FINAL WATER REPORT

for

COSANTI COMMONS

7000 E. Shea Boulevard
Scottsdale, Arizona 85254

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1. INTRODUCTION

1.1. SUMMARY OF PROPOSED DEVELOPEMENT

Cosanti Commons is a proposed 189-unit high-density multifamily project located north of Shea Boulevard between N. 70th Street and N. 71st Place 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 final 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 of 7000 E. Shea Boulevard, according to the plat of record in the office of the County Recorder of Maricopa County, Arizona, in Book 1701 of Maps, Page 37. The total disturbed land area is 4.36 net acres (189,956.46 sq. ft.).

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 10.04 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 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 QS 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 and at 30 psi is 4,079 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 and at 30 psi is 3,365 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 utility plans 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 189 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. The new domestic meters will be one 2" and one 3" and the landscape meter will be 1". A new 6" DIP fire line will be provided to the building. Two new fire hydrants provide adequate coverage to the proposed building. Three existing fire hydrants will be removed, one of them near the southwest corner of the building, one in the center of the building and one near the northwestern corner of the limit of disturbance.

See **APPENDIX II** for the 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 along with Appendix B in the International Fire Code (IFC).

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	-	189	0.27	51.0	102.1	178.6
Commercial/Retail West	79,200	-	1.11E-03	87.9	175.8	307.7
			TOTAL DEMAND (gpm):	138.9	277.9	486.3

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

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

Table 2: EXISTING WATER DEMAND CALCULATIONS

	Area (sq.ft.)	ADD (gpm/unit)	Avg. Day Demand (gpm)	Max. Day Demand (gpm)	Peak Hour (gpm)
Ex. Commercial/Retail (east)	24,629	1.11E-03	27.3	54.7	95.7
Ex. Commercial/Retail (west)	79,200	1.11E-03	87.9	175.8	307.7
		TOTAL DEMAND (gpm):	115.3	230.5	403.4

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

Refer to **APPENDIX IV** for Supplemental Water Conservation Tables and Exhibits.

5.2. SOFTWARE MODELING:

Bentley WaterCAD® Version 10.04 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

Fire Flow Requirements

- The building area is 295,000 sf. Assuming Type IIB construction, Table B105.1 of the IFC requires a fire flow of 8,000 gpm. All structures will be provided with automatic sprinkler systems which allow for a 75% reduction in required fire flow per Section B105.2 which is 2,000 gpm. 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. The site will require the minimum allowable fire flow of 2,500 gpm plus maximum day demand.

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**.

Table 3: WaterCAD® Analysis Results

Demand Scenario	Water Demand (GPM)	Pressure (PSI)				Max. Velocity (ft/s)	Pipe ID
		Min.	Node	Max.	Node		
Average Day	138.9	70	J-8	74	J-4	0.68	P-14
Maximum Day	277.9	70	J-8	74	J-4	1.36	P-14
Peak Hour	486.3	69	J-8	73	J-4	2.38	P-14
FF + MDD	2,778	31	J-6	41	FH-1	8.03	P-14

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)

FIGURES

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

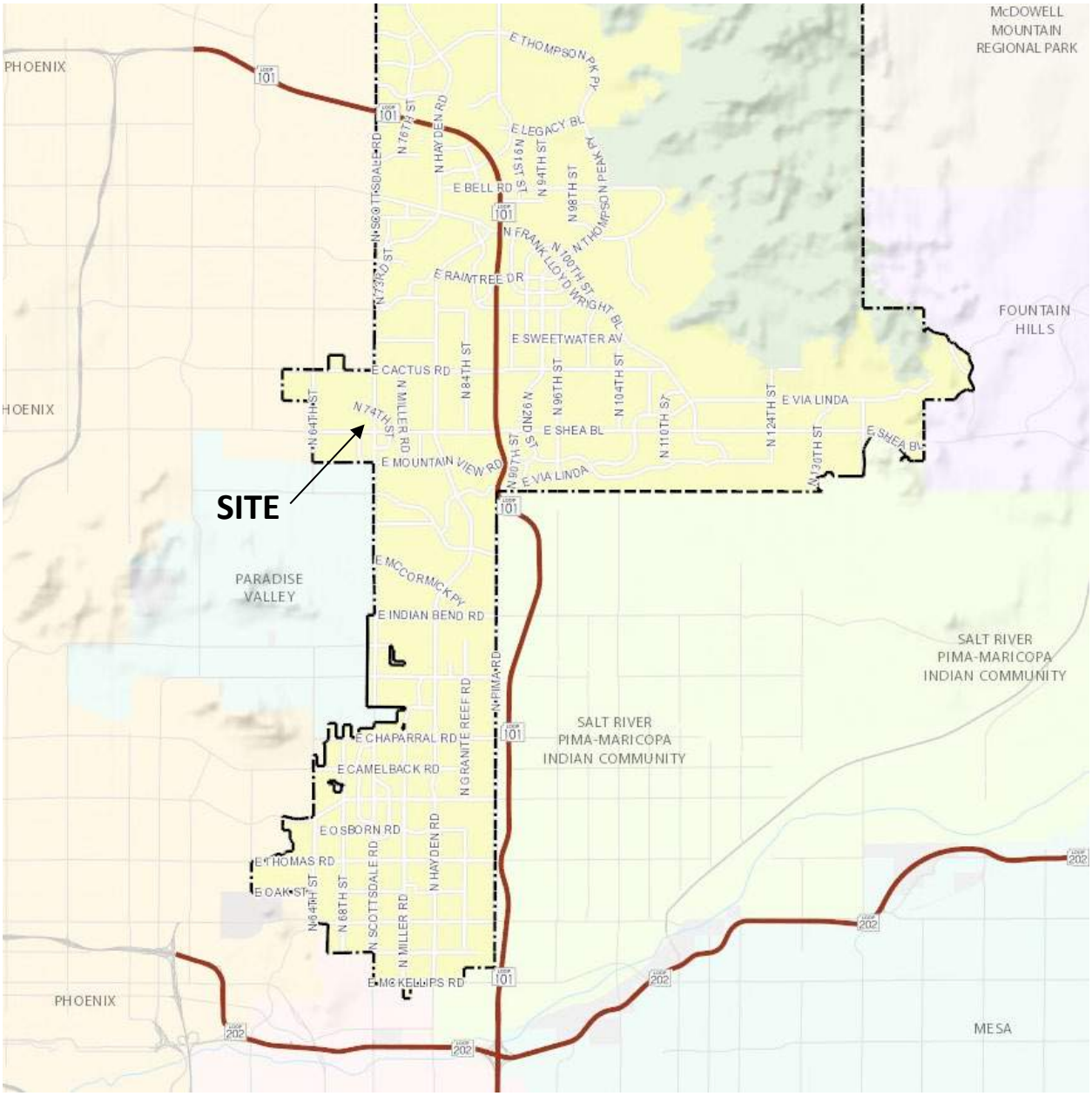
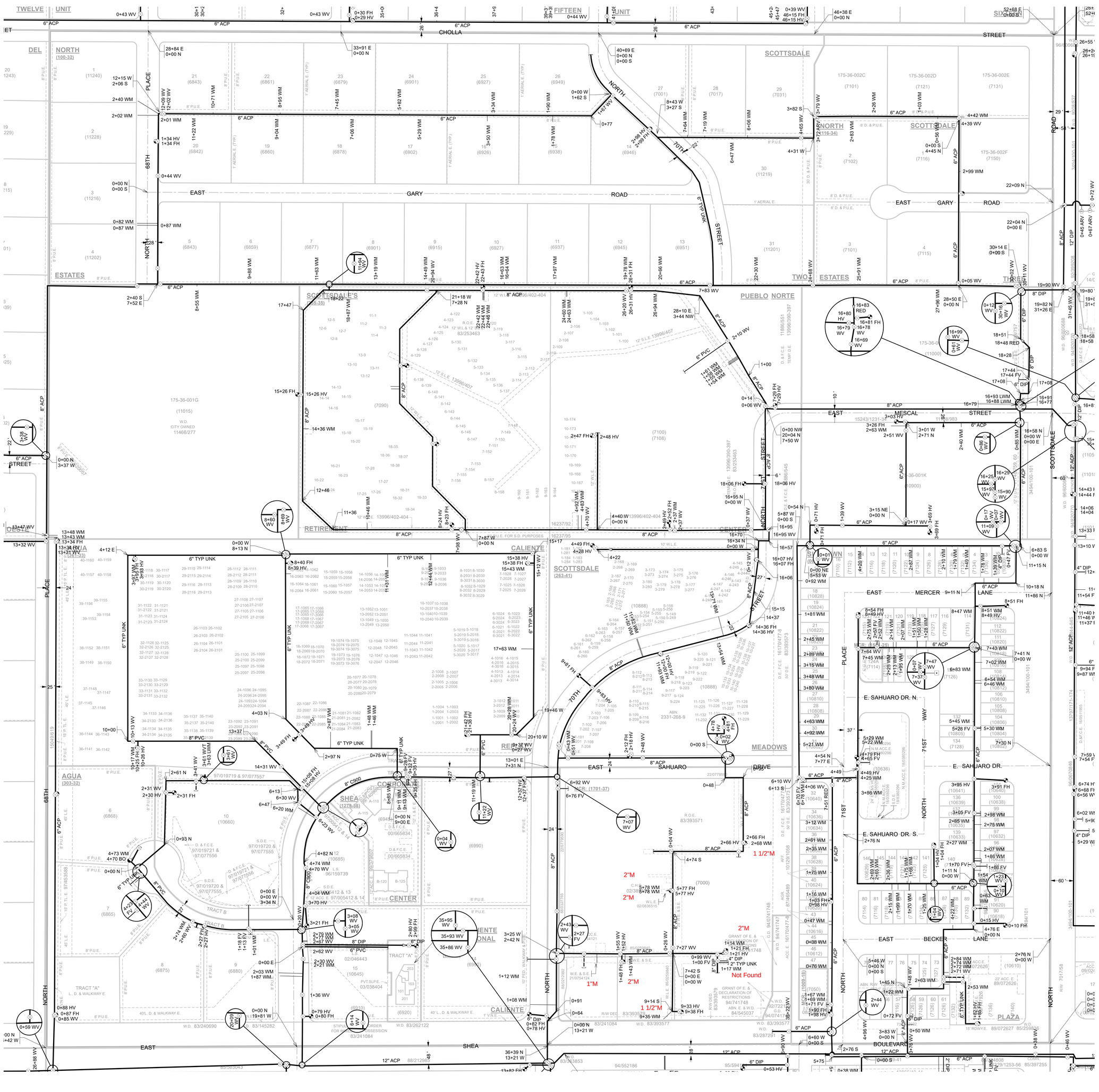


