

November 3, 2025

TES Eloy Parcel

City of Eloy, Arizona Water Master Plan

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WATER MASTER PLAN

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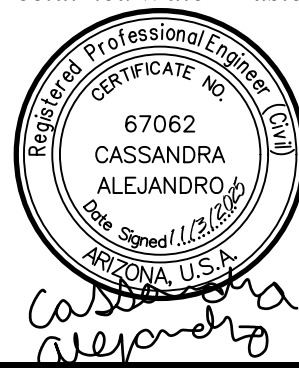
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Appendix A: TES Eloy Parcel WaterCAD Model Results

Appendix B: Applicable Pages from COE *Water, Wastewater, and Reclaimed Water Master Plan Update*, dated April 2024



Abbreviations

ADD = Average Day Demand
AD/MMD = Average Day per Maximum Month
Demand
COE = City of Eloy
DU = Dwelling Unit
MFR = Multi-Family Residential
FPS = Feet per second
GPAD = Gallons per Acre per Day
GPCD = Gallons per Capita per Day

GPD = Gallons per day
GPM = Gallons per Minute
EDU = Estimated Dwelling Units
FT = Feet
MDD = Maximum Day Demand
SFR = Single Family Residential
PHD = Peak Hour Demand
MSL = Mean Sea Level

1.0 INTRODUCTION

The proposed TES Eloy Parcel development, henceforth referred to as “The Development,” is in the COE, Arizona at the northeast corner of W Battaglia Road and 11 Mile Corner. The Development is within the COE’s service area for water. The following water master plan will discuss the requirements necessary to provide water distribution and fire protection services to The Development. The proposed water system design will follow COE *Water System Development Standards*, dated February 2007 and COE *Water, Wastewater, and Reclaimed Water Master Plan Update* dated April 2024.

1.1 Scope of Work

The scope of this water master plan includes the following: identifying applicable design criteria & standards, and the projected water demands for The Development.

1.2 Project Description

The Development encompasses approximately 342 acres of land, featuring 74.95 acres of Commercial land, 211.10 acres of Industrial Land, and 56.09 acres of Residential land with 337 DUs. Table 1 is a summary of The Development’s land uses.

Table 1 – Land Use Summary

Land Use	Area (acres)	Population ¹	DUs ²	Density (DU/acre)
Commercial	74.95	--	--	--
Industrial	211.10	--	--	--
Residential	56.09	1,011	337	6.01
Total	342.14	1,011	337	--

1 = Population Criteria per Section 2.0

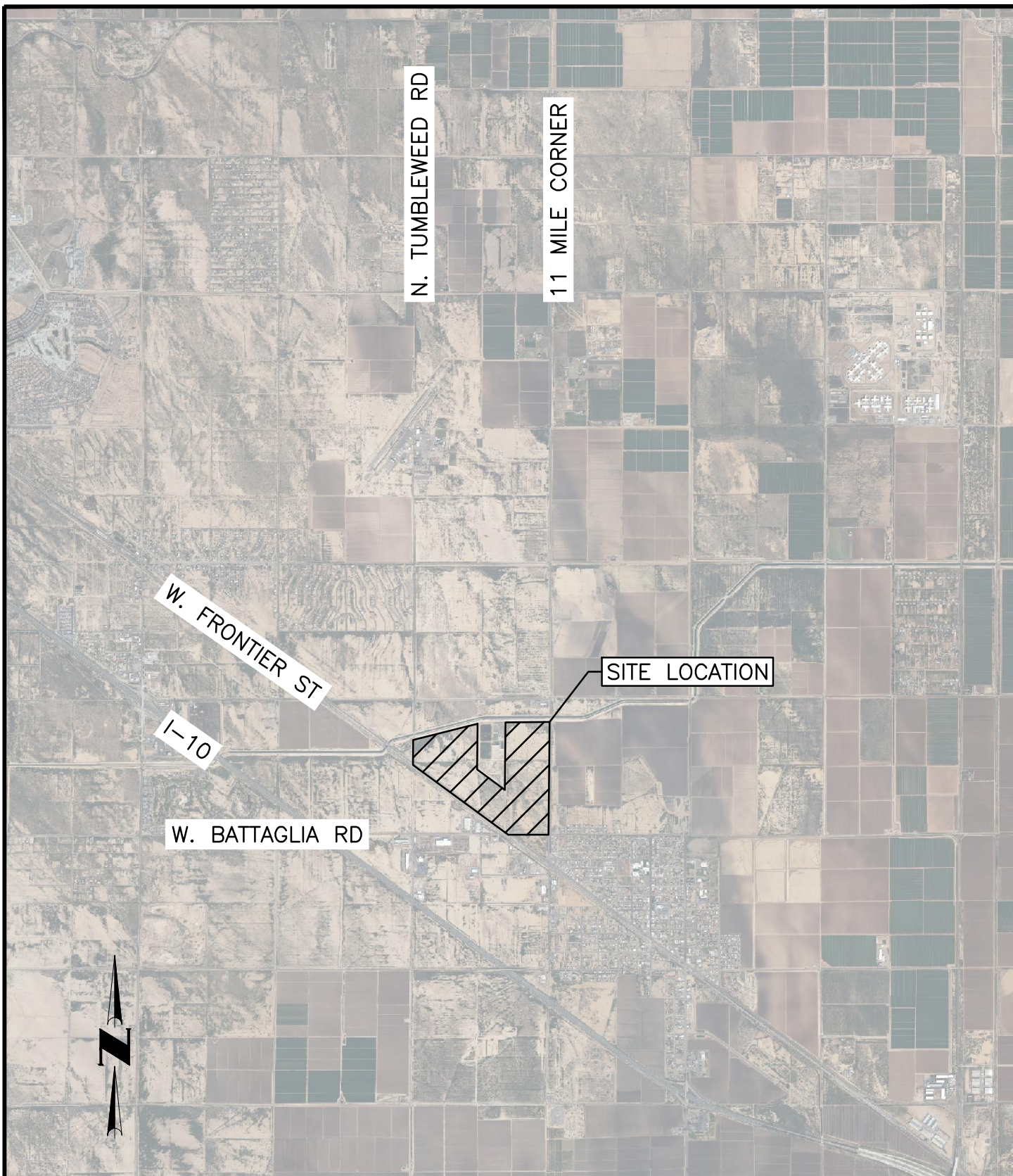
2 = Residential EDU’s approximated from MDR density of 6.00

