MASTER WATER REPORT
FOR
DEVELOPMENT UNIT 7
AT
MESA PROVING GROUNDS

December 20, 2011
WP# 113697.02

REVIEWED BY
CITY STAFF
BY
1/18/12
DATE

WOOD/PATEL
MISSION: CLIENT SERVICE™

MASTER WATER REPORT
FOR
DEVELOPMENT UNIT 7
AT
EASTMARK

Revised August 10, 2012
December 20, 2011
WP# 113697.02

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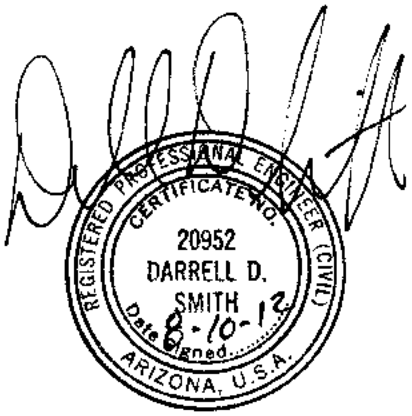

EXPIRES 6-30-13

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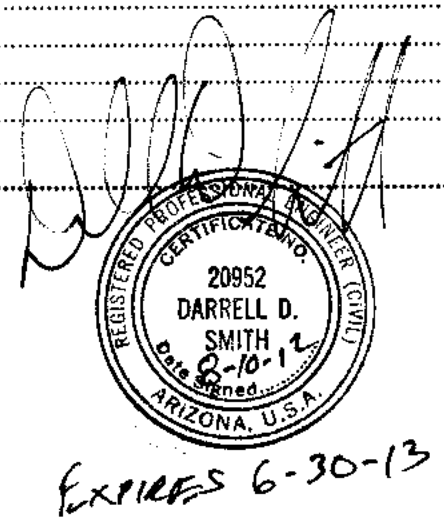

EXPIRES 6-30-13

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1.0 INTRODUCTION

1.1 General Background and Project Location

The proposed Development Unit 7 (Site) is anticipated to be an approximate 582-acre Development Unit (DU) within the 3,151-acre Eastmark master planned community (formerly known as Mesa Proving Grounds), in Mesa, Arizona. It is a Planned Community District (PCD) which is a mixed-use development that will include single-family residential, multi-family residential, commercial uses, various community uses, and open space.

This Master Water Report has been prepared in accordance with Wood, Patel & Associates, Inc.'s (Wood/Patel's) understanding of the City's technical requirements for water distribution systems as applicable for the Eastmark.

The Site is located within portions of Sections 22 and 23 of Township 1 South, Range 7 East of the Gila and Salt River Meridian. The Site is bounded by the Warner Road (South) alignment to the north, Ray Road and the Powerline Floodway on the south, Signal Butte Road to the east, and Spine Road West on the west. Please refer to the attached Plate 1 – *Vicinity Map.*

1.2 Scope of Master Water Report Update

This Master Water Report for Development Unit 7 at Eastmark has been updated by removing a previously modeled section of 12-inch waterline along the DU 7 Phase 1 / Phase 2 boundary from Spine Road East to Spine Road West, Pipe P-860. Report results reflect pressures and flows are adequate with this section of pipe removed from the model.

The DU 7 Master Water Report presents water demands, and water main sizes and locations as required to provide water service to the Site during initial and full build-out conditions. The purpose of this report is to provide a water analysis reflecting the developed condition of DU 7 based on a Conceptual Land Use Plan and consistent with the *Master Water Report for Eastmark,* dated August 10, 2012. While the development of Eastmark will take place over a significant time period, development of DU 7 is anticipated to develop first. It is the goal of this DU 7 Master Water Report to identify

the water infrastructure required to serve the Site while meeting the requirements of the City's Engineering and Design Standards.

Updates to the DU 7 Master Water Report may be required if significant changes are made to the land uses and assumptions utilized to prepare this report. Additionally, design criteria may change based on actual water demands to calculate draws on the system in the future.

1.3 Water Master Report for Eastmark

The *Master Water Report for Eastmark*, by Wood, Patel and Associates, Inc. dated June 12, 2009 was approved by the City of Mesa. The approved report set the design criteria required within Eastmark. The *Master Water Report Update for Eastmark*, by Wood, Patel and Associates, Inc. dated August 10, 2012 is being submitted to the City of Mesa for review and reapproval. The updated report included revised water infrastructure within DU 7. The updated master report includes the revised information utilized as the bases for this report.

1.4 Full Build-Out Condition

The design criteria utilized to calculate water flows and to determine required pipe sizes for the Site are based on projected full build-out conditions for the DU 7. For a detailed breakdown of DU 7 modeled land use, please refer to the following:

- Table 2 – *Modeled Land Use*
- Table 3 – *DU 7 Modeled Land Use*
- Plate 2 – *DU 7 Master Water Exhibit*

1.5 Construction Phasing

It is anticipated that DU 7 construction and associated water infrastructure will be phased. Phase 1 is anticipated to include the southern half of DU 7 along the Ray Road corridor, and is proposed to consist of single-family residential, commercial, church, and various community uses. Phase 2 is anticipated to include the northern half of DU7, and is proposed to consist of single-family residential, multi-family residential, educational, church, and commercial uses. Please see Plate 2 – *DU 7 Master Water Exhibit* for the anticipated phasing plan.

1.6 Basis of Design Reports for Specific Individual Developments

As development progresses within the Site, Basis of Design (BOD) reports are required for specific individual developments to ensure compliance with the Master Report and this Development Unit Master Report, and to identify significant variations in land use, water demands, and the water infrastructure needed to serve the parcel.

2.0 EXISTING CONDITIONS

2.1 Topographic Conditions

The Site consists of multiple automotive test tracks and undisturbed desert which will surround the Site to the northern, southern, and western boundaries. The Site is bordered on the east by residential developments that have recently been constructed or are currently under construction. The land generally slopes in a southwesterly direction at approximately 0.5 to 1 percent. The peak elevation within the Site is approximately 1,450 feet above mean sea level (MSL), located near the intersection of Signal Butte Road and Warner Road. The lowest elevation within the Site is approximately 1,412 feet MSL, located at the intersection of Warner Road South and Spine Road West. See Plate 1 – *Vicinity Map* for roadway alignments.

2.2 Existing Pressure Zones and Hydraulic Grade Lines

The Site is located within the Desert Wells water pressure zone, defined by the City of Mesa as follows:

Desert Wells Pressure Zone:

- Ground elevation range = 1,370 to 1,520 feet
- Static hydraulic grade line (HGL) = 1,634 feet.

2.3 Existing Offsite Water Infrastructure

Relevant existing water infrastructure adjacent to the Site includes the following within the Desert Wells Pressure Zone:

- 16-inch waterlines extending south along Ellsworth Road from Elliot Road to Pecos Road.
- 30-inch waterline extending south along Signal Butte Road from Elliot Road to Ruben Ave.
- 16-inch waterlines extending south along Signal Butte Road from Elliot Road to East Sonneto Avenue.
- 16-inch waterlines extending east along Elliot Road from Ellsworth Road to Signal Butte Road.

- 12-inch waterline extending east along Warner Road from the Loop 202 freeway to Ellsworth Road.

2.4 Existing Onsite Water Infrastructure

It is Wood/Patel's understanding there are existing onsite water service lines for the General Motors Proving Grounds offices and facilities. These waterlines will be removed by the developer, where applicable, with construction of DU 7.

3.0 DESIGN CRITERIA AND PROJECTED WATER DEMANDS

3.1 Design Criteria

Water demand and pipe-sizing criteria utilized in this DU 7 Master Water Report are based on Wood/Patel's understanding of the following:

- The Master Water Report for Eastmark,
- Design Criteria listed in the 2009 City of Mesa Engineering Design Standards,
- Regionally accepted design standards.

Table 1 – *Water System Design Criteria* represents Unit Daily Water Demand design criteria for each land use category. The Development Unit Daily Water Demand was used to estimate demands at each node in the hydraulic model to determine flow rates, velocities, and pipe sizing.

3.2 Water Demand Design Flows

Water demand flows under full build-out conditions are calculated using the design criteria listed in Section 3.1. For detailed calculations, see Table 4 – *Water Demand Design Flows*. Design flows are summarized below and include the Development Unit 6 Phase 1 and development unit adjustments.

	Average-Day Demand MGD (gpm)	Peak-Day Demand MGD (gpm)	Peak-Hour Demand MGD (gpm)
First Solar site - DU6	0.078 (54)	0.141 (98)	0.240 (167)
DU7	0.79(552)	1.43(993)	2.43(1688)
Total	**0.87 (606)**	**1.57 (1,091)**	**2.67 (1,853)**

4.0 HYDRAULIC MODEL

Bentley WaterCAD Version 8i, a potable water transmission and distribution system numerical modeling program, was utilized to analyze the proposed potable water system. A hydraulic grade line (HGL) of 1,634 feet was used to simulate the water supply pressure for the Desert Wells pressure zone. Water demands and peaking factors utilized are based on information listed in Section 3.0. Pipes are sized to accommodate modeled conditions of flow.

4.1 Modeled Scenarios

The following primary modeling scenarios were selected to demonstrate compliance with City of Mesa requirements, and analyze the proposed water system:

- Average Daily Demand
- Peak Daily Demand
- Peak Hour Demand
- Peak Daily Demand Plus Fire Flow
- Fire Flow Analyses

The hydraulic model utilizes the Hazen-Williams equation to calculate head losses throughout the system during the modeled scenarios. Please refer to Table 1 for additional information regarding hydraulic modeling parameters.

4.2 Hydraulic Modeling Assumptions

Several assumptions were made regarding offsite water infrastructure for the purpose of modeling DU 7 to full build-out design conditions. The proposed infrastructure anticipates tie-ins to the existing 16-inch waterline in Signal Butte Road in multiple locations. The first location is at the intersection of Warner Road and Signal Butte Road. The second location is at the intersection of Sonneto Avenue and Signal Butte Road. The third connection is located at the intersection of Rueben Avenue and Signal Butte Road. Refer to Plate 2 for detailed information regarding future offsite water infrastructure. With multiple tie-ins, the water system has redundancy allowing for construction phasing, and allows the water system to function in compliance with City of Mesa standards and specifications. A 30-inch waterline will be constructed connecting to the existing 30-inch line at the intersection of Rueben Avenue and Signal Butte Road and will continue along Signal Butte Road and end near the intersection of Ray Road and Signal Butte Road. The 30-inch pipe is for future water system demands and will not be used in the DU 7 hydraulic model therefore showing up in the modeling results as a closed pipe.

