNIT)	INDOOR TOTAL USE (GPD)	INDOOR TOTAL USE (% OF TOTAL USE)	UNIT CONSUMPTIVE INDOOR WATER USE (GPD/UNIT)	INDOOR CONSUMPTIVE USE (GPD)	INDOOR CONSUMPTIVE USE (% OF TOTAL USE)	WASTEWATER FLOW (GPD/UNIT)	WASTEWATER FLOW (GPD)	WASTEWATER (% OF TOTAL USE)
Category: Residential/ Commercial Residential/ Hotel													
< 2 DU/ac	-	276.7	-	0.0%	208.9	-	0.0%	20.9	-	0.0%	188	-	0.0%
2 - 2.9 DU/ac	-	276.7	-	0.0%	193.7	-	0.0%	19.4	-	0.0%	174	-	0.0%
3 - 7.9 DU/ac	-	72.3	-	0.0%	175.9	-	0.0%	17.6	-	0.0%	158	-	0.0%
8 - 11.9 DU/ac	-	72.3	-	0.0%	155.3	-	0.0%	15.5	-	0.0%	140	-	0.0%
12 - 22 DU/ac	-	72.3	-	0.0%	155.3	-	0.0%	15.5	-	0.0%	140	-	0.0%
High Density Condominium (condo)	37,801	30.0	6,120	3.0%	155.3	31,681.2	15.8%	15.5	3,168.1	1.6%	140	28,513	14.2%
Resort Hotel	-	44.6	-	0.0%	401.7	-	0.0%	32.1	-	0.0%	370	-	0.0%
Category: Commercial/ Other													
Restaurant	-	0.10	-	0.0%	1.20	-	0.0%	0.12	-	0.0%	1.08	-	0.0%
Commercial/Retail	162,927	0.10	20,366	10.1%	0.70	142,561.3	71.0%	0.11	21,384.2	10.6%	0.60	121,177	60.3%
Commercial High Rise	-	0.10	-	0.0%	0.50	-	0.0%	0.05	-	0.0%	0.45	-	0.0%
Office	-	0.10	-	0.0%	0.50	-	0.0%	0.05	-	0.0%	0.45	-	0.0%
Institutional	-	670	-	0.0%	670.0	-	0.0%	100.50	-	0.0%	569.50	-	0.0%
Industrial	-	154	-	0.0%	873.0	-	0.0%	130.95	-	0.0%	742.05	-	0.0%
Research and Development	-	192	-	0.0%	1,092.0	-	0.0%	163.80	-	0.0%	928.20	-	0.0%
Category: Special Use Areas													
Natural Area Open Space	-	-	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Developed Open Space - Parks	-	1,786	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Developed Open Space- Golf Course	-	4,285	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Category: Evaporation from Swimming Pools/Spas, Cooling, Turf Area Irrigation, Other Outdoor Consumptive Uses													
Extra large pool (60k to 100k gallons)	-	274	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Large pool (above 30k to 60k gallons)	-	154	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Medium pool (15k to 30k gallons)	75	75	75	0.0%	-	-	-	-	-	-	-	-	0.0%
Small pool or spa (under 15k gallons)	-	51	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Total Bermuda Turf Area	-	0.10	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Total Overseeded Turf Area	-	0.02	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Evaporative Cooling/ Cooling Towers	-	-	-	0.0%	-	-	-	-	-	-	-	-	0.0%
Category: Filter Backwash Flows & Make-up Water from Pools & Spas (rapid sand filters)													
Extra large pool (60k to 100k gallons)	-	-	-	-	228.6	-	0.0%	-	-	-	229	-	0.0%
Large pool (above 30k to 60k gallons)	-	-	-	-	171.4	-	0.0%	-	-	-	171	-	0.0%
Medium pool (15k to 30k gallons)	114	-	-	-	114.3	114.3	0.1%	-	-	-	114	114	0.1%
Small pool or spa (under 15k gallons)	-	-	-	-	57.1	-	0.0%	-	-	-	57	-	0.0%
TOTALS	200,918		26,561	13.2%		174,357	86.8%		24,552	12.2%		149,804	74.6%
F. TOTAL CONSUMPTIVE/NET WATER USE FOR THIS DEVELOPMENT (B. + D.)		51,114 GPD		25.4% OF TOTAL USE									

NOTES:

(1) PER 2018 DS&PM CHAPTER 6, FIGURE 6-1.2

(2) VARIES FROM 8% TO 15%, TYPICALLY 10%

(3) WASTEWATER FLOWS TO SEWER ARE CALCULATED AS C. MINUS D.

GPD=GALLONS PER DAY, DU=DWELLING UNIT, FT²=SQUARE FEET, AC=ACRE, EA=EACH UNIT

NONE OF THE VALUES OR CALCULATIONS HEREIN ARE INTENDED TO BE USED FOR INFRASTRUCTURE DESIGN, PEAK FLOW DETERMINATION, OR SYSTEM CAPACITY ANALYSIS. FOR THESE PURPOSES REFER TO CH.6 & 7 OF THE CITY'S DESIGN STANDARDS AND POLICY MANUAL FOR THE RESPECTIVE DESIGN VALUES AND PEAKING FACTORS.