1.3 Project Location

The Development is bounded to the north by Santa Rosa Canal, to the east by 11 Mile Corner, to the south by W Battaglia Road, and to the west by N Tumbleweed Road (See Figure 2). The development is located in a portion of land within Section 36, Township 7 South, Range 7 East, of the Gila and Salt River Base and Meridian, Pinal County, Arizona. See Figure 1 for the Vicinity Map of the region. See Figure 2 for the Preliminary Site Layout.

1.4 Project Topography

The Development will encompass approximately 342 acres of undeveloped land. The land decreases in elevation from the northeast corner to the southwest corner of the site. The total elevation change is approximately 12 ft, dropping from 1,532 ft above MSL near the northeast corner of the development to about 1,544 ft above MSL at the southwest corner of The Development.



NOT TO SCALE

FIGURE 1

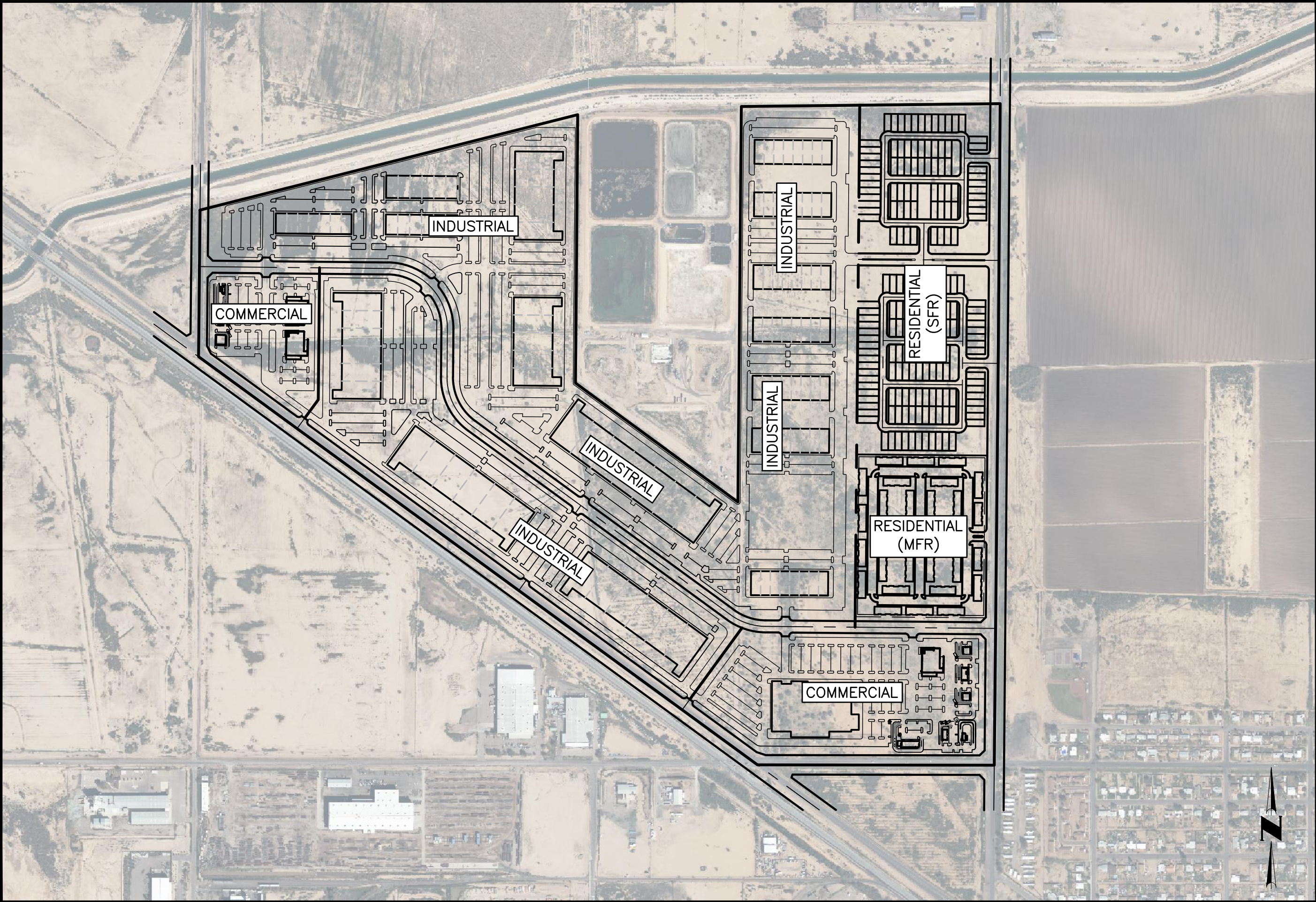
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TES ELOY PARCEL