4.3 Hydraulic Modeling Results

The hydraulic modeling results indicate the onsite system in DU 7 is capable of delivering average daily and peak hour demands within the following onsite pressure ranges:

DU 7 Full Build-Out Pressure (psi)

Hydraulic Model Scenario	Low	Node	High	Node
Average Daily Demand	79	J-880	95	J-440
Peak Hour Demand	78	J-880	93	J-410

Fire flow results from the model indicate available mainline fire flows exceed 4,000 gpm at individual modeling nodes during peak daily demand, while maintaining residual pressures greater than 20 psi throughout the Site at full build-out conditions. Detailed hydraulic modeling results, calculations, and exhibits are provided in the attached appendices and plates. Modeled outflow from each water source is shown below:

Flow from South CAP Desert Wells Pump Station:

Average Day Demand: 535 gpm
Peak Day Demand: 964 gpm
Peak Hour Demand: 1,638 gpm

Flow from City of Mesa Water System, North of Elliot Road:

Average Day Demand: 71 gpm
Peak Day Demand: 127 gpm
Peak Hour Demand: 216 gpm

5.0 GENERAL PLAN FOR ONSITE WATER DISTRIBUTION

5.1 Piping Layout

The planned water distribution system for the Site consists of looped public waterlines ranging in diameter from 12 inches through 30 inches using pipe materials per City of Mesa standards. Main waterlines have been located within designated public rights-of-way. In accordance with City of Mesa standards, 12-inch and 16-inch waterlines are generally located near ½-mile and 1-mile street alignments or are upsized as needed to meet design constraints. Please refer to Plate 2 – *DU 7Master Water Exhibit.* As noted on the exhibit, some onsite waterlines require upsizing to meet regional City of Mesa water demands.

5.2 Water Sources

According to the *2010 City of Mesa Water Master Plan Update,* two primary sources of water will supply Eastmark. These sources are surface water supplied from the CAP canal, and groundwater from proposed well sites.

5.2.1 Surface Water

The first phase of the South CAP Water Treatment Plant, consisting of the first reservoir and the first section of the booster pump station, is currently being constructed to provide storage and assist in meeting peak demands in the Desert Wells Zone. A portion of the facility will serve Eastmark in the interim until such time as the City deems it necessary to construct the CAP raw water conveyance system from the CAP canal and the water treatment portion of the plant.

According to the *2010 City of Mesa Water Master Plan Update,* the CAP water supply system typically provides a constant supply of surface water, although outages are possible as a result of failures and for periodic maintenance. CAP has indicated that short dry-ups (ranging from one week to one month in duration) may be required every two to three years on average for maintenance purposes. According to the *2010 City of Mesa Water Master Plan Update,* the South CAP water facilities will be supplied by groundwater production wells

during CAP dry-ups to provide adequate storage and pumping to the Desert Wells Pressure Zone and other pressure zones.

5.2.2 Groundwater Wells

Conceptual locations of the future groundwater wells are shown in Plate 2. Well locations are conceptual in nature and will be coordinated with the City of Mesa during the construction plan design and preparation. Well collection lines will be required extending from each well site to supply the South CAP water facilities. It is Wood/Patel's understanding the well sites and well collector mains will be phased with development and will be owned, operated, and maintained by the City of Mesa.

5.3 Water Pressure to Multi-Story Buildings

Based on full build-out hydraulic modeling results, peak-hour residual pressures within the Site are at or above 70 pounds per square inch (psi). Private individual booster pumps may be required to serve multi-story buildings, and should be evaluated on an individual basis.

5.4 Water System Phasing

The water system in DU 7 will be built in two phases to coincide with the DU 7 construction phasing. Please refer to Plate 2 – *DU7 Master Water Exhibit* for infrastructure phasing, and Plate 1 – *Vicinity Map* for street locations.

Phase 1 includes:

- A 12-inch waterline extending east and west from Spine Road East across the parcel along the phase line to Signal Butte Road.
- A 16-inch waterline extending east and west along Ray Road from Spine Road West to Signal Butte Road.
- A 12-inch waterline extending north and south along Spine Road West from the phase line to Ray Road.
- A 20-inch waterline extending north and south along Spine Road East from the phase line to Ray Road.

- A 12-inch Waterline extending north and south approximately 2,300 feet west of Signal Butte from the phase line to Ray Road.
- A 16-inch Waterline extending north and south along Signal Butte Road from Ray Road to the intersection of Sonneto Avenue and Signal Butte Road.

Phase 2 includes:

- A 24-inch waterline extending east and west along Warner Road south from Spine Road West to Signal Butte Road.
- A 12-inch waterline extending north and south along Spine Road West from the phase line to Warner Road South.
- A 20-inch waterline extending north and south along Spine Road East from the phase line to Warner Road South.
- A 12-inch waterline extending north and south approximately 2,400 feet west of Signal Butte Road from the phase line to Warner Road South.

6.0 CONCLUSIONS

The *Master Water Report for Development Unit 7 at Eastmark* meets accepted standards and requirements, and will serve, in conjunction with the *Master Water Report for Eastmark*, as a guide for construction documents associated with the planned potable water systems of DU 7. No critical issues were identified that would preclude the anticipated development as presented in this Master Water Report. The following are critical conclusions:

1. The Site is located within the existing Desert Wells water pressure zone currently served by the City of Mesa.

2. For the purpose of this Master Water Report, the full build-out conditions for DU 7 have been evaluated for the design of the water distribution system. It is anticipated waterline construction will be phased to correspond with DU 7 phasing.

3. The approximate average daily water demand for DU 7 is 0.79 million gallons per day (MGD) at full build-out conditions, per Section 3.2 of this report.

4. A hydraulic model was utilized to analyze the proposed potable water system and size pipes for the water distribution system. Modeling results indicate minimum residual pressures are met, and head loss and velocities within the planned waterlines meet the design criteria presented herein.

5. The planned onsite water distribution system for DU 7 consists of looped public waterlines ranging in diameter from 12 inches through 30 inches.

6. The proposed water distribution system and resulting hydraulic modeling output anticipates City of Mesa water production facilities and booster pump station facilities will be brought into service as necessary.

7. This *Master Water Report for Development Unit 7 at Eastmark* demonstrates the sufficiency of the proposed water distribution system to serve the Site in accordance with City of Mesa Water Standards and *The Master Water Report for Eastmark.*

TABLE 1

Water System Design Criteria

WOOD/PATEL

TABLE 1 - WATER SYSTEM DESIGN CRITERIA

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS • CONSTRUCTION MANAGERS

Project: Eastmark - DU 7
Location: Mesa, Arizona
References: 2009 City of Mesa Engineering Design Standards

Proj. Number: 113697.02
Proj. Engineer: Darrell Smith, P.E.

UNIT DAILY RESIDENTIAL WATER DEMANDS

LAND USE CATEGORY	LAND USE	DWELLING UNIT DENSITY		UNIT DAILY WATER DEMAND		NOTES
		RANGE / VALUE	UNITS	VALUE	UNITS	
LDR-1	Low Density Residential (LDR 0-1)	0-1	DU/AC	126	GPD/AC	Source: Dwelling unit density divisions are based on City of Mesa 2025 General Plan. Unit water demands are based on the City of Mesa 2009 Engineering and Design Standards. LDR 1.0 Average and MDR 4.0 Average are used at locations where the dwelling unit densities are at or near 1 DU/AC and 4 DU/AC, respectively.
LDR-2	LDR 0-1 & LDR 1-2 AVG.	1	DU/AC	204	GPD/AC	
LDR-3	Low Density Residential (LDR-1-2)	1-2	DU/AC	281	GPD/AC	
MDR-1	Medium Density Residential (MDR 2-4)	2-4	DU/AC	834	GPD/AC	
MDR-2	MDR 2-4 & MDR 4-6 AVG	4	DU/AC	1,218	GPD/AC	
MDR-3	Medium Density Residential (MDR 4-6)	4-6	DU/AC	1,602	GPD/AC	
MDR-4	Medium Density Residential (MDR 6-10)	6-10	DU/AC	1,523	GPD/AC	
HDR-1	High Density Residential (HDR 10-15)	10-15	DU/AC	1,936	GPD/AC	
HDR-2	High Density Residential (HDR 15+)	15+	DU/AC	2,355	GPD/AC	
MUR-1	Mixed Use/Residential (MUR) – Residential	30% Max. 15+	DU/AC	2,307	GPD/AC	

UNIT DAILY NON-RESIDENTIAL WATER DEMANDS

LAND USE	UNIT DAILY WATER DEMAND		NOTES
	VALUE	UNITS	
Hotel	300	GPD/UNIT	Based on actual water use data for resorts and discussions with City of Mesa Staff.
Commercial / Retail / Office	1,700	GPD/AC	Source: City of Mesa 2009 Engineering and Design Standards.
Education/Civic/Church	1,500	GPD/AC	
Potable Irrigated Turf	4,400	GPD/AC	

HYDRAULIC MODELING CRITERIA

DESCRIPTION	VALUE	UNITS	NOTES
PEAKING FACTORS			
Peak Day	1.80	x Ave Day Demand	2
Peak Hour	1.70	x Peak Day Demand	3
MODELED FIRE HYDRANT FLOW (MINIMUMS)			
Residential	1,500	gpm	
Commercial (represents flow in backbone waterlines)	4,000	gpm	
HYDRAULICS (ON SITE)			
Minimum Residual Pressure, Peak Hour	40	psi	
Minimum Residual Pressure, Peak Day + Fire Flow	20	psi	2
Maximum Pipe Headloss, Peak Day Demand	10 ft/1000 ft	-	3
Maximum Velocity, Peak Hour Demand	5 (+/-)	ft/s	3
Maximum Velocity, Peak Day + Fire Flow	10	ft/s	3
Minimum Pipe Diameter, Looped System	8	in	2
Hazen-Williams C-value	120	-	3

Notes:
1. City of Scottsdale Design Standards and Policy Manual
2. Per 2009 City of Mesa Engineering Design Standards.
3. Per City of Phoenix Design Standards Manual for Water and Wastewater Systems.