FIGURE 1 – Vicinity Map

FIGURE 2 – Aerial

30-44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FIFTEEN UNIT
SIX
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SCOTTSDALE
NORTH (116-34)
SCOTTSDALE
ESTATES
SCOTTSDALE'S
PUEBLO NORTE
TWO ESTATES
THREE
AGUA (303-32)
SHEA (279-38)
SCOTTSDALE (263-41)
RETIREMENT
CENTER
CALIENTE
CORPORATE
MEADOWS
PLAZA
68TH PLACE
NORTH 68TH PLACE
EAST GARY ROAD
NORTH 70TH PLACE
NORTH 71ST WAY
EAST MESCAL STREET
EAST MERCER LANE
EAST BECKER LANE
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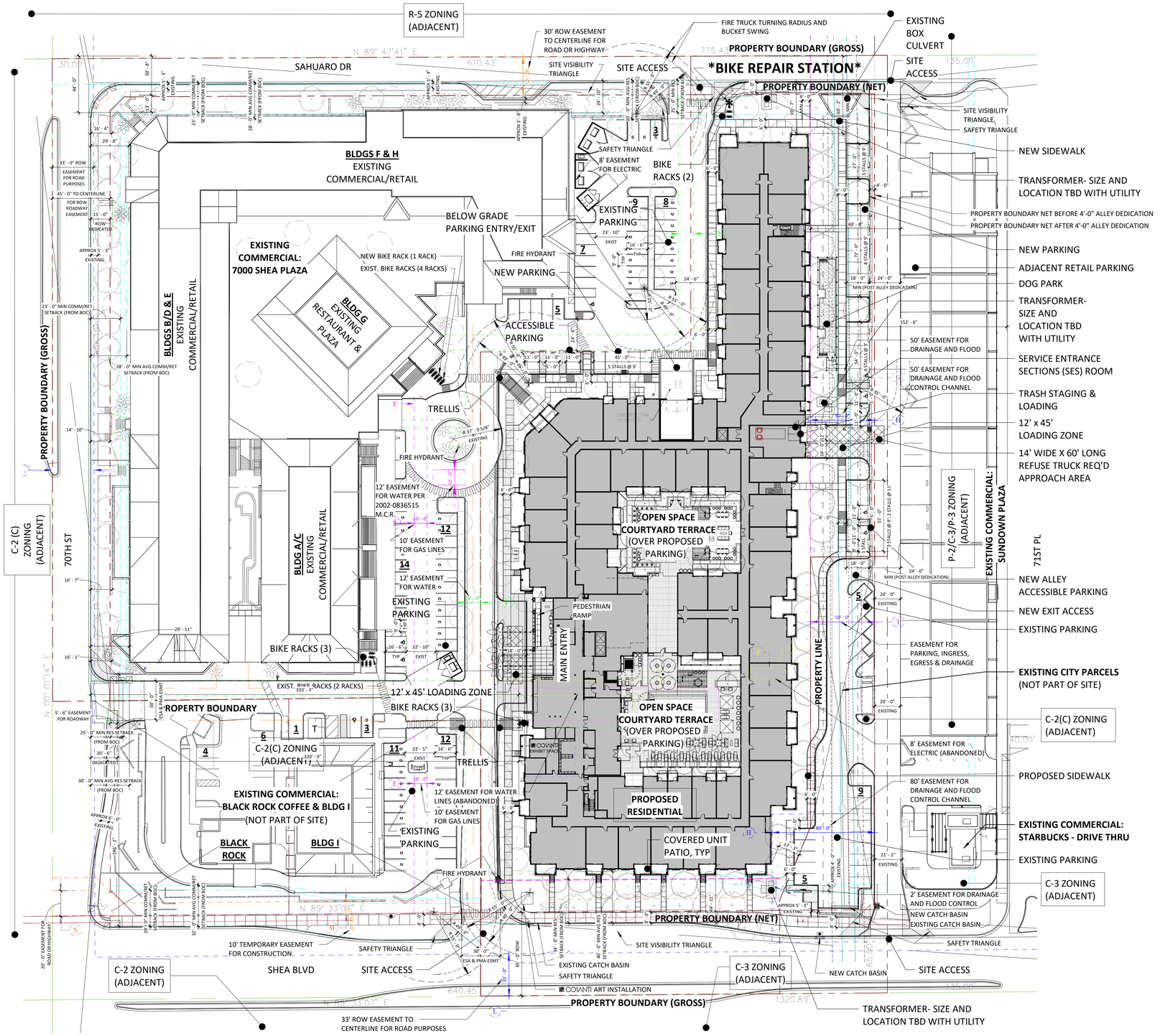


1 A.21.fb **TECHNICAL REQUIREMENTS**
1" = 40'-0"

FIGURE 4 - Proposed Site Plan

1/27/2025 5:07:36 PM

EXISTING BUILDINGS SF:

(PER CASE 30-DR-2020)

BUILDING A/C:	**+/-18,500 SF**
BUILDING B/D:	**+/-18,500 SF**
BUILDING E:	**+/-12,200 SF**
BUILDING F:	**+/- 7,200 SF**
BUILDING G:	**+/- 7,200 SF**
BUILDING H:	**+/-15,600 SF**
TOTAL:	**+/-79,200 SF**
LOT 2 BLACK ROCK:	**+/- 1,977 SF**
LOT 3 BUILDING I:	**+/- 5,600 SF (AZ BREAD +/-2,800 SF)**

PARKING METRICS - EXISTING LOT 3:

COSANTI COMMONS
EXISTING LOT 3 PARKING *(NOT PART OF REZONE REQUEST)*

esg

STANDARD	APPROVED SITE PLAN FOR EXISTING LOT 2 (BLACK ROCK COFFEE) Case #: 30-DR-2020	GENERAL ZONING PARKING REQUIREMENT	EXISTING COMMERCIAL LOT 2 - *NOT PART OF REZONE REQUEST* (C-2 (C) ZONING)	EXISTING COMMERCIAL LOT 3 - *NOT PART OF REZONE REQUEST* (C-2 (C) ZONING)
VEHICLE PARKING PER USE [Table 9.103.A]	1:300 SF			
MIXED USE COMMERCIAL CENTER USE (TOTAL REQUIRED)	-	1:300 SF	1,977 SF**** / 300 = **7**	5,600 SF**** / 300 = **19**
TOTAL VEHICLE PARKING **PROVIDED**	-	-	**10** (SURFACE TO REMAIN)	**27** (SURFACE TO REMAIN)

**** Per Site Plan data, Black Rock Coffee Bar, Case# 30-DR-2020; Lot 3 = Building I (Arizona Bread Company and Fitness 4 Home)

PROJECT DATA SUMMARY:

Case No:	973-PA-2022, 2-GP-2023, 6-ZN-2023, 3-DA-2023
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:** 175-42-138S (per County) **EXISTING RESIDENTIAL SITE:** 175-42-136S (per County)
APN (PROPOSED):	**OVERALL SITE:** 175-42-140 (per Plat)
QS:	**EXISTING COMMERCIAL/RETAIL SITE + RESIDENTIAL SITE:** 29-44
Zoning Classification (EXISTING):	**EXISTING COMMERCIAL/RETAIL SITE:** C-2 (Central Business)
Zoning Classification (PROPOSED):	**EXISTING RESIDENTIAL SITE:** C-2 (Central Business) **OVERALL SITE:** PUD-PSD (Planned Unit Development with Planned Shared Development Overlay) -- APPROVED WITH CASES: 2-GP-2023, 6-ZN-2023, 3-DA-2023

ZONING SUMMARY:

COSANTI COMMONS
PLANNED UNIT DEVELOPMENT WITH PLANNED SHARED DEVELOPMENT OVERLAY — APPROVED WITH CASES: 2-GP-2023, 6-ZN-2023, 3-DA-2023