TABLE 2

Modeled Land Use

Project: Eastmark - DU 7
Location: Mesa, Arizona
References: 2009 City of Mesa Engineering Design Standards

EASTMARK - 20/15 CITY OF MESA CRITERIA (RESIDENTIAL WATER DEMAND CALCULATIONS)

	RESIDENTIAL														
	LDR-2	MDR-1	MDR-2	MDR-3	MDR-4	HDR-1	HDR-2	RES UNITS	RES AREA	AVE. DAY RESID. WATER DEMAND	MIXED USE DUs	MUR-1	AVE. DAY RESID. WATER DEMAND	TOTAL DWELLING UNITS	TOTAL AVE. DAY RESID. WATER DEMAND
LOCATION	(ACRES)	(ACRES)	(ACRES)	(ACRES)	(ACRES)	(ACRES)	(ACRES)	(Dus)	(ACRES)	(GPD)	(DUs)	(ACRES)	(GPD)	(DUs)	(GPD)
DEVELOPMENT UNIT 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 7	--	319.0	--	148.4	--	37.3	--	2,129	504.7	575,996	--	--	--	2,129	575,996
DEVELOPMENT UNIT 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	0.0	319.0	0.0	148.4	0.0	37.3	0.0	2,129	504.7	575,996	--	0.0	--	2,129	575,996

EASTMARK - 20/15 CITY OF MESA CRITERIA (NON-RESIDENTIAL WATER DEMAND CALCULATIONS)

	HOTEL				NON-RESIDENTIAL												
	HOTEL GSF	HOTEL AREA	NO. OF ROOMS	AVE. DAY HOTEL WATER DEMAND	FLOOR AREA	TOTAL FLOOR AREA	GROSS AREA[4]	NET AREA	AVE. DAY NON-RESID. WATER DEMAND	EDUCATION	CHURCH	CIVIC	TOTAL AVE. DAY NON-RESID. WATER DEMAND	OTHER[1]	TOTAL AVE. DAY WATER DEMAND	TOTAL AREA	DEVELOPMENT UNIT WATER DEMAND
LOCATION	(SF)	(ACRES)	(KEYS)	(GPD)	(SF)	(SF)	(ACRES)	(ACRES)	(GPD)	(ACRES)	(ACRES)	(ACRES)	(GPD)	(ACRES)	(GPD)	(ACRES)	(GPD/AC)
DEVELOPMENT UNIT 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 6	--	--	--	--	1,324,601	1,324,601	65.7	65.7	93,600	--	--	--	93,600	--	93,600	65.7	N/A [4]
DEVELOPMENT UNIT 7	--	--	--	--	15,000	--	5.5	5.5	9,350	20.0	13.5	2.5	63,350	35.3	639,346	581.5	N/A [5]
DEVELOPMENT UNIT 8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEVELOPMENT UNIT 9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	--	--	--	--	1,339,601	1,324,601	71.2	71.2	102,950	20.0	13.5	2.5	156,950	35.3	732,946	647.2	

UNIT DAILY RESIDENTIAL WATER DEMAND[2]

LAND USE CATEGORY	UNIT DAILY WATER DEMAND	
	Value	Units
LDR-1	126	GPD/AC
LDR-2	204	GPD/AC
LDR-3	281	GPD/AC
MDR-1	834	GPD/AC
MDR-2	1,218	GPD/AC
MDR-3	1,602	GPD/AC
MDR-4	1,523	GPD/AC
HDR-1	1,936	GPD/AC
HDR-2	2,356	GPD/AC
MUR-1	2,307	GPD/AC

UNIT DAILY NON-RESIDENTIAL WATER DEMAND[2]

LAND USE	UNIT DAILY WATER DEMAND	
	Value	Units
Hotel	300	GPD/ROOM
Commercial / Retail / Office (Net Area)	1,700	GPD/AC
Education/Civic/Church	1,500	GPD/AC

Notes:
(1) Open spaces and right of way areas.
(2) See Table 2 - Water System Design Criteria for additional design criteria information.
(3) THE DENSITIES AND USES PRESENTED IN THIS TABLE FOR EACH DEVELOPMENT UNIT ARE SUBJECT TO CHANGE AS PROVIDED FOR IN THE COMMUNITY PLAN.
(4) Design Flows for First Solar Phase 1 per the Final Water System Report for First Solar, 4-18-11, by Beck Consulting Engineers. See Table 3 for Model design flows
(5) See Table 3-DU7 Modeled Land Use for unit water demand for DU7

TABLE 3

DU 7 Modeled Land Use

Project: Eastmark - DU 7
Location: Mesa, Arizona

PRELIMINARY LAND USE AND DWELLING UNIT BREAKDOWN (East of Spine East)

Parcel	DU Sub-area	No. of DUs	Acres	Density	Land Use	GPD/AC/Land Use	Avg Day
1	DU-7C	81	21.0	3.86	MDR-1	834	17,514
2	DU-7C	86	20.8	4.13	MDR-3	1602	33,322
3	DU-7C	109	33.1	3.29	MDR-1	834	27,605
4	DU-7C	84	34.8	2.41	MDR-1	834	29,023
5	DU-7C	68	26.9	2.53	MDR-1	834	22,435
6	DU-7F	78	26.8	2.91	MDR-1	834	22,351
7	DU-7F	104	31.4	3.31	MDR-1	834	26,188
8	DU-7F	116	25.3	4.58	MDR-3	1602	40,531
9	DU-7F	--	7.5	--	CHURCH	1,500	11,250
10	DU-7F	108	25.4	4.25	MDR-3	1602	40,691
11	DU-7F	100	19.1	5.24	MDR-3	1602	30,598
12	DU-7F	93	19.6	4.74	MDR-3	1602	31,399
13	DU-7E	82	20.1	4.08	MDR-3	1602	32,200
14	DU-7E	190	17.3	10.98	HDR-1	1936	33,493
15	DU-7E	84	18.1	4.64	MDR-3	1602	28,996
16	DU-7E	100	25.4	3.94	MDR-1	834	21,184
17	DU-7E	78	23.4	3.33	MDR-1	834	19,516
18	DU-7B	85	28.9	2.94	MDR-1	834	24,103
19	DU-7B	98	25.1	3.90	MDR-1	834	20,933
20	DU-7B	80	20.1	3.98	MDR-1	834	16,763
21	DU-7B	85	22.1	3.85	MDR-1	834	18,431
Sub-Total		**1909**	**492.2**				**548,526**

PRELIMINARY LAND USE AND DWELLING UNIT BREAKDOWN (West of Spine East)

Parcel	DU Sub-area	No. of DUs	Acres	Density	Land Use	GPD/AC/Land Use	Avg Day
22	DU-7D	0	20.0	--	Education	1,500	30,000
23	DU-7D	220	20.0	11.00	HDR-1	1936	38,720
24	DU-7D	0	6.0	--	Church	1,500	9,000
25	DU-7A	0	2.5	--	Civic	1,500	3,750
26	DU-7A	0	5.5	--	Commercial/ Restaurant	1,700	9,350
27	DU7A, DU7D	0	35.3	--	Park/Lake	4,400	155,320
Sub-Total		**220**	**89.3**				**246,140**
DU7 Totals		**2129**	**581.5**				**794,666**

TABLE 4

Water Demand Design Flows

Project: Eastmark - DU 7
Location: Mesa, Arizona
References: 2009 City of Mesa Engineering Design Standards

Proj. Number: 113697.02
Proj. Engineer: Darrell Smith, P.E.

EASTMARK

PARCEL(S) SERVED	DEVELOPMENT UNIT SUB-AREA	DEVELOPMENT UNIT DEMAND AREA (ACRES)	UNIT FLOW (GPD/AC)	HYD. MODEL NODE	AVE. DAY DEMAND (GPD)[2]	AVE. DAY DEMAND (GPM)	AVE DAY DEMAND ASSIGNED TO JUNCTIONS (GPM)	PEAK DAY DEMAND (GPD)	PEAK DAY DEMAND (GPM)	PEAK HOUR DEMAND (GPM)
DU-6	FS Phase 1	65.7	N/A	J-2150	78,396	54	54	141,113	98	167
Total		**65.7**			**78,396**	**54**	**54**	**141,113**	**98**	**167**
DU-7	DU-7A	25.7	N/A[1]	J-1070	90,760	63	63	163,368	113	192
	DU-7B	96.2	N/A[1]	J-2291	80,230	56	56	144,414	101	172
	DU-7C	136.6	N/A[1]	J-1580	129,898	90	90	233,818	162	275
	DU-7D	63.7	N/A[1]	J-1080	155,380	108	108	279,684	194	330
	DU-7E	104.3	N/A[1]	J-2291	135,389	94	94	243,700	169	287
	DU-7F	155.1	N/A[1]	J-1560	203,008	141	141	365,414	254	432
Total		**581.5**			**794,666**	**552**	**552**	**1,430,398**	**993**	**1,688**

(1) Specific to land use Planning. See Table 3 - DU7 Modeled Land Use

(2) Average Day Demand for First Solar Phase 1 per the Final Water System Report for First Solar, 4-18-11, by Beck Consulting Engineers

TABLE 5

Water Demand Design Flows by Junction Node

WOOD/PATEL

TABLE 5 - WATER DEMAND DESIGN FLOWS BY JUNCTION NODE

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

Project: Eastmark - DU 7
Location: Mesa, Arizona

Proj. Number: 113697.02
Proj. Engineer: Darrell Smith, P.E.

EASTMARK

	WATER DEMAND (GPM)		
HYDRAULIC MODEL NODE	AVE. DAY	PEAK DAY	PEAK HOUR
J-1070	63	113	192
J-1080	108	194	330
J-1560	141	254	432
J-1580	90	162	275
J-2150	54	97	165
J-2291	150	270	459
TOTAL	**606**	**1,091**	**1,853**

APPENDIX A

Hydraulic Modeling Results – Served by South CAP Water Treatment Plant

Ave Day Demand - Served by SCAP
Reservoir Report

Label	Elevation (ft)	Flow (Out net) (gpm)	Zone	Hydraulic Grade (ft)
C.O.M. DW SUPPLY FROM NORTH	1,634.0	71	Desert Wells	1,634.0
SCAP DWPS	1,634.0	535	Desert Wells	1,634.0

Ave Day Demand - Served by SCAP
Junction Report

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-100EX	1,406.0	Desert Wells	0	99	1,633.9
J-110EX	1,440.0	Desert Wells	0	84	1,633.9
J-120EX	1,462.0	Desert Wells	0	74	1,634.0
J-135EX	1,460.0	Desert Wells	0	75	1,633.9
J-150EX	1,472.0	Desert Wells	0	70	1,633.7
J-160EX	1,435.0	Desert Wells	0	86	1,633.8
J-170EX	1,430.0	Desert Wells	0	88	1,633.8
J-180EX	1,405.0	Desert Wells	0	99	1,633.8
J-190EX	1,395.0	Desert Wells	0	103	1,633.8
J-200EX	1,385.0	Desert Wells	0	108	1,633.9
J-210EX	1,393.0	Desert Wells	0	104	1,633.9
J-220EX	1,480.0	Desert Wells	0	67	1,633.9
J-230EX	1,475.0	Desert Wells	0	69	1,633.8
J-250EX	1,452.0	Desert Wells	0	79	1,633.7
J-260	1,437.0	Desert Wells	0	85	1,633.6
J-260EX	1,453.0	Desert Wells	0	78	1,633.7
J-280EX	1,460.0	Desert Wells	0	75	1,633.8
J-300EX	1,392.0	Desert Wells	0	105	1,633.9
J-310	1,420.0	Desert Wells	0	92	1,633.6
J-330EX	1,455.0	Desert Wells	0	77	1,633.7
J-350	1,420.0	Desert Wells	0	92	1,633.6
J-360EX	1,405.0	Desert Wells	0	99	1,633.9
J-410	1,415.0	Desert Wells	0	95	1,633.6
J-420	1,415.0	Desert Wells	0	95	1,633.6
J-430	1,420.0	Desert Wells	0	92	1,633.6
J-440	1,415.0	Desert Wells	0	95	1,633.6
J-450	1,393.0	Desert Wells	0	104	1,633.9
J-470	1,440.0	Desert Wells	0	84	1,633.6
J-490	1,430.0	Desert Wells	0	88	1,633.6
J-500	1,435.0	Desert Wells	0	86	1,633.6
J-590EX	1,410.0	Desert Wells	0	97	1,633.9
J-770	1,435.0	Desert Wells	0	86	1,633.6
J-840	1,390.0	Desert Wells	0	106	1,633.9
J-880	1,450.0	Desert Wells	0	79	1,633.6
J-960EX	1,401.0	Desert Wells	0	101	1,633.9
J-970EX	1,397.0	Desert Wells	0	102	1,633.9
J-980	1,393.0	Desert Wells	0	104	1,633.9
J-1000EX	1,455.0	Desert Wells	0	77	1,634.0
J-1010EX	1,485.0	Desert Wells	0	64	1,634.0
J-1020EX	1,425.0	Desert Wells	0	90	1,634.0
J-1030EX	1,480.0	Desert Wells	0	67	1,634.0
J-1040EX	1,438.0	Desert Wells	0	85	1,633.9
J-1050EX	1,445.0	Desert Wells	0	82	1,633.6
J-1070	1,420.0	Desert Wells	63	92	1,633.6
J-1080	1,418.0	Desert Wells	108	93	1,633.6
J-1120EX	1,453.0	Desert Wells	0	78	1,633.7
J-1130EX	1,445.0	Desert Wells	0	82	1,633.9
J-1160EX	1,445.0	Desert Wells	0	82	1,634.0
J-1170EX	1,470.0	Desert Wells	0	71	1,634.0
J-1180EX	1,440.0	Desert Wells	0	84	1,634.0

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-1190EX	1,420.0	Desert Wells	0	93	1,634.0
J-1200EX	1,445.0	Desert Wells	0	82	1,634.0
J-1210EX	1,455.0	Desert Wells	0	77	1,634.0
J-1220EX	1,475.0	Desert Wells	0	69	1,634.0
J-1230EX	1,460.0	Desert Wells	0	75	1,633.8
J-1235EX	1,440.0	Desert Wells	0	84	1,633.6
J-1240EX	1,455.0	Desert Wells	0	77	1,633.7
J-1290EX	1,480.0	Desert Wells	0	67	1,634.0
J-1300EX	1,465.0	Desert Wells	0	73	1,634.0
J-1310EX	1,480.0	Desert Wells	0	67	1,634.0
J-1330EX	1,465.0	Desert Wells	0	73	1,634.0
J-1340EX	1,450.0	Desert Wells	0	80	1,634.0
J-1350EX	1,465.0	Desert Wells	0	73	1,634.0
J-1360EX	1,445.0	Desert Wells	0	82	1,634.0
J-1370EX	1,430.0	Desert Wells	0	88	1,634.0
J-1380EX	1,450.0	Desert Wells	0	80	1,634.0
J-1390EX	1,430.0	Desert Wells	0	88	1,634.0
J-1400EX	1,430.0	Desert Wells	0	88	1,634.0
J-1410	1,450.0	Desert Wells	0	80	1,633.8
J-1410EX	1,420.0	Desert Wells	0	93	1,634.0
J-1420EX	1,461.0	Desert Wells	0	75	1,633.9
J-1430EX	1,455.0	Desert Wells	0	77	1,633.9
J-1440EX	1,478.0	Desert Wells	0	67	1,633.9
J-1530	1,432.0	Desert Wells	0	87	1,633.6
J-1550	1,435.0	Desert Wells	0	86	1,633.6
J-1560	1,435.0	Desert Wells	141	86	1,633.6
J-1570	1,433.0	Desert Wells	0	87	1,633.6
J-1580	1,437.0	Desert Wells	90	85	1,633.6
J-1680EX	1,400.0	Desert Wells	0	101	1,633.9
J-1990EX	1,447.0	Desert Wells	0	81	1,633.6
J-2000EX	1,442.0	Desert Wells	0	83	1,633.6
J-2120EX	1,453.0	Desert Wells	0	78	1,633.9
J-2140EX	1,446.0	Desert Wells	0	81	1,633.9
J-2150	1,448.0	Desert Wells	54	80	1,633.9
J-2250	1,458.0	Desert Wells	0	76	1,633.9
J-2260	1,459.0	Desert Wells	0	76	1,633.9
J-2280	1,453.0	Desert Wells	0	78	1,633.9
J-2291	1,432.0	Desert Wells	150	87	1,633.5

Ave Day Demand - Served by SCAP

Pipe Report

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-160EX	16.0	2,722.00	120.0	-57	0.09	False	0.0000
P-170EX	16.0	5,366.00	120.0	-57	0.09	False	0.0000
P-180EX	16.0	5,396.00	120.0	-57	0.09	False	0.0000
P-190EX	16.0	5,728.00	120.0	-57	0.09	False	0.0000
P-200EX	16.0	231.00	120.0	-57	0.09	False	0.0000
P-210EX	16.0	1,388.00	120.0	-57	0.09	False	0.0000
P-220EX	16.0	2,909.00	120.0	175	0.28	False	0.0000
P-240EX	16.0	1,387.00	120.0	-194	0.31	False	0.0000
P-250EX	16.0	2,611.00	120.0	207	0.33	False	0.0000
P-310	30.0	4,937.00	120.0	0	0	True	0.0000
P-340EX	16.0	5,775.00	120.0	-57	0.09	False	0.0000
P-410EX	16.0	5,368.00	120.0	-57	0.09	False	0.0000
P-680	12.0	1,044.00	120.0	25	0.07	False	0.0000
P-690	12.0	1,092.00	120.0	25	0.07	False	0.0000
P-710	16.0	778.00	130.0	-25	0.04	False	0.0000
P-720	12.0	1,169.00	120.0	-25	0.07	False	0.0000
P-760	24.0	1,410.00	120.0	-25	0.02	False	0.0000
P-880	16.0	1,742.00	120.0	-49	0.08	False	0.0000
P-1060EX	16.0	1,328.00	120.0	-57	0.09	False	0.0000
P-1070EX	16.0	1,243.00	120.0	-57	0.09	False	0.0000
P-1430	24.0	1,075.00	120.0	-224	0.16	False	0.0000
P-1440	24.0	1,254.00	120.0	-224	0.16	False	0.0000
P-1630EX	16.0	560.00	120.0	-57	0.09	False	0.0000
P-1640EX	16.0	2,569.00	120.0	-57	0.09	False	0.0000
P-1710	24.0	992.00	120.0	-344	0.24	False	0.0000
P-1720	24.0	2,552.00	120.0	-344	0.24	False	0.0000
P-1940EX	16.0	1,976.00	120.0	-57	0.09	False	0.0000
P-1950EX	16.0	680.00	120.0	-57	0.09	False	0.0000
P-1970EX	16.0	927.00	120.0	-57	0.09	False	0.0000
P-1980EX	16.0	1,106.00	120.0	-57	0.09	False	0.0000
P-2000EX	16.0	2,710.00	120.0	-57	0.09	False	0.0000
P-2040EX	16.0	10,635.00	120.0	-16	0.03	False	0.0000
P-2055EX	16.0	10,453.00	120.0	7	0.01	False	0.0000
P-2070EX	24.0	5,329.00	120.0	-47	0.03	False	0.0000
P-2120	16.0	1,816.00	120.0	93	0.15	False	0.0000
P-2140	20.0	1,207.00	120.0	-11	0.01	False	0.0000
P-2150	20.0	317.00	120.0	-74	0.08	False	0.0000
P-2170	20.0	619.00	120.0	199	0.2	False	0.0000
P-2180	20.0	1,514.00	120.0	91	0.09	False	0.0000
P-2340EX	16.0	2,281.00	120.0	-57	0.09	False	0.0000
P-2500EX	24.0	2,750.00	120.0	49	0.03	False	0.0000
P-2510EX	24.0	2,726.00	120.0	47	0.03	False	0.0000
P-2540EX	12.0	2,624.00	120.0	-6	0.02	False	0.0000
P-2570EX	16.0	2,640.00	120.0	0	0	True	0.0000
P-2655EX	16.0	2,870.00	120.0	-57	0.09	False	0.0000
P-2660EX	24.0	2,797.00	120.0	71	0.05	False	0.0000
P-2665EX	16.0	2,716.00	120.0	-57	0.09	False	0.0000
P-2690EX	16.0	2,914.00	120.0	-172	0.27	False	0.0000

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-2700EX	16.0	3,115.00	120.0	35	0.06	False	0.0000
P-2710EX	16.0	1,823.00	120.0	-57	0.09	False	0.0000
P-2720EX	12.0	3,042.00	120.0	-92	0.26	False	0.0000
P-2860EX	24.0	761.00	120.0	71	0.05	False	0.0000
P-2880EX	12.0	383.00	120.0	0	0	False	0.0000
P-2890EX	8.0	3,148.00	120.0	-4	0.02	False	0.0000
P-2900	24.0	1,423.00	120.0	63	0.04	False	0.0000
P-2910EX	24.0	497.00	120.0	67	0.05	False	0.0000
P-2950	12.0	1,089.00	120.0	2	0.01	False	0.0000
P-2970EX	12.0	1,119.00	120.0	3	0.01	False	0.0000
P-2990EX	8.0	2,811.00	120.0	-3	0.02	False	0.0000
P-3010EX	12.0	471.00	120.0	4	0.01	False	0.0000
P-3020EX	12.0	1,167.00	120.0	1	0	False	0.0000
P-3030EX	12.0	378.00	120.0	0	0	False	0.0000
P-3040EX	8.0	3,081.00	120.0	-3	0.02	False	0.0000
P-3060	12.0	595.00	120.0	0	0	False	0.0000
P-3070EX	8.0	2,922.00	120.0	-2	0.01	False	0.0000
P-3080EX	12.0	1,397.00	120.0	-6	0.02	False	0.0000
P-3090EX	12.0	1,109.00	120.0	-5	0.01	False	0.0000
P-3100EX	12.0	695.00	120.0	1	0	False	0.0000
P-3110EX	12.0	664.00	120.0	0	0	False	0.0000
P-3120EX	8.0	1,851.00	120.0	-1	0.01	False	0.0000
P-3130	12.0	1,155.00	120.0	2	0	False	0.0000
P-3140EX	16.0	1,783.00	120.0	2	0	False	0.0000
P-3150EX	16.0	958.00	120.0	0	0	False	0.0000
P-3160EX	8.0	3,801.00	120.0	-2	0.01	False	0.0000
P-3170EX	8.0	2,838.00	120.0	-4	0.02	False	0.0000
P-3180EX	8.0	736.00	120.0	1	0.01	False	0.0000
P-3190EX	30.0	4,441.00	120.0	0	0	True	0.0000
P-3200	30.0	814.00	120.0	0	0	True	0.0000
P-3240EX	16.0	1,954.00	120.0	288	0.46	False	0.0001
P-3250EX	12.0	844.00	120.0	31	0.09	False	0.0000
P-3260EX	16.0	1,108.00	120.0	175	0.28	False	0.0000
P-3270EX	16.0	1,509.00	120.0	156	0.25	False	0.0000
P-3280EX	12.0	2,890.00	120.0	-20	0.06	False	0.0000
P-3290EX	12.0	2,432.00	120.0	-51	0.14	False	0.0000
P-3640	12.0	1,014.00	120.0	102	0.29	False	0.0000
P-3660	16.0	1,562.00	120.0	-93	0.15	False	0.0000
P-3670	16.0	941.00	120.0	-93	0.15	False	0.0000
P-3690	12.0	1,073.00	120.0	-120	0.34	False	0.0000
P-3700	12.0	828.00	120.0	-21	0.06	False	0.0000
P-3720	12.0	399.00	120.0	-70	0.2	False	0.0000
P-3730	12.0	2,378.00	120.0	-44	0.13	False	0.0000
P-3760	12.0	1,054.00	120.0	-25	0.07	False	0.0000
P-3930EX	16.0	751.00	120.0	-57	0.09	False	0.0000
P-3940EX	16.0	509.00	120.0	-57	0.09	False	0.0000
P-3970EX	16.0	1,445.00	120.0	57	0.09	False	0.0000
P-4720EX	16.0	1,216.00	120.0	116	0.19	False	0.0000
P-4730EX	16.0	456.00	120.0	116	0.19	False	0.0000
P-4750EX	16.0	715.00	120.0	116	0.19	False	0.0000
P-4760EX	16.0	774.00	120.0	1	0	False	0.0000
P-4770	12.0	1,049.00	120.0	-115	0.33	False	0.0001
P-5700EX	16.0	1,176.00	120.0	237	0.38	False	0.0001
P-5710EX	16.0	1,171.00	120.0	237	0.38	False	0.0001