esg

STANDARD	APPROVED SITE PLAN FOR EXISTING COMMERCIAL Case #: 97-ZN-1986 (C-2 (C) ZONING)	PUD-PSD ZONING	PROPOSED OVERALL LOT (PUD-PSD ZONING)	EXISTING COMMERCIAL (PUD-PSD ZONING)	PROPOSED RESIDENTIAL (PUD-PSD ZONING)
USE	RETAIL, OFFICE, RESTAURANT	-	MIXED USE CENTER (RETAIL, OFFICE, DENTAL OFFICE, HAIR SALONS, HEALTH FOOD STORE, SPORTS TRAINING, CHESS INSTRUCTION, RESTAURANT, PARKING) & MULTI-FAMILY	MIXED USE CENTER (RETAIL, OFFICE, DENTAL OFFICE, HAIR SALONS, HEALTH FOOD STORE, SPORTS TRAINING, CHESS INSTRUCTION, RESTAURANT, PARKING)	MULTI-FAMILY
TOTAL LOT AREA (GROSS, WITH CITY-OWNED PARCELS)	N/A	0.5 min. to 15 ACRES max.	398,264 S.F. (9.143 AC)	204,162 S.F. (4.687 AC)	194,102 S.F. (4.456 AC)
TOTAL LOT AREA (GROSS, WITHOUT CITY-OWNED PARCELS)	N/A	0.5 min. to 15 ACRES max.	**375,447 S.F. (8.619 AC)**	**204,162 S.F. (4.687 AC)**	**171,285 S.F. (3.932 AC)**
TOTAL LOT AREA (NET, WITHOUT CITY-OWNED PARCELS, BEFORE 4' ALLEY DEDICATION)	N/A	-	**316,041 S.F. (7.255 AC)**	**168,073 S.F. (3.858 AC)**	**147,968 S.F. (3.397 AC)**
TOTAL FUTURE LOT AREA (NET, WITHOUT CITY-OWNED PARCELS, AFTER 4' ALLEY DEDICATION)	N/A	-	**314,522 S.F.(a) (7.221 AC)**	**168,046 S.F.(a) (3.858 AC)**	**146,486 S.F.(a) (3.363 AC)**
RESIDENTIAL GSF	N/A	-	±295,000 G.S.F.	-	±295,000 G.S.F.
DWELLING QUANTITY	N/A	-	189 UNITS	0 UNITS	189 UNITS
	-	-	EFFICIENCY: 30 UNITS 1-BR: 114 UNITS 2-BR: 45 UNITS 3-BR: 0 UNITS	EFFICIENCY: 0 UNITS 1-BR: 0 UNITS 2-BR: 0 UNITS 3-BR: 0 UNITS	EFFICIENCY: 30 UNITS 1-BR: 114 UNITS 2-BR: 45 UNITS 3-BR: 0 UNITS
TOTAL # BEDROOMS	N/A	-	234 BEDROOMS	0 BEDROOMS	234 BEDROOMS
DENSITY/INTENSITY (FAR**)	-	Residential Uses: per Development Plan	±22 DU/AC GROSS 189 / ±8.619 = ±21.93	0 DU/AC GROSS 0 / ±4.687 = 0	±68 DU/AC GROSS 189 / ±3.932 = ±48.07
[COMMERCIAL USE EXCEPTIONS SEC. 5.5005.B.3]	0.33 proposed FAR stated in case (0.5 max. FAR now)	Commercial Uses: 0.8 max. (net site area)	Commercial Uses: ±80,200 SF***/314,532(a) = 0.25 FAR	Commercial Uses: ±79,200 SF***/314,532(a) = 0.25 FAR	Commercial Uses: 1,000 SF/314,532(a) = 0.0 FAR
BUILDING HEIGHT [EXCEPTIONS SEC. 5.5005.D, 5.5005.E]	8 x 314,532(a) = 251,626 SF 14 FT 48 FT max. 10 FT average allowed for certain elements covering no more than 30% of bldg roof area	38 FT COMM/RETAIL 49 FT MAX MULTI-FAMILY	38 FT COMM/RETAIL 49 FT MAX MULTI-FAMILY	38 FT COMM/RETAIL	49 FT MAX MULTI-FAMILY includes 10 FT average allowed for certain elements covering no more than 30% of bldg roof area
SETBACKS					
MINIMUM AVERAGE SETBACK	-	-	APPROVED AMENDED STANDARD FOR 'MINIMUM' AVERAGE SETBACK (PUD LANGUAGE)	APPROVED AMENDED STANDARD FOR 'MINIMUM' AVERAGE SETBACK (PUD LANGUAGE)	APPROVED AMENDED STANDARD FOR 'MINIMUM' AVERAGE SETBACK (PUD LANGUAGE)
SAHUARO (NORTH) - GROUND FLR RESIDENTIAL MIN./MIN. AVG.	20 FT stated in case	25 FT / 30 FT - FR. BACK OF PLANNED CURB	±39'-7"/47'-1" PROPOSED	N/A	±39'-7"/47'-1" PROPOSED
SAHUARO (NORTH) - GROUND FLR COMM/RETAIL MIN./MIN. AVG.	25 FT required now from MF district)	23 FT / 28 FT - FR. BACK OF PLANNED CURB	24' EXISTS (ROOF OVERHANG, RAMPED WALKWAY, LOW UTILITY SCREEN WALL ENCROACH MIN SETBACK UNDER 15 FT ENCROACHMENT) / 28'-2" EXISTS	24' EXISTS (ROOF OVERHANG, RAMPED WALKWAY, LOW UTILITY SCREEN WALL ENCROACH MIN SETBACK UNDER 15 FT ENCROACHMENT) / 28'-2" EXISTS	N/A
SHEA (SOUTH) - GROUND FLR RESIDENTIAL MIN./MIN. AVG.	20 FT stated in case	34 FT / 40 FT - FR. BACK OF PLANNED CURB	±44-11'/51'-4" PROPOSED	N/A	±44-11'/51'-4" PROPOSED
SHEA (SOUTH) - GROUND FLR COMM/RETAIL MIN./MIN. AVG.	(front - 0 FT req'd now)	28 FT / 32 FT - FR. BACK OF PLANNED CURB	193'/205'-4" EXISTS	193'/205'-4" EXISTS	N/A
70TH ST (WEST) - GROUND FLR RESIDENTIAL MIN./MIN. AVG.	20 FT stated in case	25 FT / 30 FT - FR. BACK OF PLANNED CURB	±320'-9"/321'-10" PROPOSED	N/A	±320'-9"/321'-10" PROPOSED
70TH ST (WEST) - GROUND FLR COMM/RETAIL MIN./MIN. AVG.	(front - 0 FT req'd now)	23 FT / 28 FT - FR. BACK OF PLANNED CURB	29' EXISTS (ROOF OVERHANG, ENCLOSED STAIRS, EXTERIOR STEPS ENCROACH MIN SETBACK BUT UNDER 15 FT ENCROACHMENT) / 30'-1" EXISTS	29' EXISTS (ROOF OVERHANG, ENCLOSED STAIRS, EXTERIOR STEPS ENCROACH MIN SETBACK BUT UNDER 15 FT ENCROACHMENT) / 30'-1" EXISTS	N/A
BUILDING ENVELOPE [ENCROACHMENTS - SEC. 5.5005.G]	-	-	-	-	-
SAHUARO (NORTH) - ADJ. TO RESID. DISTRICT ENVELOPE	N/A	1:2 - STARTING ON RESID. DISTRICT BOUNDARY	REQUESTING ENCROACHMENT FOR EXISTING COMMERCIAL BUILDING	REQUESTING ENCROACHMENT FOR EXISTING COMMERCIAL BUILDING	COMPLIES
71ST PL (EAST) - STANDARD ENVELOPE	N/A	1:1 - STARTING UP 36 FT FR. MIN. SETBACK TO 48 FT; THEN 2:1	N/A	N/A	N/A
SHEA (SOUTH) - STANDARD ENVELOPE	N/A	1:1 - STARTING UP 36 FT FR. MIN. SETBACK TO 48 FT; THEN 2:1	COMPLIES	COMPLIES	COMPLIES
70TH ST (WEST) - STANDARD ENVELOPE	N/A	1:1 - STARTING UP 36 FT FR. MIN. SETBACK TO 48 FT; THEN 2:1	COMPLIES	COMPLIES	N/A
PRIVATE OUTDOOR LIVING SPACE	N/A	0.05 x gross floor area of the dwelling unit	COMPLIES	N/A	COMPLIES
COMMON OPEN SPACE	amount stated in case illegible (0.10 x 314,532(a) (net lot area) now = 31,453 SF plus .004 x net lot area for ea. FT of bldg height over 12 FT (.004 x 314,532(a) x 26 FT****) = ±32,711 + 31,453 = ±64,164 SF req'd now overall site)	0.10 x 375,447 (gross site area) = 37,545 SF	±94,080 SF OVERALL PROPOSED (±59,996 SF EXISTS OVERALL)	-	-

(a) the net area after the 4' alley dedication
** FAR calculated over the NET site area; floor area can exclude: parking areas, uncovered steps, exterior balcony space, exterior ground floor patio space, basement space used for unoccupied storage, elevator shafts & space occupied by electrical & mechanical rooms.
***Existing commercial SF of +/-79,200 SF per Site Plan data, Black Rock Coffee Bar, Case# 30-DR-2020
****Per 159-DR-86 'Elevations,' Design Review Submittal, City approved stamp dated 11/6/86

PARKING METRICS:

STANDARD	APPROVED SITE PLAN FOR EXISTING COMMERCIAL Case #: 97-ZN-1986 (C-2 (C) ZONING)	PUD-PSD ZONING	PROPOSED OVERALL LOT (PUD-PSD ZONING)	EXISTING COMMERCIAL (PUD-PSD ZONING)	PROPOSED RESIDENTIAL (PUD-PSD ZONING) — incl. 1,000 SF commercial Cosanti Flex Space
PARKING LOCATED BETWEEN BUILDING AND STREET [Sec. 5.5006.A.]	-	-	COMPLIES	COMPLIES	COMPLIES
DRIVE AISLE SIZE [Table 9.106.A]	-	-	COMPLIES	EXISTING	COMPLIES
PARKING STALL SIZE [Table 9.106.A]	-	-	COMPLIES	EXISTING	COMPLIES
VEHICLE PARKING PER USE [Table 9.103.A]	-	-	-	-	-
MIXED USE COMMERCIAL CENTER USE TOTAL REQUIRED		1:300 SF	±80,200 SF **268**	±79,200 SF*** / 300 **264**	1,000 SF max. / 300 **4**
MULTIFAMILY GUEST (189 TOTAL UNITS)	-	1 PER 6 UNITS	-	-	32
MULTIFAMILY EFFICIENCY 30 UNITS	-	1.25 PER DU	-	-	38
MULTIFAMILY 1BR 114 UNITS	-	1.3 PER DU	-	-	149
MULTIFAMILY 2BR 45 UNITS	-	1.7 PER DU	-	-	77
MULTIFAMILY 3BR+ 0 UNITS	-	1.9 PER DU	-	-	0
MULTIFAMILY TOTAL REQUIRED			-	-	**296**
TOTAL VEHICLE PARKING **REQUIRED**	663 stated in case for larger overall site		**564**	**264**	**300**
TOTAL VEHICLE PARKING **PROVIDED**, INCLUDES ACCESSIBLE	561 (15% reduct.) stated in case for larger overall site	-	- **612**	58 (SURFACE TO REMAIN) 313 (STRUCTURED) (this site (garage) includes required parking for 65 (32 guests + 4 Cosanti Exhibit/Flex Space + 29 add'l residential per Agreement)) **TOTAL: 371**	41 SURFACE (30 + 11 of the 19 SURFACE ON CITY PARCELS) 200 (STRUCTURED) (not including compacts/tandems) **TOTAL: 241**
ACCESSIBLE PARKING, STRUCTURED REQUIRED (4% MIN OF THE PROVIDED)	-	-	**22**	13	9
ACCESSIBLE PARKING, SURFACE REQUIRED (4% MIN OF THE PROVIDED)	-	-	**5**	3	2
ACCESSIBLE PARKING, STRUCT. PROV. (INCLUDED IN THE PROVIDED PKG TOTALS)	-	-	**29**	20	9
ACCESSIBLE PARKING, SURFACE PROV. (INCLUDED IN THE PROVIDED PKG TOTALS)	-	-	**11**	4	7
COVERED PARKING [Sec. 9.105.I.5d]	-	-	-	-	-
ACCESSIBLE TENANT COVERED PARKING PROVIDED (FOR MF DEVTS)	-	-	11	2	9
	-	**4% MIN RATIOS PROVIDED**	11 / 229 = .048 = 4.8%	2 / 29 = .069 = 6.9%	9 / 200 = .045 = 4.5%
NONACCESSIBLE TENANT COVERED PARKING PROVIDED (FOR MF DEVTS)	-	-	218	27	191
	-	**RATIOS PROVIDED**	218 / 229 = .952 = 95.2%	27 / 29 = .931 = 93.1%	191 / 200 = .955 = 95.5%
ACCESSIBLE VISITOR COVERED PARKING PROVIDED (FOR MF DEVTS)	-	-	-	-	0
(MF DWELLING VISITOR PKG SPACES TO BE PROVIDED IN COVERED)	-	**4% MIN RATIOS PROVIDED**	2 / 32 = .063 = 6.3%	2 / 32 = .063 = 6.3%	0 / 200 = .000 = 0%
NONACCESSIBLE VISITOR COVERED PARKING PROVIDED (FOR MF DEVTS)	-	-	30	30	0
(MF DWELLING VISITOR PKG SPACES TO BE PROVIDED IN COVERED)	-	**RATIOS PROVIDED**	30 / 32 = .938 = 94%	30 / 32 = .938 = 94%	0 / 200 = .000 = 0%
ACCESSIBLE NONRESIDENTIAL COVERED PARKING PROVIDED	-	-	18	18	0
(THESE ARE EXISTING + NEW COSANTI SPACES)	-	**4% MIN RATIOS PROVIDED**	18 / 252 = .071 = 7.1%	18 / 252 = .071 = 7.1%	0 / 200 = .000 = 0%
NONACCESSIBLE NONRESIDENTIAL COVERED PARKING PROVIDED	-	-	234	234	0
(THESE ARE EXISTING + NEW COSANTI SPACES)	-	**EXISTING RATIOS PROVIDED**	234 / 252 = .929 = 92.9%	234 / 252 = .929 = 92.9%	0 / 200 = .000 = 0%
TOTAL VEHICLE PARKING REQUIRED & PROVIDED			**TOTAL VEHICLE PARKING REQUIRED (OVERALL SITE) = 564;** **TOTAL PARKING PROVIDED (OVERALL SITE) = 612** **TOTAL VEHICLE PARKING SURPLUS (OVERALL SITE) = 48**		
BICYCLE PARKING PER USE [Sec. 9.103.C]	0 stated in case				
MIXED USE COMMERCIAL CENTER USE REQUIREMENT		1:10 REQ. VEH., 2 MIN., 100 MAX.	-	264 / 10 = 27	4 / 10 = 3
MULTIFAMILY USE REQUIREMENT		1:10 REQ. VEH., 2 MIN., 100 MAX.	-	32 / 10 = 4	264 / 10 = 27
BICYCLE PARKING REQUIRED (TOTALS)	0 stated in case	-	**60**	**31**	**29**
BICYCLE PARKING PROVIDED	0 provided in case				
BICYCLE PARKING SPACES, STRUCTURED	0 provided in case	-	-	0	28
BICYCLE PARKING SPACES, SURFACE	0 provided in case	-	-	20 (10 racks – 6 existing + 4 new racks)	16 (8 racks)
BICYCLE PARKING PROVIDED (TOTALS)	0 provided in case	-	**64**	**20**	**44**
TOTAL BICYCLE PARKING REQUIRED & PROVIDED			**TOTAL BICYCLE PARKING REQUIRED (OVERALL SITE) = 60;** **TOTAL BICYCLE PARKING PROVIDED (OVERALL SITE) = 64**		