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-5770	16.0	353.00	120.0	288	0.46	False	0.0001
P-5780	16.0	684.00	120.0	288	0.46	False	0.0001
P-5950	12.0	142.00	120.0	-83	0.23	False	0.0000
P-5960	12.0	1,130.00	120.0	-21	0.06	False	0.0000
P-5980	12.0	2,209.00	120.0	-61	0.17	False	0.0000
P-5990	12.0	124.00	120.0	137	0.39	False	0.0001
P-6000	12.0	2,203.00	120.0	75	0.21	False	0.0000
P-6010	12.0	1,163.00	120.0	-61	0.17	False	0.0000
P-6059	12.0	1,714.00	120.0	-48	0.14	False	0.0000
P-COMWTREX	36.0	10.00	120.0	71	0.02	False	0.0000
P-SCAP	36.0	1,752.00	120.0	-535	0.17	False	0.0000

Peak Day Demand - Served by SCAP
Reservoir Report

Label	Elevation (ft)	Flow (Out net) (gpm)	Zone	Hydraulic Grade (ft)
C.O.M. DW SUPPLY FROM NORTH	1,634.0	127	Desert Wells	1,634.0
SCAP DWPS	1,634.0	964	Desert Wells	1,634.0

Peak Day Demand - Served by SCAP
Junction Report

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-100EX	1,406.0	Desert Wells	0	99	1633.7
J-110EX	1,440.0	Desert Wells	0	84	1633.8
J-120EX	1,462.0	Desert Wells	0	74	1634
J-135EX	1,460.0	Desert Wells	0	75	1633.8
J-150EX	1,472.0	Desert Wells	0	70	1633.2
J-160EX	1,435.0	Desert Wells	0	86	1633.4
J-170EX	1,430.0	Desert Wells	0	88	1633.4
J-180EX	1,405.0	Desert Wells	0	99	1633.4
J-190EX	1,395.0	Desert Wells	0	103	1633.5
J-200EX	1,385.0	Desert Wells	0	108	1633.6
J-210EX	1,393.0	Desert Wells	0	104	1633.7
J-220EX	1,480.0	Desert Wells	0	67	1633.7
J-230EX	1,475.0	Desert Wells	0	69	1633.5
J-250EX	1,452.0	Desert Wells	0	78	1633
J-260	1,437.0	Desert Wells	0	85	1632.8
J-260EX	1,453.0	Desert Wells	0	78	1633.1
J-280EX	1,460.0	Desert Wells	0	75	1633.3
J-300EX	1,392.0	Desert Wells	0	105	1633.6
J-310	1,420.0	Desert Wells	0	92	1632.8
J-330EX	1,455.0	Desert Wells	0	77	1633.2
J-350	1,420.0	Desert Wells	0	92	1632.8
J-360EX	1,405.0	Desert Wells	0	99	1633.7
J-410	1,415.0	Desert Wells	0	94	1632.8
J-420	1,415.0	Desert Wells	0	94	1632.8
J-430	1,420.0	Desert Wells	0	92	1632.8
J-440	1,415.0	Desert Wells	0	94	1632.8
J-450	1,393.0	Desert Wells	0	104	1633.7
J-470	1,440.0	Desert Wells	0	83	1632.8
J-490	1,430.0	Desert Wells	0	88	1632.8
J-500	1,435.0	Desert Wells	0	86	1632.8
J-590EX	1,410.0	Desert Wells	0	97	1633.7
J-770	1,435.0	Desert Wells	0	86	1632.8
J-840	1,390.0	Desert Wells	0	105	1633.6
J-880	1,450.0	Desert Wells	0	79	1632.9
J-960EX	1,401.0	Desert Wells	0	101	1633.7
J-970EX	1,397.0	Desert Wells	0	102	1633.7
J-980	1,393.0	Desert Wells	0	104	1633.7
J-1000EX	1,455.0	Desert Wells	0	77	1634
J-1010EX	1,485.0	Desert Wells	0	64	1634
J-1020EX	1,425.0	Desert Wells	0	90	1634
J-1030EX	1,480.0	Desert Wells	0	67	1634
J-1040EX	1,438.0	Desert Wells	0	85	1633.8
J-1050EX	1,445.0	Desert Wells	0	81	1632.9
J-1070	1,420.0	Desert Wells	113	92	1632.8
J-1080	1,418.0	Desert Wells	194	93	1632.8
J-1120EX	1,453.0	Desert Wells	0	78	1633.2
J-1130EX	1,445.0	Desert Wells	0	82	1633.8
J-1160EX	1,445.0	Desert Wells	0	82	1634
J-1170EX	1,470.0	Desert Wells	0	71	1634

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-1180EX	1,440.0	Desert Wells	0	84	1634
J-1190EX	1,420.0	Desert Wells	0	93	1634
J-1200EX	1,445.0	Desert Wells	0	82	1634
J-1210EX	1,455.0	Desert Wells	0	77	1634
J-1220EX	1,475.0	Desert Wells	0	69	1634
J-1230EX	1,460.0	Desert Wells	0	75	1633.3
J-1235EX	1,440.0	Desert Wells	0	83	1632.9
J-1240EX	1,455.0	Desert Wells	0	77	1633.2
J-1290EX	1,480.0	Desert Wells	0	67	1634
J-1300EX	1,465.0	Desert Wells	0	73	1634
J-1310EX	1,480.0	Desert Wells	0	67	1634
J-1330EX	1,465.0	Desert Wells	0	73	1634
J-1340EX	1,450.0	Desert Wells	0	80	1634
J-1350EX	1,465.0	Desert Wells	0	73	1634
J-1360EX	1,445.0	Desert Wells	0	82	1634
J-1370EX	1,430.0	Desert Wells	0	88	1634
J-1380EX	1,450.0	Desert Wells	0	80	1634
J-1390EX	1,430.0	Desert Wells	0	88	1634
J-1400EX	1,430.0	Desert Wells	0	88	1634
J-1410	1,450.0	Desert Wells	0	79	1633.5
J-1410EX	1,420.0	Desert Wells	0	93	1634
J-1420EX	1,461.0	Desert Wells	0	75	1633.6
J-1430EX	1,455.0	Desert Wells	0	77	1633.6
J-1440EX	1,478.0	Desert Wells	0	67	1633.6
J-1530	1,432.0	Desert Wells	0	87	1632.7
J-1550	1,435.0	Desert Wells	0	86	1632.8
J-1560	1,435.0	Desert Wells	254	86	1632.7
J-1570	1,433.0	Desert Wells	0	86	1632.7
J-1580	1,437.0	Desert Wells	162	85	1632.7
J-1680EX	1,400.0	Desert Wells	0	101	1633.7
J-1990EX	1,447.0	Desert Wells	0	80	1632.9
J-2000EX	1,442.0	Desert Wells	0	83	1632.9
J-2120EX	1,453.0	Desert Wells	0	78	1633.8
J-2140EX	1,446.0	Desert Wells	0	81	1633.8
J-2150	1,448.0	Desert Wells	97	80	1633.6
J-2250	1,458.0	Desert Wells	0	76	1633.6
J-2260	1,459.0	Desert Wells	0	76	1633.7
J-2280	1,453.0	Desert Wells	0	78	1633.8
J-2291	1,432.0	Desert Wells	270	87	1632.6

Peak Day Demand - Served by SCAP

Pipe Report

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-160EX	16.0	2,722.00	120.0	-103	0.16	False	0.0000
P-170EX	16.0	5,366.00	120.0	-103	0.16	False	0.0000
P-180EX	16.0	5,396.00	120.0	-103	0.16	False	0.0000
P-190EX	16.0	5,728.00	120.0	-103	0.16	False	0.0000
P-200EX	16.0	231.00	120.0	-103	0.16	False	0.0000
P-210EX	16.0	1,388.00	120.0	-103	0.16	False	0.0000
P-220EX	16.0	2,909.00	120.0	316	0.5	False	0.0001
P-240EX	16.0	1,387.00	120.0	-349	0.56	False	0.0001
P-250EX	16.0	2,611.00	120.0	372	0.59	False	0.0001
P-310	30.0	4,937.00	120.0	0	0	True	0.0000
P-340EX	16.0	5,775.00	120.0	-103	0.16	False	0.0000
P-410EX	16.0	5,368.00	120.0	-103	0.16	False	0.0000
P-680	12.0	1,044.00	120.0	45	0.13	False	0.0000
P-690	12.0	1,092.00	120.0	45	0.13	False	0.0000
P-710	16.0	778.00	130.0	-45	0.07	False	0.0000
P-720	12.0	1,169.00	120.0	-45	0.13	False	0.0000
P-760	24.0	1,410.00	120.0	-45	0.03	False	0.0000
P-880	16.0	1,742.00	120.0	-88	0.14	False	0.0000
P-1060EX	16.0	1,328.00	120.0	-103	0.16	False	0.0000
P-1070EX	16.0	1,243.00	120.0	-103	0.16	False	0.0000
P-1430	24.0	1,075.00	120.0	-403	0.29	False	0.0000
P-1440	24.0	1,254.00	120.0	-403	0.29	False	0.0000
P-1630EX	16.0	560.00	120.0	-103	0.16	False	0.0000
P-1640EX	16.0	2,569.00	120.0	-103	0.16	False	0.0000
P-1710	24.0	992.00	120.0	-618	0.44	False	0.0000
P-1720	24.0	2,552.00	120.0	-618	0.44	False	0.0000
P-1940EX	16.0	1,976.00	120.0	-103	0.16	False	0.0000
P-1950EX	16.0	680.00	120.0	-103	0.16	False	0.0000
P-1970EX	16.0	927.00	120.0	-103	0.16	False	0.0000
P-1980EX	16.0	1,106.00	120.0	-103	0.16	False	0.0000
P-2000EX	16.0	2,710.00	120.0	-103	0.16	False	0.0000
P-2040EX	16.0	10,635.00	120.0	-30	0.05	False	0.0000
P-2055EX	16.0	10,453.00	120.0	13	0.02	False	0.0000
P-2070EX	24.0	5,329.00	120.0	-84	0.06	False	0.0000
P-2120	16.0	1,816.00	120.0	167	0.27	False	0.0000
P-2140	20.0	1,207.00	120.0	-19	0.02	False	0.0000
P-2150	20.0	317.00	120.0	-133	0.14	False	0.0000
P-2170	20.0	619.00	120.0	358	0.37	False	0.0000
P-2180	20.0	1,514.00	120.0	163	0.17	False	0.0000
P-2340EX	16.0	2,281.00	120.0	-103	0.16	False	0.0000
P-2500EX	24.0	2,750.00	120.0	88	0.06	False	0.0000
P-2510EX	24.0	2,726.00	120.0	85	0.06	False	0.0000
P-2540EX	12.0	2,624.00	120.0	-10	0.03	False	0.0000
P-2570EX	16.0	2,640.00	120.0	0	0	True	0.0000
P-2655EX	16.0	2,870.00	120.0	-103	0.16	False	0.0000
P-2660EX	24.0	2,797.00	120.0	127	0.09	False	0.0000
P-2665EX	16.0	2,716.00	120.0	-103	0.16	False	0.0000
P-2690EX	16.0	2,914.00	120.0	-309	0.49	False	0.0001

Label	Diameter (In)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-2700EX	16.0	3,115.00	120.0	63	0.1	False	0.0000
P-2710EX	16.0	1,823.00	120.0	-103	0.16	False	0.0000
P-2720EX	12.0	3,042.00	120.0	-166	0.47	False	0.0001
P-2860EX	24.0	761.00	120.0	127	0.09	False	0.0000
P-2880EX	12.0	383.00	120.0	0	0	False	0.0000
P-2890EX	8.0	3,148.00	120.0	-7	0.04	False	0.0000
P-2900	24.0	1,423.00	120.0	114	0.08	False	0.0000
P-2910EX	24.0	497.00	120.0	121	0.09	False	0.0000
P-2950	12.0	1,089.00	120.0	4	0.01	False	0.0000
P-2970EX	12.0	1,119.00	120.0	6	0.02	False	0.0000
P-2990EX	8.0	2,811.00	120.0	-5	0.03	False	0.0000
P-3010EX	12.0	471.00	120.0	7	0.02	False	0.0000
P-3020EX	12.0	1,167.00	120.0	1	0	False	0.0000
P-3030EX	12.0	378.00	120.0	0	0	False	0.0000
P-3040EX	8.0	3,081.00	120.0	-5	0.03	False	0.0000
P-3060	12.0	595.00	120.0	0	0	False	0.0000
P-3070EX	8.0	2,922.00	120.0	-3	0.02	False	0.0000
P-3080EX	12.0	1,397.00	120.0	-10	0.03	False	0.0000
P-3090EX	12.0	1,109.00	120.0	-8	0.02	False	0.0000
P-3100EX	12.0	695.00	120.0	2	0.01	False	0.0000
P-3110EX	12.0	664.00	120.0	0	0	False	0.0000
P-3120EX	8.0	1,851.00	120.0	-2	0.01	False	0.0000
P-3130	12.0	1,155.00	120.0	3	0.01	False	0.0000
P-3140EX	16.0	1,783.00	120.0	3	0	False	0.0000
P-3150EX	16.0	958.00	120.0	0	0	False	0.0000
P-3160EX	8.0	3,801.00	120.0	-3	0.02	False	0.0000
P-3170EX	8.0	2,838.00	120.0	-6	0.04	False	0.0000
P-3180EX	8.0	736.00	120.0	2	0.01	False	0.0000
P-3190EX	30.0	4,441.00	120.0	0	0	True	0.0000
P-3200	30.0	814.00	120.0	0	0	True	0.0000
P-3240EX	16.0	1,954.00	120.0	518	0.83	False	0.0002
P-3250EX	12.0	844.00	120.0	56	0.16	False	0.0000
P-3260EX	16.0	1,108.00	120.0	316	0.5	False	0.0001
P-3270EX	16.0	1,509.00	120.0	280	0.45	False	0.0001
P-3280EX	12.0	2,890.00	120.0	-36	0.1	False	0.0000
P-3290EX	12.0	2,432.00	120.0	-92	0.26	False	0.0000
P-3640	12.0	1,014.00	120.0	183	0.52	False	0.0001
P-3660	16.0	1,562.00	120.0	-167	0.27	False	0.0000
P-3670	16.0	941.00	120.0	-167	0.27	False	0.0000
P-3690	12.0	1,073.00	120.0	-215	0.61	False	0.0001
P-3700	12.0	828.00	120.0	-38	0.11	False	0.0000
P-3720	12.0	399.00	120.0	-125	0.36	False	0.0001
P-3730	12.0	2,378.00	120.0	-80	0.23	False	0.0000
P-3760	12.0	1,054.00	120.0	-46	0.13	False	0.0000
P-3930EX	16.0	751.00	120.0	-103	0.16	False	0.0000
P-3940EX	16.0	509.00	120.0	-103	0.16	False	0.0000
P-3970EX	16.0	1,445.00	120.0	103	0.16	False	0.0000
P-4720EX	16.0	1,216.00	120.0	209	0.33	False	0.0000
P-4730EX	16.0	456.00	120.0	209	0.33	False	0.0000
P-4750EX	16.0	715.00	120.0	209	0.33	False	0.0000
P-4760EX	16.0	774.00	120.0	1	0	False	0.0000
P-4770	12.0	1,049.00	120.0	-208	0.59	False	0.0002
P-5700EX	16.0	1,176.00	120.0	426	0.68	False	0.0001
P-5710EX	16.0	1,171.00	120.0	426	0.68	False	0.0001

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-5770	16.0	353.00	120.0	518	0.83	False	0.0002
P-5780	16.0	684.00	120.0	518	0.83	False	0.0002
P-5950	12.0	142.00	120.0	-149	0.42	False	0.0001
P-5960	12.0	1,130.00	120.0	-38	0.11	False	0.0000
P-5980	12.0	2,209.00	120.0	-110	0.31	False	0.0000
P-5990	12.0	124.00	120.0	246	0.7	False	0.0002
P-6000	12.0	2,203.00	120.0	135	0.38	False	0.0001
P-6010	12.0	1,163.00	120.0	-110	0.31	False	0.0000
P-6059	12.0	1,714.00	120.0	-87	0.25	False	0.0000
P-COMWTREX	36.0	10.00	120.0	127	0.04	False	0.0000
P-SCAP	36.0	1,752.00	120.0	-964	0.3	False	0.0000

Peak Hour Demand - Served by SCAP
Reservoir Report

Label	Elevation (ft)	Flow (Out net) (gpm)	Zone	Hydraulic Grade (ft)
C.O.M. DW SUPPLY FROM NORTH	1,634.0	216	Desert Wells	1,634.0
SCAP DWPS	1,634.0	1,638	Desert Wells	1,634.0

Peak Hour Demand - Served by SCAP

Junction Report

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-100EX	1,406.0	Desert Wells	0	98	1633.3
J-110EX	1,440.0	Desert Wells	0	84	1633.4
J-120EX	1,462.0	Desert Wells	0	74	1633.9
J-135EX	1,460.0	Desert Wells	0	75	1633.5
J-150EX	1,472.0	Desert Wells	0	69	1631.9
J-160EX	1,435.0	Desert Wells	0	85	1632.3
J-170EX	1,430.0	Desert Wells	0	88	1632.4
J-180EX	1,405.0	Desert Wells	0	98	1632.5
J-190EX	1,395.0	Desert Wells	0	103	1632.7
J-200EX	1,385.0	Desert Wells	0	107	1632.8
J-210EX	1,393.0	Desert Wells	0	104	1633.1
J-220EX	1,480.0	Desert Wells	0	66	1633.3
J-230EX	1,475.0	Desert Wells	0	68	1632.7
J-250EX	1,452.0	Desert Wells	0	78	1631.3
J-260	1,437.0	Desert Wells	0	84	1630.9
J-260EX	1,453.0	Desert Wells	0	77	1631.7
J-280EX	1,460.0	Desert Wells	0	74	1632.1
J-300EX	1,392.0	Desert Wells	0	104	1633
J-310	1,420.0	Desert Wells	0	91	1630.7
J-330EX	1,455.0	Desert Wells	0	77	1632
J-350	1,420.0	Desert Wells	0	91	1630.8
J-360EX	1,405.0	Desert Wells	0	99	1633.2
J-410	1,415.0	Desert Wells	0	93	1630.8
J-420	1,415.0	Desert Wells	0	93	1630.8
J-430	1,420.0	Desert Wells	0	91	1630.7
J-440	1,415.0	Desert Wells	0	93	1630.7
J-450	1,393.0	Desert Wells	0	104	1633.1
J-470	1,440.0	Desert Wells	0	83	1630.9
J-490	1,430.0	Desert Wells	0	87	1630.7
J-500	1,435.0	Desert Wells	0	85	1630.7
J-590EX	1,410.0	Desert Wells	0	97	1633.3
J-770	1,435.0	Desert Wells	0	85	1630.8
J-840	1,390.0	Desert Wells	0	105	1633
J-880	1,450.0	Desert Wells	0	78	1631
J-960EX	1,401.0	Desert Wells	0	100	1633.3
J-970EX	1,397.0	Desert Wells	0	102	1633.2
J-980	1,393.0	Desert Wells	0	104	1633.1
J-1000EX	1,455.0	Desert Wells	0	77	1634
J-1010EX	1,485.0	Desert Wells	0	64	1634
J-1020EX	1,425.0	Desert Wells	0	90	1634
J-1030EX	1,480.0	Desert Wells	0	67	1634
J-1040EX	1,438.0	Desert Wells	0	85	1633.4
J-1050EX	1,445.0	Desert Wells	0	81	1631.1
J-1070	1,420.0	Desert Wells	193	91	1630.7
J-1080	1,418.0	Desert Wells	330	92	1630.7
J-1120EX	1,453.0	Desert Wells	0	77	1631.9
J-1130EX	1,445.0	Desert Wells	0	82	1633.5
J-1160EX	1,445.0	Desert Wells	0	82	1634
J-1170EX	1,470.0	Desert Wells	0	71	1634
J-1180EX	1,440.0	Desert Wells	0	84	1634