***Existing commercial SF of +/-79,200 SF per Site Plan data, Black Rock Coffee Bar, Case# 30-DR-2020

COSANTI COMMONS
7000 E Shea Blvd / Scottsdale AZ

esg
ARCHITECTURE & DESIGN
350 North 5th Street, Suite 400
Minneapolis, MN 55401
p 612.339.5508 | esgarch.com

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed architect under the laws of the State of Arizona

Signature

Typed or Printed Name

License # Date

NOT FOR CONSTRUCTION

01/24/2025
DRB SUBMITTAL

ORIGINAL ISSUE:

REVISIONS
No. Description Date

222517
PROJECT NUMBER

KEY PLAN

COSANTI COMMONS

TECHNICAL REQUIREMENTS

A.21.fb

APPENDICIES

I. FH Flow Test

II. Utility Plan

III. Water Model Reports

IV. Supplemental Water Conservation Measures Tables and Exhibits

Arizona Flow Testing LLC

[redacted]

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)

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

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

Approx. distance between hydrants: 280 Feet

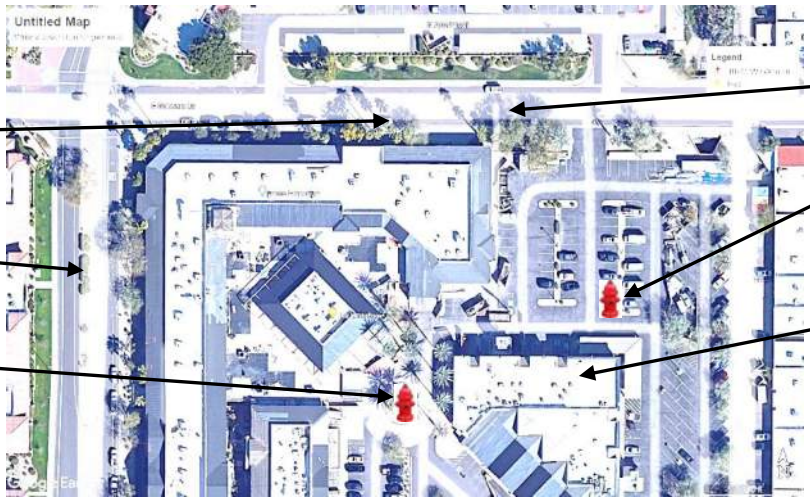
Main size: 8-Inch

Flowing GPM: **2,431 GPM**

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

Flow Test Location

North



INDEX OF DRAWINGS

SHEET INDEX

		SHEET NO.:	DESCRIPTION:	LATEST DATE:	REVISION:
●	1	C4.00	PRELIMINARY COVER SHEET & KEYMAP	04/30/2025	
●	2	C4.10	PRELIMINARY UTILITY PLAN	04/30/2025	
●	3	C4.11	PRELIMINARY UTILITY PLAN	04/30/2025	

● FILLED CIRCLE INDICATES PLAN IS INCLUDED WITH THIS SUBMITTAL

QUANTITIES

WATER QUANTITIES

DESC.	QTY.	UNIT
6" DIP	86	LF
2" TYPE "K" COPPER LINE	74	LF
1" TYPE "K" COPPER LINE	39	LF
8"X6" TEE	2	EA
8"X6" BEND	1	EA
FIRE HYDRANT ASSEMBLY (INLCUDES GV)	2	EA
2" WATER METER	2	EA
1" WATER METER	1	EA
2" BACKFLOW PREVENTER	2	EA
1" BACKFLOW PREVENTER	1	EA

SEWER QUANTITIES

DESC.	QTY.	UNIT
6" PVC	177	LF
8" PVC	16	LF

(QUANTITIES SHOWN ARE FOR PERMITTING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR DETERMINING QUANTITIES FOR BIDDING PURPOSES.)

LEGEND

PROPOSED UTILITY LEGEND:

- PROPERTY LINE
- EASEMENT LINE
- X"W — WATER LINE
- X"S — SEWER LINE
- FIRE HYDRANT
- FDC
- WM — WATER METER
- GATE VALVE
- T.S.V.B.&C.
- BACK FLOW PREVENTER
- CAP
- BUILDING CONNECTION
- SEWER CLEAN OUT

EXISTING LEGEND

- S — SEWER LINE
- (S) — SEWER MANHOLE
- W — WATER LINE
- WV — WATER VALVE
- FIRE HYDRANT
- G — GAS LINE
- TV — UNDERGROUND TELEVISION LINE
- E — UNDERGROUND ELECTRIC LINE
- OHE — OVERHEAD ELECTRIC LINE
- T — ELECTRIC TRANSFORMER
- E — ELECTRIC JUNCTION BOX
- (E) — ELECTRIC METER
- SD — STORM DRAIN LINE
- CB — STORM CATCH BASIN
- (D) — STORM MANHOLE

REMOVAL LEGEND:

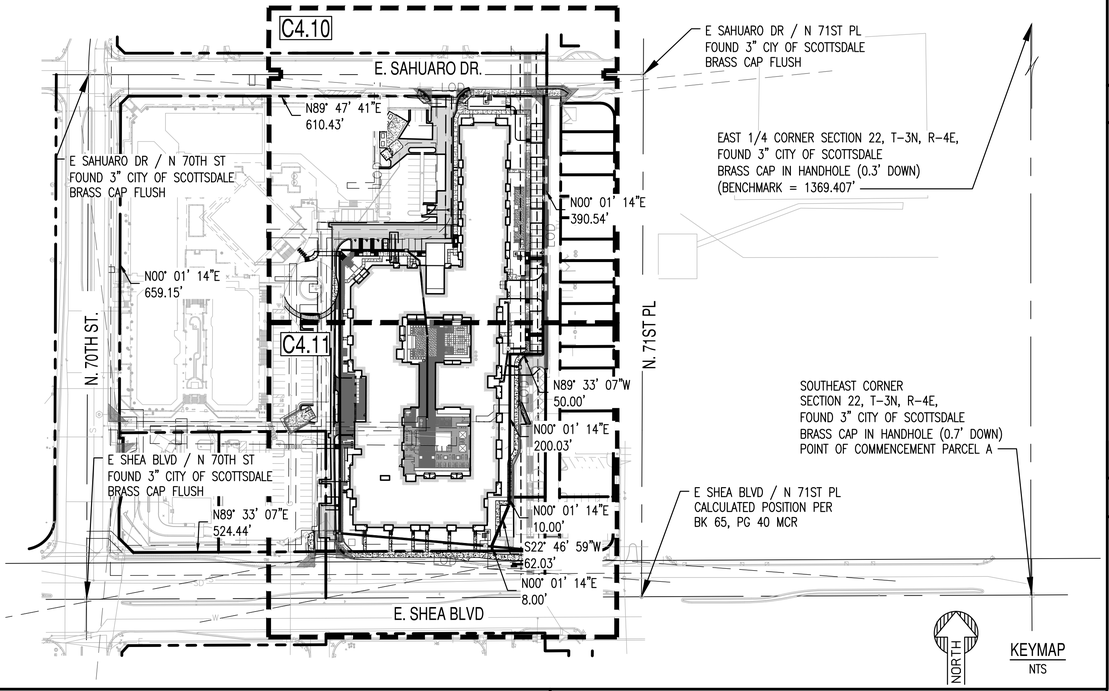
////////////////// PIPE REMOVAL

COSANTI COMMONS

PRELIMINARY COVER SHEET & KEYMAP

7000 E. SHEA BLVD SCOTTSDALE, AZ 85254

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 3 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA.



NO-CONFLICT BLOCK

NO CONFLICT SIGNATURE BLOCK

UTILITY	UTILITY COMPANY	NAME OF COMPANY REPRESENTATIVE	TELEPHONE NUMBER	DATE SUBMITED
ELECTRIC	APS	ADRIANNE BRENNAN	(602) 493-4401	01/24/2023
TELEPHONE	CENTURYLINK	KATHY HADRICH	(602) 630-5480	01/24/2023
NATURAL GAS	SW GAS	X	(XXX) XXX-XXXX	01/24/2023
CABLE/TV	COX	GLENN STEPHENS	(XXX) XXX-XXXX	01/24/2023
OTHER	X	X	(XXX) XXX-XXXX	XX/XX/XXXX

ENGINEER'S CERTIFICATION:
I, AUSTIN BROOKS, AS THE ENGINEER OF RECORD FOR THIS DEVELOPMENT, HEREBY CERTIFY THAT ALL UTILITY COMPANIES LISTED ABOVE HAVE BEEN PROVIDED FINAL IMPROVEMENT PLANS FOR REVIEW, AND THAT ALL CONFLICTS IDENTIFIED BY THE UTILITIES HAVE BEEN RESOLVED. IN ADDITION, "NO CONFLICT" FORMS HAVE BEEN OBTAINED FROM EACH UTILITY COMPANY AND ARE INCLUDED IN THIS SUBMITTAL.

SIGNATURE _____ DATE _____

NOTES FOR IMPROVEMENTS PLANS WHERE THERE IS AN EXISTING ACP OR PVC PIPE:

ANY WATER LINE PROJECT THAT INVOLVES CONNECTING TO AN EXISTING ACP OR PVC PIPE REQUIRES SPECIAL ATTENTION. PER DSPM SECTION 6-1.408:

FITTINGS INSTALLED INTO ASBESTOS CEMENT PIPE (ACP) OR PVC PIPE WITHIN 6-FEET OF ANOTHER FITTING OR JOINT WILL REQUIRE THAT SECTION OF PIPE TO BE REMOVED AND REPLACED WITH DUCTILE IRON PIPE (DIP).

EXISTING TEES, TAPPING SLEEVES AND RELATED APPURTENANCES THAT ARE NOT UTILIZED BY THE DEVELOPMENT SHALL BE REMOVED BY THE CONTRACTOR.

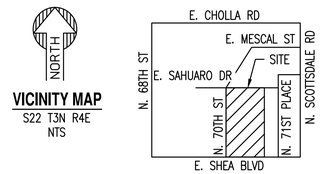
A MINIMUM 3-FOOT SECTION OF PIPE SHALL BE REMOVED, WITH NO LESS THAN 6 FEET REMAINING TO THE NEAREST JOINT. THE REMOVED PIPE SHALL BE REPLACED WITH DIP.

WHEN MORE THAN 3-FEET OF EXISTING ACP OR PVC WATER LINES ARE EXPOSED DURING CONSTRUCTION AND THE BEDDING IS DISTURBED, THE WATER LINE MUST BE REPLACED WITH DIP (MINIMUM CLASS 350) WITH MECHANICAL JOINTS OR FLANGED JOINTS TO 3-FEET PAST THE SIDES OF THE EXPOSED CROSSING TRENCH. REFER TO MAG STANDARD DETAIL NO. 403-3.

NO TAPPING SLEEVE AND VALVE SHALL BE USED ON ACP PIPE. VALVES WILL NEED TO BE CUT INTO ACP PIPE.

DISPOSAL OF MATERIALS CONTAINING ASBESTOS AND/OR LEAD SHALL BE IN CONFORMANCE WITH ALL REGULATIONS, LAWS AND ORDINANCES.

VICINITY MAP



PROJECT TEAM

OWNER
TRAMMELL CROW COMPANY
2575 E. CAMELBACK RD, SUITE 400
PHOENIX, ARIZONA 85016
PHONE: 602-809-0211
ATTN.: PAUL TUCHIN
EMAIL: PTUCHIN@TRAMMELLCROW.COM

CIVIL ENGINEER
SUSTAINABILITY ENGINEERING GROUP
5240 N. 16TH STREET, SUITE 105
PHOENIX, ARIZONA 85016
PHONE: 480-588-7226
ATTN.: ALI FAKIH
EMAIL: ALI@AZSEG.COM

SURVEY
SUPERIOR SURVEYING SERVICES, INC.
2122 W. LONE CACTUS DRIVE, SUITE 11
PHOENIX, ARIZONA 85027
PHONE: 623-869-0223 (EXT. 103)
ATTN.: JAMES WILLIAMSON
EMAIL: JAMES@SUPERIORSURVEYING.COM

ARCHITECT
ESG ARCHITECTURE & DESIGN
350 N. 5TH STREET, SUITE 400
MINNEAPOLIS, MINNESOTA 55401
PHONE: 612-339-5508
ATTN.: LAURA EDER
EMAIL: LAURA.EDER@ESGARCH.COM

LANDSCAPE
COLLECTIV LANDSCAPE ARCHITECTS
1426 N. 2ND STREET, SUITE 200
PHOENIX, ARIZONA 85004
PHONE: 602.358.7711 EXT. 106
ATTN: MICHAEL CHAPMAN
EMAIL: MIKEC@COLLECTIVLA.COM

PROJECT INFO

PROJECT LOCATION:
SITE ADDRESS: 7000 E. SHEA BLVD SCOTTSDALE, AZ 85254

PROJECT DESCRIPTION:
THIS PROJECT IS FOR A MIXED USE NEIGHBORHOOD BUILDING, WITH TWO COURTYARD TERRACES.

SITE DATA:

ASSESSOR PARCEL NUMBER:	175-42-140
ZONING:	PUD-PSD
GROSS AREA:	375,468.94 SF (8.62 AC)
NET AREA:	315,981.40 SF (7.25 AC)
DISTURBED AREA:	189,956.46 SF (4.36 AC)

BASIS OF BEARING:
MONUMENT LINE OF SCOTTSDALE ROAD, ALSO BEING THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 22, USING A BEARING OF NORTH 00 DEGREES 13 MINUTES 09 SECONDS EAST PER THE RECORD OF SURVEY "GEODETIC DENSIFICATION AND CADASTRAL SURVEY", IN BOOK 763 OF MAPS, PAGE 38, RECORDS OF MARICOPA COUNTY, ARIZONA.

BENCHMARK:
THE BENCHMARK USED FOR THIS SURVEY IS THE MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION UNIQUE POINT ID 5842, BEING A 3" CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE, LOCATED AT THE INTERSECTION OF SCOTTSDALE ROAD & CHOLLA STREET, HAVING AN ELEVATION OF 1369.407 FEET, NAVD88.

LEGAL PARCEL DESCRIPTION:
LOT 1 OF 7000 EAST SHEA BOULEVARD, ACCORDING TO THE PLAT OF RECORD IN THE OFFICE OF THE COUNTY RECORDER OF MARICOPA COUNTY, ARIZONA, IN BOOK 1701 OF MAPS, PAGE 37.

APPENDIX II

NOT FOR CONSTRUCTION

SUSTAINABILITY ENGINEERING GROUP
SEG
5240 N. 16TH STREET SUITE 105, PHOENIX, ARIZONA 85016
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

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

DRAWN	LR	12/27/2024
DESIGNED	DJ	12/27/2024
CHECKED	SC	01/15/2025
FINAL QC	AB	04/30/2025
PROJ. MGR.	AB	04/30/2025

DATE: 04/30/2025
ISSUED FOR: DRB

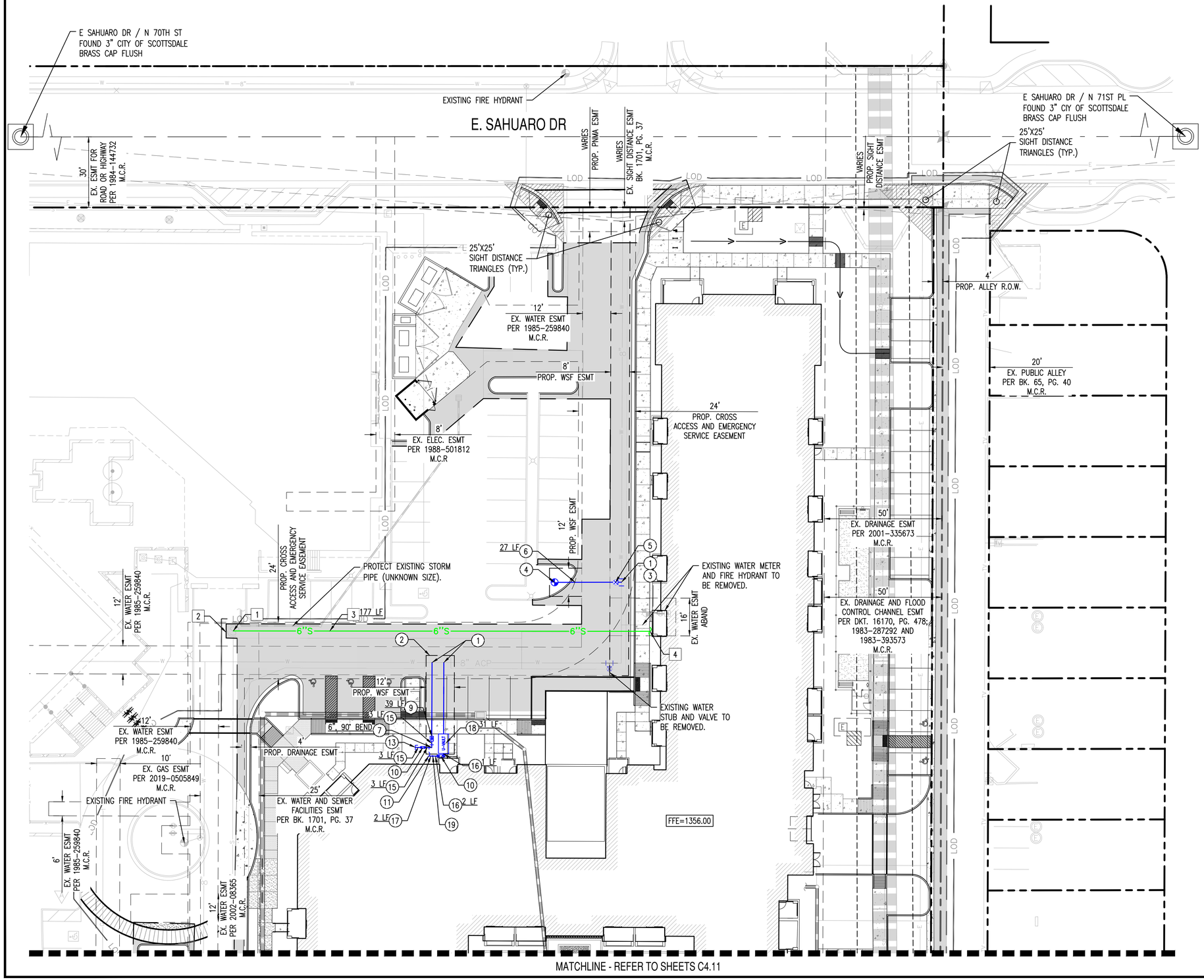
REVISION NO.:	DATE:
1	
2	
3	
4	

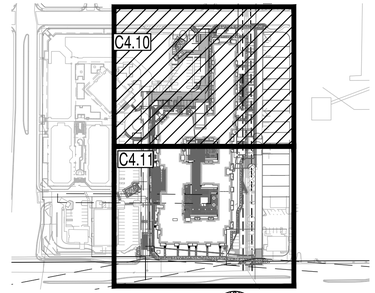
JOB NO.: 230113

SHEET TITLE: PRELIMINARY COVER SHEET & KEYMAP

PAGE NO.: 1 OF 3
SHEET NO.: C4.00

CASE FILE NO's: 973-PA-2022, 6-ZN-2023, 2-GP-2023





KEY MAP
NTS

PRELIMINARY WATER NOTES

1. CONNECTION TO EXISTING WATER LINE.
2. SAWCUT, REMOVE AND REPLACE EXISTING PAVEMENT.
3. PROPOSED TEE, SIZE PER PLAN.
4. PROPOSED FIRE HYDRANT ASSEMBLY.
5. PROPOSED GATE VALVE WITH VALVE BOX AND COVER.
6. 6" DUCTILE IRON PIPE. LENGTH PER PLAN.
7. PROPOSED FITTING, SIZE & ANGLE PER PLAN.
9. 1" IRRIGATION SERVICE CONNECTION. LENGTH PER PLAN.
10. BACKFLOW PREVENTION, SIZE TO MATCH WATER METER SIZE.
11. DOMESTIC CONNECTION TO BUILDING.
13. CAP WATER LINE END AND PROVIDE MARKER.
14. 2" COPPER PIPE. LENGTH PER PLAN.
15. 1" COPPER PIPE. LENGTH PER PLAN.
16. 3" COPPER PIPE. LENGTH PER PLAN.
17. 4" DIP. LENGTH PER PLAN.
18. 3" COPPER DOMESTIC SERVICE CONNECTION. LENGTH PER PLAN.
19. 4" TO 3" REDUCER.