Label	Elevation (ft)	Zone	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
J-1190EX	1,420.0	Desert Wells	0	93	1634
J-1200EX	1,445.0	Desert Wells	0	82	1634
J-1210EX	1,455.0	Desert Wells	0	77	1634
J-1220EX	1,475.0	Desert Wells	0	69	1634
J-1230EX	1,460.0	Desert Wells	0	74	1632
J-1235EX	1,440.0	Desert Wells	0	83	1631
J-1240EX	1,455.0	Desert Wells	0	77	1631.9
J-1290EX	1,480.0	Desert Wells	0	67	1634
J-1300EX	1,465.0	Desert Wells	0	73	1634
J-1310EX	1,480.0	Desert Wells	0	67	1634
J-1330EX	1,465.0	Desert Wells	0	73	1634
J-1340EX	1,450.0	Desert Wells	0	80	1634
J-1350EX	1,465.0	Desert Wells	0	73	1634
J-1360EX	1,445.0	Desert Wells	0	82	1634
J-1370EX	1,430.0	Desert Wells	0	88	1634
J-1380EX	1,450.0	Desert Wells	0	80	1634
J-1390EX	1,430.0	Desert Wells	0	88	1634
J-1400EX	1,430.0	Desert Wells	0	88	1634
J-1410	1,450.0	Desert Wells	0	79	1632.6
J-1410EX	1,420.0	Desert Wells	0	93	1634
J-1420EX	1,461.0	Desert Wells	0	74	1633
J-1430EX	1,455.0	Desert Wells	0	77	1633
J-1440EX	1,478.0	Desert Wells	0	67	1633
J-1530	1,432.0	Desert Wells	0	86	1630.5
J-1550	1,435.0	Desert Wells	0	85	1630.8
J-1560	1,435.0	Desert Wells	431	85	1630.5
J-1570	1,433.0	Desert Wells	0	85	1630.6
J-1580	1,437.0	Desert Wells	275	84	1630.6
J-1680EX	1,400.0	Desert Wells	0	101	1633.2
J-1990EX	1,447.0	Desert Wells	0	80	1631.2
J-2000EX	1,442.0	Desert Wells	0	82	1631
J-2120EX	1,453.0	Desert Wells	0	78	1633.6
J-2140EX	1,446.0	Desert Wells	0	81	1633.5
J-2150	1,448.0	Desert Wells	165	80	1633.1
J-2250	1,458.0	Desert Wells	0	76	1633
J-2260	1,459.0	Desert Wells	0	75	1633.3
J-2280	1,453.0	Desert Wells	0	78	1633.5
J-2291	1,432.0	Desert Wells	459	86	1630.3

Peak Hour Demand - Served by SCAP

Pipe Report

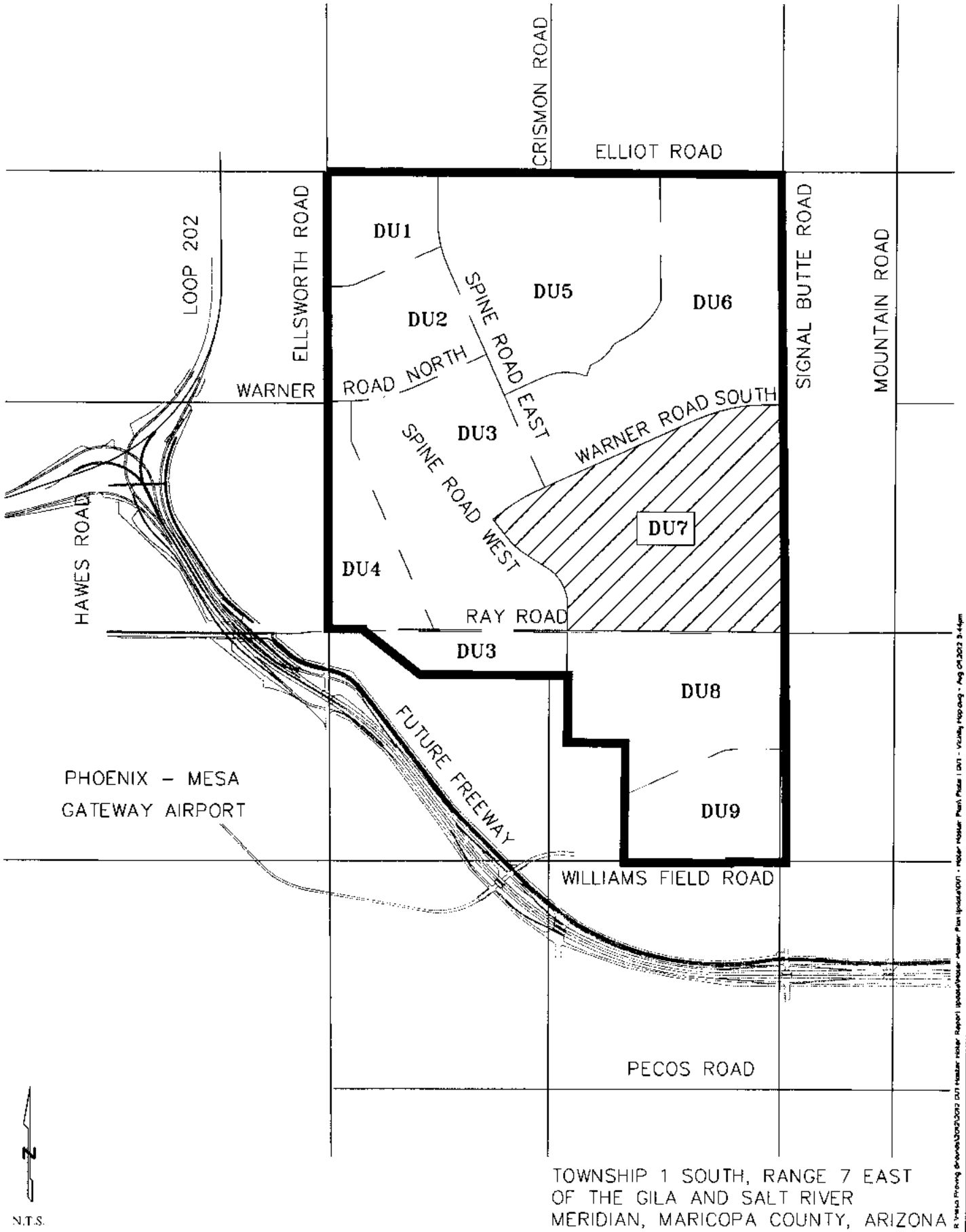
Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-160EX	16.0	2,722.00	120.0	-176	0.28	False	0.0000
P-170EX	16.0	5,366.00	120.0	-176	0.28	False	0.0000
P-180EX	16.0	5,396.00	120.0	-176	0.28	False	0.0000
P-190EX	16.0	5,728.00	120.0	-176	0.28	False	0.0000
P-200EX	16.0	231.00	120.0	-176	0.28	False	0.0000
P-210EX	16.0	1,388.00	120.0	-176	0.28	False	0.0000
P-220EX	16.0	2,909.00	120.0	537	0.86	False	0.0002
P-240EX	16.0	1,387.00	120.0	-593	0.95	False	0.0003
P-250EX	16.0	2,611.00	120.0	633	1.01	False	0.0003
P-310	30.0	4,937.00	120.0	0	0	True	0.0000
P-340EX	16.0	5,775.00	120.0	-176	0.28	False	0.0000
P-410EX	16.0	5,368.00	120.0	-176	0.28	False	0.0000
P-680	12.0	1,044.00	120.0	77	0.22	False	0.0000
P-690	12.0	1,092.00	120.0	77	0.22	False	0.0000
P-710	16.0	778.00	130.0	-77	0.12	False	0.0000
P-720	12.0	1,169.00	120.0	-77	0.22	False	0.0000
P-760	24.0	1,410.00	120.0	-77	0.05	False	0.0000
P-880	16.0	1,742.00	120.0	-149	0.24	False	0.0000
P-1060EX	16.0	1,328.00	120.0	-176	0.28	False	0.0000
P-1070EX	16.0	1,243.00	120.0	-176	0.28	False	0.0000
P-1430	24.0	1,075.00	120.0	-685	0.49	False	0.0000
P-1440	24.0	1,254.00	120.0	-685	0.49	False	0.0000
P-1630EX	16.0	560.00	120.0	-176	0.28	False	0.0000
P-1640EX	16.0	2,569.00	120.0	-176	0.28	False	0.0000
P-1710	24.0	992.00	120.0	-1051	0.75	False	0.0001
P-1720	24.0	2,552.00	120.0	-1051	0.75	False	0.0001
P-1940EX	16.0	1,976.00	120.0	-176	0.28	False	0.0000
P-1950EX	16.0	680.00	120.0	-176	0.28	False	0.0000
P-1970EX	16.0	927.00	120.0	-176	0.28	False	0.0000
P-1980EX	16.0	1,106.00	120.0	-176	0.28	False	0.0000
P-2000EX	16.0	2,710.00	120.0	-176	0.28	False	0.0000
P-2040EX	16.0	10,635.00	120.0	-50	0.08	False	0.0000
P-2055EX	16.0	10,453.00	120.0	23	0.04	False	0.0000
P-2070EX	24.0	5,329.00	120.0	-143	0.1	False	0.0000
P-2120	16.0	1,816.00	120.0	284	0.45	False	0.0001
P-2140	20.0	1,207.00	120.0	-33	0.03	False	0.0000
P-2150	20.0	317.00	120.0	-226	0.23	False	0.0000
P-2170	20.0	619.00	120.0	608	0.62	False	0.0001
P-2180	20.0	1,514.00	120.0	278	0.28	False	0.0000
P-2340EX	16.0	2,281.00	120.0	-176	0.28	False	0.0000
P-2500EX	24.0	2,750.00	120.0	150	0.11	False	0.0000
P-2510EX	24.0	2,726.00	120.0	144	0.1	False	0.0000
P-2540EX	12.0	2,624.00	120.0	-18	0.05	False	0.0000
P-2570EX	16.0	2,640.00	120.0	0	0	True	0.0000
P-2655EX	16.0	2,870.00	120.0	-176	0.28	False	0.0000
P-2660EX	24.0	2,797.00	120.0	216	0.15	False	0.0000
P-2665EX	16.0	2,716.00	120.0	-176	0.28	False	0.0000
P-2690EX	16.0	2,914.00	120.0	-526	0.84	False	0.0002