PRELIMINARY SEWER NOTES

1. CONNECTION TO EXISTING SEWER MANHOLE.
2. SAWCUT, REMOVE AND REPLACE EXISTING PAVEMENT.
3. 6" PVC SEWER LINE CONNECTION. LENGTH PER PLAN.
4. SEWER CONNECTION TO BUILDING.

LEGEND

REFER TO SHEET C4.00

NOTE

EASEMENTS LABELED TO BE ABANDONED WILL BE ABANDONED UPON COMPLETION OF DEMOLITION.

APPENDIX II

NORTH

0' 20' 40' 60'

SCALE: 1" = 20'

NOT FOR CONSTRUCTION

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esg

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PROJECT
COSANTI COMMONS

LOCATION
7000 E. SHEA BLVD.
SCOTTSDALE, AZ 85254

DRAWN	LR	12/27/2024
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DATE: 04/30/2025

ISSUED FOR: DRB

REVISION NO.:	DATE:
1	
2	
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4	

JOB NO.: 230113

SHEET TITLE:
PRELIMINARY UTILITY PLAN

PAGE NO.: 2 OF 3

SHEET NO.: **C4.10**

CASE FILE NO's: 973-PA-2022, 6-ZN-2023, 2-GP-2023

MATCHLINE - REFER TO SHEET C4.10

10' EX. GAS ESMT PER 2019-0505849 M.C.R.

12' EX. WATER ESMT PER 1985-259840 M.C.R.

12' EX. WATER ESMT PER 1985-259840 M.C.R.

25' EX. WATER AND SEWER FACILITIES ESMT (TO BE ABANDONED)

12' EX. WATER ESMT TO BE ABANDONED

FFE=1356.00

EXISTING WATER METER TO BE REMOVED

EXISTING SEWER MANHOLES TO BE REMOVED

15' PROP. DRAINAGE AND FLOOD CONTROL ESMT

EXISTING WATER LINE, METERS AND FIRE HYDRANT TO BE REMOVED. CROSS TO BE REMOVED AND REPLACED WITH A TEE.

50' EX. DRAINAGE ESMT PER 94-741748 AND 2001-335672 M.C.R.

8' EX. ELEC ESMT ABAND PER 2002-962300 M.C.R.

6 16 LF

4 E=1348.56

5 E=1347.18

EXISTING SEWER LINE TO BE REMOVED. 145 LF.

EXISTING SEWER MANHOLES AND CLEANOUT TO BE REMOVED

20' EX. PUBLIC ALLEY PER BK. 65, PG. 40 M.C.R.

25' EX. WATER AND SEWER FACILITIES ESMT (TO BE ABANDONED)

24' PROP. CROSS ACCESS AND EMERGENCY SERVICE EASEMENT

36 LF 6

18' PROP. WATER ESMT

12

FIRE RISER ROOM

6" 90° BEND 7

30' EX. TEMP CONST ESMT PER 1983-393579 M.C.R.

23 LF 6

42.1'

12' EX. WATER ESMT ABAND

2' EX. DRAINAGE ESMT PER 1985-484416 AND 1986-036871 M.C.R.

80' EX. DRAINAGE AND FLOOD CONTROL CHANNEL ESMT PER DKT. 16170, PG. 478

EXISTING FIRE HYDRANT

EXISTING WATER LINE TO BE REMOVED. 66 LF.

EXISTING FIRE HYDRANT TO BE REMOVED.

30' ESA & PMA ESMT

25'X25' SIGHT DISTANCE TRIANGLES (TYP.)

10' EX. TEMP. CONST. ESMT

65' EX. R.O.W. PER BK. 1366, PG. 41 M.C.R.

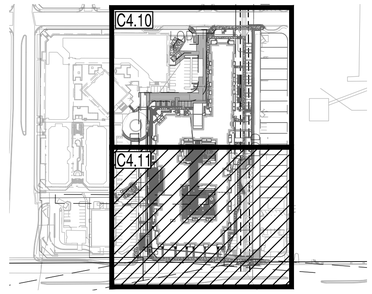
15' PROP. DRAINAGE AND FLOOD CONTROL ESMT

25'X25' SIGHT DISTANCE TRIANGLES (TYP.)

E SHEA BLVD / N 71ST PL CALCULATED POSITION PER BK 65, PG 40 MCR

E SHEA BLVD / N 70TH ST FOUND 3" CITY OF SCOTTSDALE BRASS CAP FLUSH

33' EX. R.O.W. FOR ROAD PURPOSES PER BK. 511, PG. 581 AND BK. 5 PG. 32 M.C.R



KEY MAP
NTS

NORTH

PRELIMINARY WATER NOTES

1. CONNECTION TO EXISTING WATER LINE.
2. SAWCUT, REMOVE AND REPLACE EXISTING PAVEMENT.
3. PROPOSED TEE, SIZE PER PLAN.
4. PROPOSED FIRE HYDRANT ASSEMBLY.
5. PROPOSED GATE VALVE WITH VALVE BOX AND COVER.
6. 6" DUCTILE IRON PIPE. LENGTH PER PLAN.
7. PROPOSED FITTING, SIZE & ANGLE PER PLAN.
12. FIRE CONNECTION TO BUILDING.

PRELIMINARY SEWER NOTES

4. SEWER CONNECTION TO BUILDING.
5. CONNECTION TO EXISTING STUB.
6. REMOVE & REPLACE 8" PVC SEWER LINE. LENGTH PER PLAN.

LEGEND

REFER TO SHEET C4.00

NOTE

EASEMENTS LABELED TO BE ABANDONED WILL BE ABANDONED UPON COMPLETION OF DEMOLITION.

APPENDIX II

NORTH

0' 20' 40' 60'

SCALE: 1" = 20'

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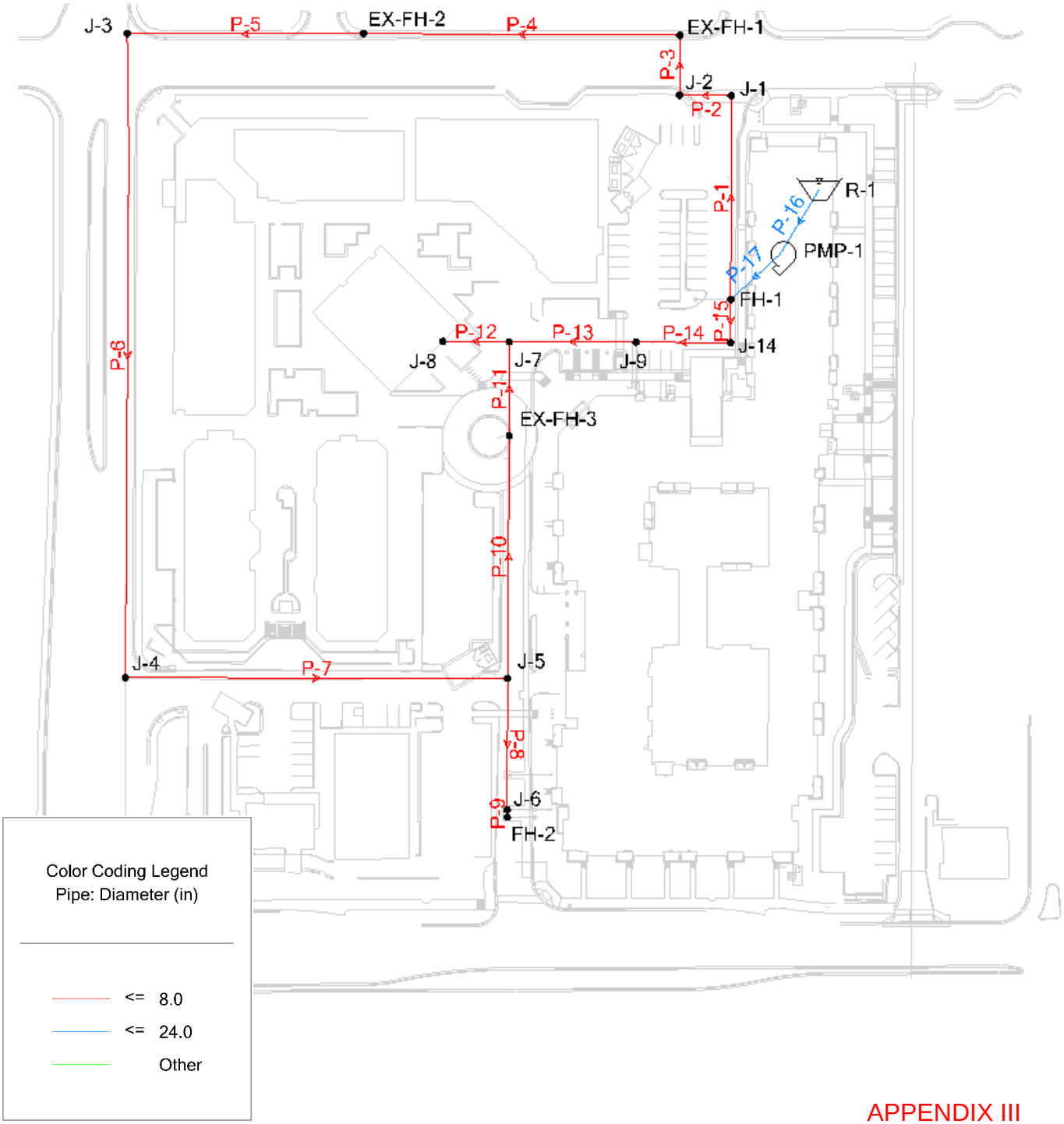
JOB NO.: 230113

SHEET TITLE: **PRELIMINARY UTILITY PLAN**

PAGE NO.: 3 OF 3
SHEET NO.: **C4.11**

CASE FILE NO's: 973-PA-2022, 6-ZN-2023, 2-GP-2023



APPENDIX III

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)
EX-FH-1	1,355.99	0	1,523.05	72	167.06	72
EX-FH-2	1,355.47	0	1,523.04	72	167.57	72
EX-FH-3	1,355.14	0	1,523.01	73	167.87	73
FH-1	1,355.00	0	1,523.05	73	168.05	73
FH-2	1,353.27	0	1,523.01	73	169.74	73
J-1	1,356.11	0	1,523.05	72	166.94	72
J-2	1,356.27	0	1,523.05	72	166.78	72
J-3	1,354.70	0	1,523.04	73	168.34	73
J-4	1,352.21	0	1,523.02	74	170.81	74
J-5	1,354.37	0	1,523.01	73	168.64	73
J-6	1,353.43	26	1,523.01	73	169.58	73
J-7	1,355.38	0	1,523.01	73	167.63	73
J-8	1,360.34	88	1,523.00	70	162.66	70
J-9	1,355.10	26	1,523.03	73	167.93	73
J-10	1,354.78	0	1,523.05	73	168.27	73

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.000	0.21
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.000	0.21
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.000	0.21
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.000	0.21
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.000	0.21
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.000	0.21
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.000	0.21
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.000	0.16
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.000	0.00
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.000	0.05
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.000	0.05
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.000	0.56
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.000	0.52
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.000	0.68
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.000	0.68
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.000	0.10
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.000	0.10

APPENDIX III

Average Day Demand

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,357.00	1,523.06	139	166.06	PMP-1

APPENDIX III

Average Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	139	1,357.00

APPENDIX III

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)
EX-FH-1	1,355.99	0	1,522.34	72	166.35	72
EX-FH-2	1,355.47	0	1,522.31	72	166.84	72
EX-FH-3	1,355.14	0	1,522.21	72	167.07	72
FH-1	1,355.00	0	1,522.36	72	167.36	72
FH-2	1,353.27	0	1,522.20	73	168.93	73
J-1	1,356.11	0	1,522.35	72	166.24	72
J-2	1,356.27	0	1,522.34	72	166.07	72
J-3	1,354.70	0	1,522.29	73	167.59	73
J-4	1,352.21	0	1,522.24	74	170.03	74
J-5	1,354.37	0	1,522.21	73	167.84	73
J-6	1,353.43	51	1,522.20	73	168.77	73
J-7	1,355.38	0	1,522.21	72	166.83	72
J-8	1,360.34	176	1,522.17	70	161.83	70
J-9	1,355.10	51	1,522.26	72	167.16	72
J-10	1,354.78	0	1,522.33	72	167.55	72

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.000	0.42
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.000	0.42
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.000	0.42
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.000	0.42
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.000	0.42
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.000	0.42
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.000	0.42
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.000	0.33
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.000	0.00
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.000	0.09
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.000	0.09
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.001	1.12
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.001	1.03
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.001	1.36
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.001	1.36
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.000	0.20
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.000	0.20

APPENDIX III

Maximum Day Demand

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,357.00	1,522.36	278	165.36	PMP-1

APPENDIX III

Maximum Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	278	1,357.00

APPENDIX III

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)
EX-FH-1	1,355.99	0	1,520.55	71	164.56	71
EX-FH-2	1,355.47	0	1,520.48	71	165.01	71
EX-FH-3	1,355.14	0	1,520.19	71	165.05	71
FH-1	1,355.00	0	1,520.62	72	165.62	72
FH-2	1,353.27	0	1,520.17	72	166.90	72
J-1	1,356.11	0	1,520.58	71	164.47	71
J-2	1,356.27	0	1,520.56	71	164.29	71
J-3	1,354.70	0	1,520.42	72	165.72	72
J-4	1,352.21	0	1,520.28	73	168.07	73
J-5	1,354.37	0	1,520.19	72	165.82	72
J-6	1,353.43	89	1,520.17	72	166.74	72
J-7	1,355.38	0	1,520.19	71	164.81	71
J-8	1,360.34	308	1,520.09	69	159.75	69
J-9	1,355.10	89	1,520.34	71	165.24	71
J-10	1,354.78	0	1,520.53	72	165.75	72

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.000	0.73
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.000	0.73
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.000	0.73
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.000	0.73
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.000	0.73
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.000	0.73
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.000	0.73
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.000	0.57
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.000	0.00
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.000	0.16
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.000	0.16
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.002	1.96
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.002	1.81
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.003	2.38
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.003	2.38
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.000	0.34
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.000	0.34

APPENDIX III

Peak Hour Demand

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,357.00	1,520.62	486	163.62	PMP-1

APPENDIX III

Peak Hour Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	486	1,357.00

APPENDIX III

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)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)
EX-FH-1	2,500	3,500	72	3,500	10	38	EX-FH-2	P-1	16.71
EX-FH-2	2,500	3,500	72	3,500	5	36	J-3	P-1	14.53
EX-FH-3	2,500	3,500	72	3,500	9	36	J-8	P-15	17.56
FH-1	2,500	3,500	72	3,500	21	41	J-8	P-17	2.68
FH-2	2,500	3,427	73	3,427	0	31	J-6	P-8	22.20
J-1	2,500	3,500	72	3,500	13	39	J-2	P-1	17.78
J-2	2,500	3,500	72	3,500	11	38	EX-FH-1	P-1	17.26
J-3	2,500	3,500	73	3,500	2	36	EX-FH-2	P-1	13.24
J-4	2,500	3,500	74	3,500	2	37	J-5	P-15	13.99
J-5	2,500	3,500	73	3,500	5	35	J-6	P-15	15.98
J-6	2,551	3,435	73	3,486	0	31	FH-2	P-8	22.25
J-7	2,500	3,500	72	3,500	11	35	J-8	P-15	18.32
J-8	2,676	3,500	70	3,676	4	38	J-7	P-12	23.46
J-9	2,551	3,500	72	3,551	15	38	J-8	P-15	19.74
J-10	2,500	3,500	72	3,500	19	40	J-8	P-15	21.54

APPENDIX III

Split FF

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
EX-FH-1	1,355.99	0	1,454.05	42	98.06	42
EX-FH-2	1,355.47	0	1,452.85	42	97.38	42
EX-FH-3	1,355.14	500	1,449.03	41	93.89	41
FH-1	1,355.00	1,000	1,455.25	43	100.25	43
FH-2	1,353.27	1,000	1,446.15	40	92.88	40
J-1	1,356.11	0	1,454.48	43	98.37	43
J-2	1,356.27	0	1,454.28	42	98.01	42
J-3	1,354.70	0	1,451.96	42	97.26	42
J-4	1,352.21	0	1,449.52	42	97.31	42
J-5	1,354.37	0	1,448.07	41	93.70	41
J-6	1,353.43	51	1,446.24	40	92.81	40
J-7	1,355.38	0	1,450.29	41	94.91	41
J-8	1,360.34	176	1,450.26	39	89.92	39
J-9	1,355.10	51	1,452.58	42	97.48	42
J-10	1,354.78	0	1,454.41	43	99.63	43

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.005	3.32
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.005	3.32
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.005	3.32
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.005	3.32
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.005	3.32
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.005	3.32
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.005	3.32
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.017	6.71
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.016	6.38
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.005	3.39
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.017	6.58
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.001	1.12
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.023	7.70
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.024	8.03
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.024	8.03
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.001	1.97
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.001	1.97

APPENDIX III

Split FF

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,356.97	1,455.27	2,778	98.30	PMP-1

APPENDIX III

Split FF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	2,778	1,357.00

APPENDIX III

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)
EX-FH-1	1,355.99	0	1,522.29	72	166.30	72
EX-FH-2	1,355.47	0	1,522.26	72	166.79	72
EX-FH-3	1,355.14	0	1,522.15	72	167.01	72
FH-1	1,355.00	0	1,522.32	72	167.32	72
FH-2	1,353.27	0	1,522.15	73	168.88	73
J-1	1,356.11	0	1,522.30	72	166.19	72
J-2	1,356.27	0	1,522.29	72	166.02	72
J-3	1,354.70	0	1,522.24	72	167.54	72
J-4	1,352.21	0	1,522.19	74	169.98	74
J-5	1,354.37	0	1,522.16	73	167.79	73
J-6	1,353.43	26	1,522.15	73	168.72	73
J-7	1,355.38	0	1,522.15	72	166.77	72
J-8	1,360.34	226	1,522.09	70	161.75	70
J-9	1,355.10	26	1,522.22	72	167.12	72
J-10	1,354.78	0	1,522.28	72	167.50	72

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.000	0.43
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.000	0.43
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.000	0.43
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.000	0.43
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.000	0.43
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.000	0.43
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.000	0.43
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.000	0.17
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.000	0.00
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.000	0.26
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.000	0.26
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.001	1.44
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.001	1.19
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.001	1.36
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.001	1.36
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.000	0.20
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.000	0.20

APPENDIX III

Average Day Demand

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,357.00	1,522.32	279	165.32	PMP-1

APPENDIX III

Average Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	279	1,357.00

APPENDIX III

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)
EX-FH-1	1,355.99	0	1,519.70	71	163.71	71
EX-FH-2	1,355.47	0	1,519.61	71	164.14	71
EX-FH-3	1,355.14	0	1,519.19	71	164.05	71
FH-1	1,355.00	0	1,519.80	71	164.80	71
FH-2	1,353.27	0	1,519.22	72	165.95	72
J-1	1,356.11	0	1,519.74	71	163.63	71
J-2	1,356.27	0	1,519.72	71	163.45	71
J-3	1,354.70	0	1,519.53	71	164.83	71
J-4	1,352.21	0	1,519.34	72	167.13	72
J-5	1,354.37	0	1,519.22	71	164.85	71
J-6	1,353.43	53	1,519.22	72	165.79	72
J-7	1,355.38	0	1,519.18	71	163.80	71
J-8	1,360.34	452	1,518.99	69	158.65	69
J-9	1,355.10	53	1,519.44	71	164.34	71
J-10	1,354.78	0	1,519.69	71	164.91	71

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.000	0.85
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.000	0.85
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.000	0.85
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.000	0.85
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.000	0.85
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.000	0.85
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.000	0.85
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.000	0.34
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.000	0.00
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.000	0.51
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.000	0.51
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.004	2.89
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.003	2.37
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.003	2.71
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.003	2.71
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.000	0.40
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.000	0.40

APPENDIX III

Maximum Day Demand

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,357.00	1,519.80	558	162.80	PMP-1

APPENDIX III

Maximum Day Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	558	1,357.00

APPENDIX III

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)
EX-FH-1	1,355.99	0	1,513.19	68	157.20	68
EX-FH-2	1,355.47	0	1,512.92	68	157.45	68
EX-FH-3	1,355.14	0	1,511.76	68	156.62	68
FH-1	1,355.00	0	1,513.46	69	158.46	69
FH-2	1,353.27	0	1,511.82	69	158.55	69
J-1	1,356.11	0	1,513.29	68	157.18	68
J-2	1,356.27	0	1,513.25	68	156.98	68
J-3	1,354.70	0	1,512.72	68	158.02	68
J-4	1,352.21	0	1,512.17	69	159.96	69
J-5	1,354.37	0	1,511.84	68	157.47	68
J-6	1,353.43	93	1,511.82	69	158.39	69
J-7	1,355.38	0	1,511.73	68	156.35	68
J-8	1,360.34	791	1,511.18	65	150.84	65
J-9	1,355.10	93	1,512.46	68	157.36	68
J-10	1,354.78	0	1,513.15	69	158.37	69

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.001	1.49
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.001	1.49
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.001	1.49
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.001	1.49
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.001	1.49
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.001	1.49
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.001	1.49
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.000	0.59
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.000	0.00
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.000	0.90
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.000	0.90
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.010	5.05
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.007	4.15
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.009	4.74
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.009	4.74
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.000	0.69
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.000	0.69