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-2700EX	16.0	3,115.00	120.0	107	0.17	False	0.0000
P-2710EX	16.0	1,823.00	120.0	-176	0.28	False	0.0000
P-2720EX	12.0	3,042.00	120.0	-282	0.8	False	0.0003
P-2860EX	24.0	761.00	120.0	216	0.15	False	0.0000
P-2880EX	12.0	383.00	120.0	0	0	False	0.0000
P-2890EX	8.0	3,148.00	120.0	-11	0.07	False	0.0000
P-2900	24.0	1,423.00	120.0	194	0.14	False	0.0000
P-2910EX	24.0	497.00	120.0	205	0.15	False	0.0000
P-2950	12.0	1,089.00	120.0	6	0.02	False	0.0000
P-2970EX	12.0	1,119.00	120.0	10	0.03	False	0.0000
P-2990EX	8.0	2,811.00	120.0	-8	0.05	False	0.0000
P-3010EX	12.0	471.00	120.0	11	0.03	False	0.0000
P-3020EX	12.0	1,167.00	120.0	2	0.01	False	0.0000
P-3030EX	12.0	378.00	120.0	0	0	False	0.0000
P-3040EX	8.0	3,081.00	120.0	-8	0.05	False	0.0000
P-3060	12.0	595.00	120.0	0	0	False	0.0000
P-3070EX	8.0	2,922.00	120.0	-5	0.03	False	0.0000
P-3080EX	12.0	1,397.00	120.0	-17	0.05	False	0.0000
P-3090EX	12.0	1,109.00	120.0	-14	0.04	False	0.0000
P-3100EX	12.0	695.00	120.0	4	0.01	False	0.0000
P-3110EX	12.0	664.00	120.0	0	0	False	0.0000
P-3120EX	8.0	1,851.00	120.0	-3	0.02	False	0.0000
P-3130	12.0	1,155.00	120.0	5	0.02	False	0.0000
P-3140EX	16.0	1,783.00	120.0	5	0.01	False	0.0000
P-3150EX	16.0	958.00	120.0	0	0	False	0.0000
P-3160EX	8.0	3,801.00	120.0	-5	0.03	False	0.0000
P-3170EX	8.0	2,838.00	120.0	-11	0.07	False	0.0000
P-3180EX	8.0	736.00	120.0	3	0.02	False	0.0000
P-3190EX	30.0	4,441.00	120.0	0	0	True	0.0000
P-3200	30.0	814.00	120.0	0	0	True	0.0000
P-3240EX	16.0	1,954.00	120.0	881	1.41	False	0.0006
P-3250EX	12.0	844.00	120.0	96	0.27	False	0.0000
P-3260EX	16.0	1,108.00	120.0	537	0.86	False	0.0002
P-3270EX	16.0	1,509.00	120.0	476	0.76	False	0.0002
P-3280EX	12.0	2,890.00	120.0	-61	0.17	False	0.0000
P-3290EX	12.0	2,432.00	120.0	-156	0.44	False	0.0001
P-3640	12.0	1,014.00	120.0	311	0.88	False	0.0003
P-3660	16.0	1,562.00	120.0	-284	0.45	False	0.0001
P-3670	16.0	941.00	120.0	-284	0.45	False	0.0001
P-3690	12.0	1,073.00	120.0	-366	1.04	False	0.0004
P-3700	12.0	828.00	120.0	-65	0.19	False	0.0000
P-3720	12.0	399.00	120.0	-213	0.61	False	0.0002
P-3730	12.0	2,378.00	120.0	-135	0.38	False	0.0001
P-3760	12.0	1,054.00	120.0	-78	0.22	False	0.0000
P-3930EX	16.0	751.00	120.0	-176	0.28	False	0.0000
P-3940EX	16.0	509.00	120.0	-176	0.28	False	0.0000
P-3970EX	16.0	1,445.00	120.0	176	0.28	False	0.0000
P-4720EX	16.0	1,216.00	120.0	355	0.57	False	0.0001
P-4730EX	16.0	456.00	120.0	355	0.57	False	0.0001
P-4750EX	16.0	715.00	120.0	355	0.57	False	0.0001
P-4760EX	16.0	774.00	120.0	2	0	False	0.0000
P-4770	12.0	1,049.00	120.0	-353	1	False	0.0004
P-5700EX	16.0	1,176.00	120.0	724	1.16	False	0.0004
P-5710EX	16.0	1,171.00	120.0	724	1.16	False	0.0004

Label	Diameter (in)	Length (ft)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Is Closed?	Headloss Gradient (ft/ft)
P-5770	16.0	353.00	120.0	881	1.41	False	0.0006
P-5780	16.0	684.00	120.0	881	1.41	False	0.0006
P-5950	12.0	142.00	120.0	-253	0.72	False	0.0002
P-5960	12.0	1,130.00	120.0	-65	0.18	False	0.0000
P-5980	12.0	2,209.00	120.0	-188	0.53	False	0.0001
P-5990	12.0	124.00	120.0	418	1.19	False	0.0006
P-6000	12.0	2,203.00	120.0	230	0.65	False	0.0002
P-6010	12.0	1,163.00	120.0	-188	0.53	False	0.0001
P-6059	12.0	1,714.00	120.0	-148	0.42	False	0.0001
P-COMWTREX	36.0	10.00	120.0	216	0.07	False	0.0000
P-SCAP	36.0	1,752.00	120.0	-1638	0.52	False	0.0000

PLATE 1

Vicinity Map



TOWNSHIP 1 SOUTH, RANGE 7 EAST
OF THE GILA AND SALT RIVER
MERIDIAN, MARICOPA COUNTY, ARIZONA

NOT FOR CONSTRUCTION
OR RECORDING

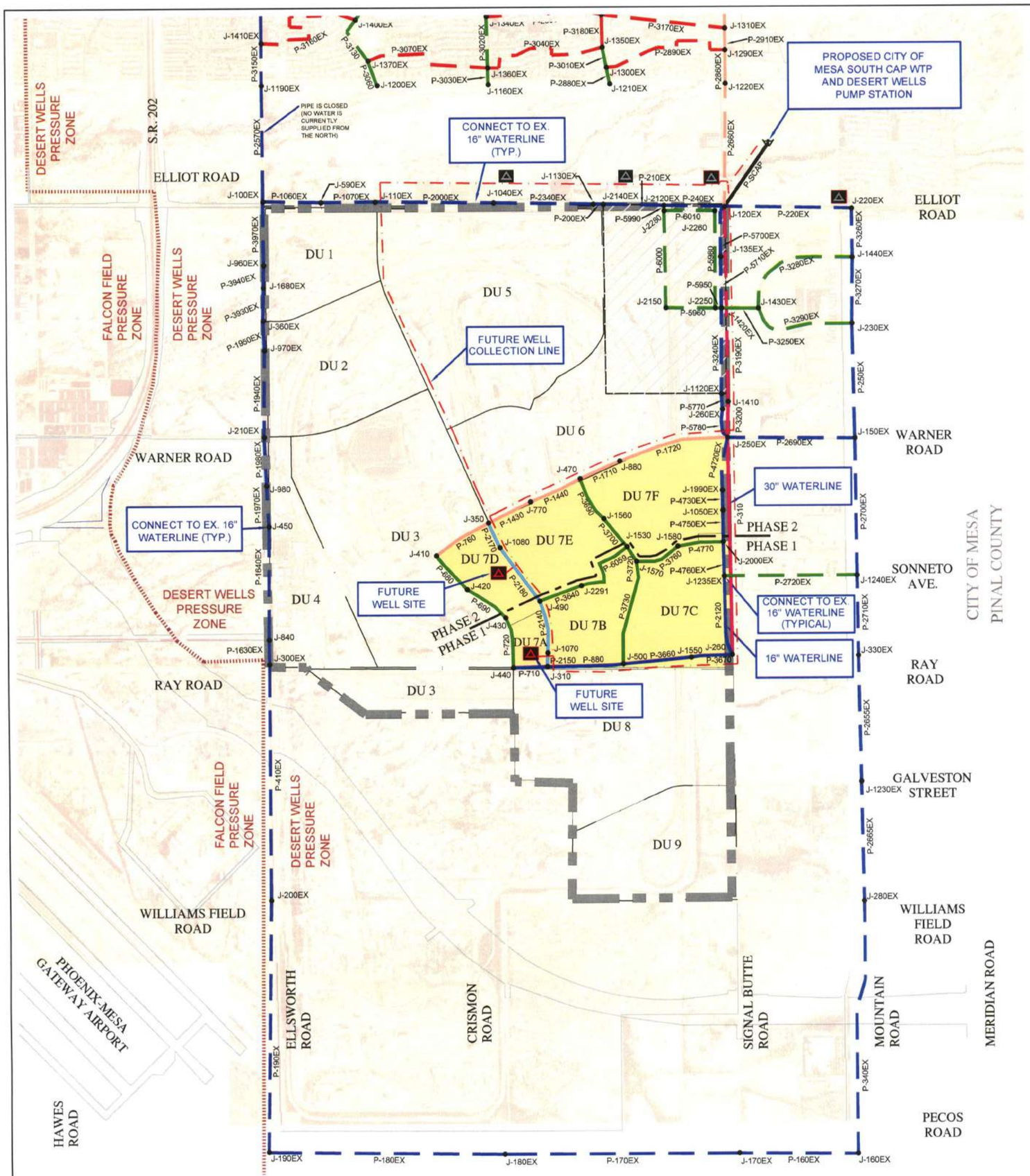
PLATE 1: VICINITY MAP

EASTMARK
MESA, ARIZONA

WOOD/PATEL
2051 West Northern Avenue
Phoenix, AZ 85021
(602) 335-8500
www.woodpatel.com

PLATE 2

DU 7 Master Water Exhibit



NOTES:
1. INFRASTRUCTURE SIZES AND LOCATIONS ARE CONCEPTUAL AND SUBJECT TO CHANGE.

LEGEND

PIPE DIAMETER	EXISTING	PLANNED
8-INCHES		
12-INCHES		
16-INCHES		
20-INCHES		
24-INCHES		
30-INCHES		
WELL SITE		
WELL COLLECTION LINE		
PRESSURE ZONE BOUNDARY		

•	JUNCTION NODE
⊽	WATER SOURCE
P-XXX	PROPOSED PIPE
P-XXXEX	EXISTING PIPE
J-XXX	JUNCTION NODE (PROPOSED)
J-XXXEX	JUNCTION NODE (EXIST.)
MODELED PRESSURE ZONE :	DESERT WELLS

	DU-7
DU-7A	DEVELOPMENT UNIT SUB-AREA
	SITE BOUNDARY
	FIRST SOLAR SITE
	DU 7 PHASE LINE

2400 0 1200 2400

Horz. 1 in. = 2400 ft.

PLATE 2 - DU7 MASTER WATER EXHIBIT

EASTMARK
MESA, ARIZONA

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