APPENDIX III

Peak Hour Demand

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,357.00	1,513.47	977	156.47	PMP-1

APPENDIX III

Peak Hour Demand

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	977	1,357.00

APPENDIX III

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)	Pressure (Calculated Zone Lower Limit @ Total Flow Needed) (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)
EX-FH-1	2,500	3,500	71	3,500	2	32	EX-FH-2	P-1	16.92
EX-FH-2	2,500	3,409	71	3,409	0	30	J-3	P-1	14.36
EX-FH-3	2,500	3,494	71	3,494	0	29	J-8	P-15	18.95
FH-1	2,500	3,500	71	3,500	13	35	J-8	P-12	2.89
FH-2	2,500	3,208	72	3,208	0	24	J-6	P-8	20.81
J-1	2,500	3,500	71	3,500	5	33	J-2	P-1	18.01
J-2	2,500	3,500	71	3,500	4	32	EX-FH-1	P-1	17.47
J-3	2,500	3,349	71	3,349	0	30	EX-FH-2	P-1	12.88
J-4	2,500	3,342	72	3,342	0	30	J-5	P-15	14.98
J-5	2,500	3,393	71	3,393	0	28	J-6	P-15	17.03
J-6	2,553	3,215	72	3,268	0	24	FH-2	P-8	20.86
J-7	2,500	3,484	71	3,484	2	28	J-8	P-15	19.60
J-8	2,952	3,350	69	3,802	0	31	J-7	P-12	24.27
J-9	2,553	3,500	71	3,553	6	31	J-8	P-15	21.17
J-10	2,500	3,500	71	3,500	11	34	J-8	P-15	23.11

APPENDIX III

Split FF

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)	Pressure (Maximum) (psi)
EX-FH-1	1,355.99	0	1,440.52	37	84.53	37
EX-FH-2	1,355.47	0	1,439.07	36	83.60	36
EX-FH-3	1,355.14	500	1,434.08	34	78.94	34
FH-1	1,355.00	1,000	1,441.96	38	86.96	38
FH-2	1,353.27	1,000	1,431.36	34	78.09	34
J-1	1,356.11	0	1,441.03	37	84.92	37
J-2	1,356.27	0	1,440.79	37	84.52	37
J-3	1,354.70	0	1,437.99	36	83.29	36
J-4	1,352.21	0	1,435.04	36	82.83	36
J-5	1,354.37	0	1,433.29	34	78.92	34
J-6	1,353.43	53	1,431.45	34	78.02	34
J-7	1,355.38	0	1,435.22	35	79.84	35
J-8	1,360.34	452	1,435.02	32	74.68	32
J-9	1,355.10	53	1,438.34	36	83.24	36
J-10	1,354.78	0	1,440.83	37	86.05	37

APPENDIX III

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	Asbestos Cement	163	FH-1	J-1	140.0	0.006	3.68
P-2	8.0	Asbestos Cement	41	J-1	J-2	140.0	0.006	3.68
P-3	8.0	Asbestos Cement	48	J-2	EX-FH-1	140.0	0.006	3.68
P-4	8.0	Asbestos Cement	253	EX-FH-1	EX-FH-2	140.0	0.006	3.68
P-5	8.0	Asbestos Cement	189	EX-FH-2	J-3	140.0	0.006	3.68
P-6	8.0	Asbestos Cement	514	J-3	J-4	140.0	0.006	3.68
P-7	8.0	Asbestos Cement	305	J-4	J-5	140.0	0.006	3.68
P-8	8.0	Asbestos Cement	105	J-5	J-6	140.0	0.018	6.72
P-9	8.0	Asbestos Cement	6	J-6	FH-2	140.0	0.016	6.38
P-10	8.0	Asbestos Cement	193	J-5	EX-FH-3	140.0	0.004	3.04
P-11	8.0	Asbestos Cement	75	EX-FH-3	J-7	140.0	0.015	6.24
P-12	8.0	Asbestos Cement	53	J-7	J-8	140.0	0.004	2.89
P-13	8.0	Asbestos Cement	101	J-7	J-9	140.0	0.031	9.12
P-14	8.0	Asbestos Cement	75	J-9	J-10	140.0	0.033	9.46
P-15	8.0	Asbestos Cement	34	J-10	FH-1	140.0	0.033	9.46
P-16	24.0	Asbestos Cement	61	R-1	PMP-1	140.0	0.001	2.17
P-17	24.0	Asbestos Cement	53	PMP-1	FH-1	140.0	0.001	2.17

APPENDIX III

Split FF

Pump Table - Time: 0.00 hours

Label	Elevation (ft)	Status (Initial)	Hydraulic Grade (Suction) (ft)	Hydraulic Grade (Discharge) (ft)	Flow (Total) (gpm)	Pump Head (ft)	Pump Definition
PMP-1	1,356.00	On	1,356.96	1,441.99	3,058	85.03	PMP-1

APPENDIX III

Split FF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	1,357.00	3,058	1,357.00

APPENDIX III

Pump Definition Detailed Report: PMP-1

Element Details			
ID	77	Notes	
Label	PMP-1		

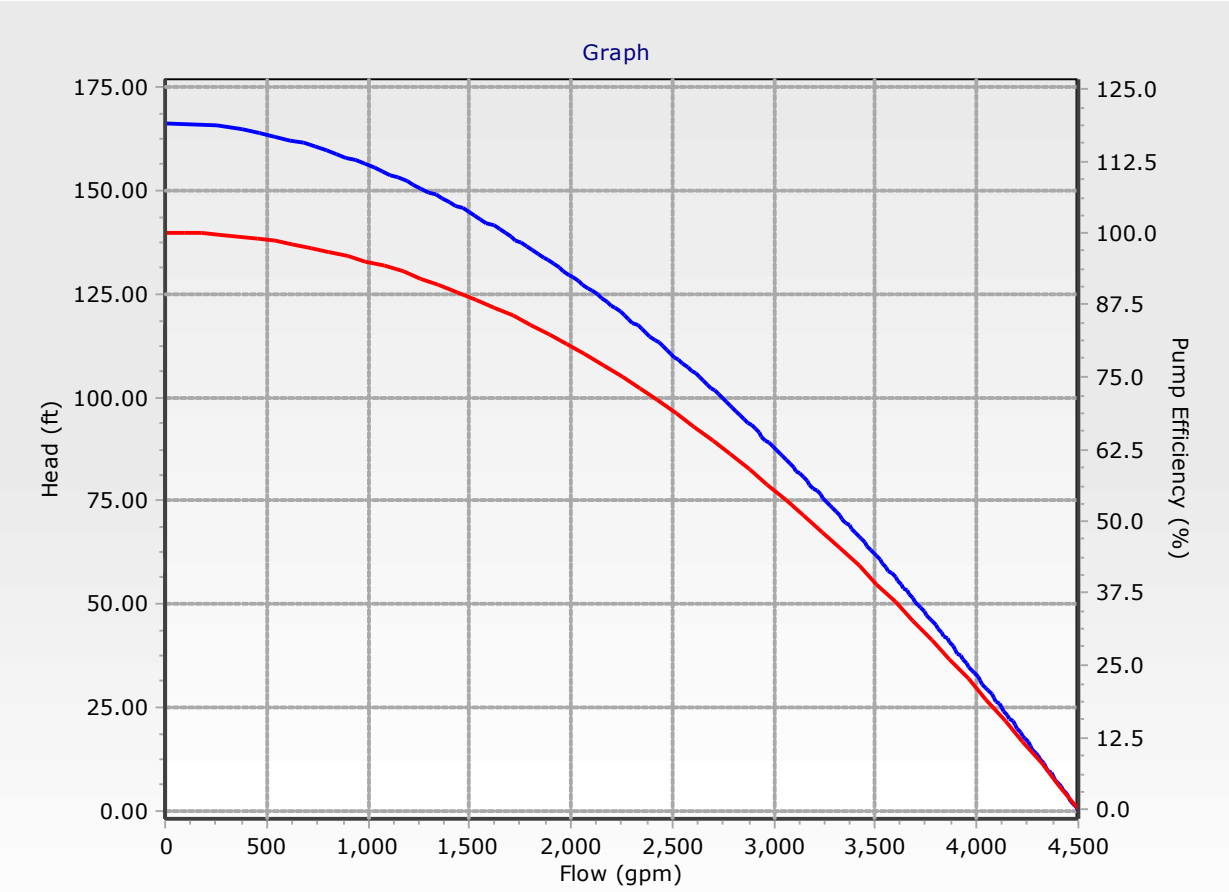
Pump Definition Type			
Pump Definition Type	Standard (3 Point)	Design Head	113.19 ft
Shutoff Flow	0 gpm	Maximum Operating Flow	3,365 gpm
Shutoff Head	166.32 ft	Maximum Operating Head	69.30 ft
Design Flow	2,431 gpm		

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·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

APPENDIX III

Pump Definition Detailed Report: PMP-1



APPENDIX III

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	-	Community pool demands not included here. Refer to separate category.
2 – 2.9 DU/ac	470.4		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	
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	-	Baed 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.

TABLE INPUT VALUES LAST UPDATED: 5/19/2023

APPENDIX IV

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 INPUT VALUES LAST UPDATED: 5/19/2023

APPENDIX IV

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.

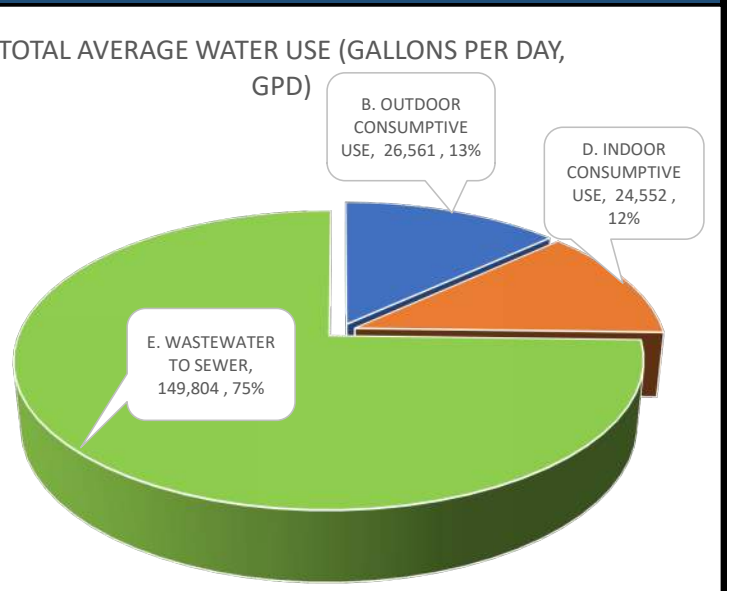


TABLE INPUT VALUES LAST UPDATED: 5/19/2023

APPENDIX IV

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/ Commerical 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: Commerical/ 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%
Commerical 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.

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