VICINITY MAP



1.01.0409901



SCALE 1" = 600'

FIGURE 2

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TES ELOY PARCEL

PRELIMINARY SITE LAYOUT

2.0 WATER SYSTEM DESIGN CRITERIA AND STANDARDS

This water master plan is based on criteria from the COE *Water System Development Standards*, dated February 2007 and COE *Water, Wastewater, and Reclaimed Water Master Plan Update*, dated April 2024. The following Criteria were used in developing this plan:

- Demand Factors
 - ADD for:
 - SFR, MFR, Townhomes, and condominiums = 125 gpcd
 - Commercial = 1,750 gpad
 - Industrial & Public Institutions = 1,800 gpad
 - AD/MMD = 1.5 x ADD
 - MDD = 2.0 x ADD
 - PHD = 3.5 x ADD
 - MDD for Turf = 2.64
- Population Factor = 3.0 persons per DU
- MDD + Fire Flow
 - Residential = 1,000 gpm for 2-hours
 - Commercial = 1,500 gpm for 2-hours
- Pressure
 - Minimum = 20 psi (for all flow conditions)
 - Static Range = 35 – 80 psi
 - Individual PRV's will be needed for anything over 80 psi
- Pipeline Sizing Criteria
 - Distribution lines $\geq$ 8-inch
 - Transmission lines $\geq$ 16-inch
- Velocity
 - Distribution lines
 - MDD for pipes 12-inch or less shall not exceed 5 fps
 - MDD + Fire Flow there is no specific velocity criteria, the 20 psi residual pressure must be met throughout the system during this demand condition.
 - Transmission lines
 - 16-inch or larger shall not exceed 5 fps
- Minimum Emergency Storage = 0.5 x ADD
- Minimum Water Supply Facilities = 1.5 x ADD
- Pump Station Capacity = MDD + Fire Flow or PHD (whichever is greater)
- Well Requirements
 - Interconnected Water Systems = 1.5 x ADD
 - Isolated Water Systems
 - There shall be a minimum of two wells for the reliability of isolated systems.
- Approved Materials
 - DIP and PVC
- Minimum Cover
 - Distribution lines = 4 ft
 - Transmission lines = 5ft

3.0 EXISTING INFRASTRUCTURE

This section includes a summary of The Development's existing on-site and offsite water distribution systems.

3.1 Existing Waterlines

The Development contains a 6-inch waterline within the project boundary. Existing infrastructure adjacent to the project boundary includes a 6-inch waterline within N Tumbleweed Road, a 6-inch waterline within W Frontier Street, and a 12-inch waterline within 11 Mile Corner.

4.0 PROPOSED WATER INFRASTRUCTURE

The following water demands are based on the *COE Water System Development Standards*, presented in Section 2.0. The water demands for The Development may be seen in Table 2.

Table 2 – Water Demands

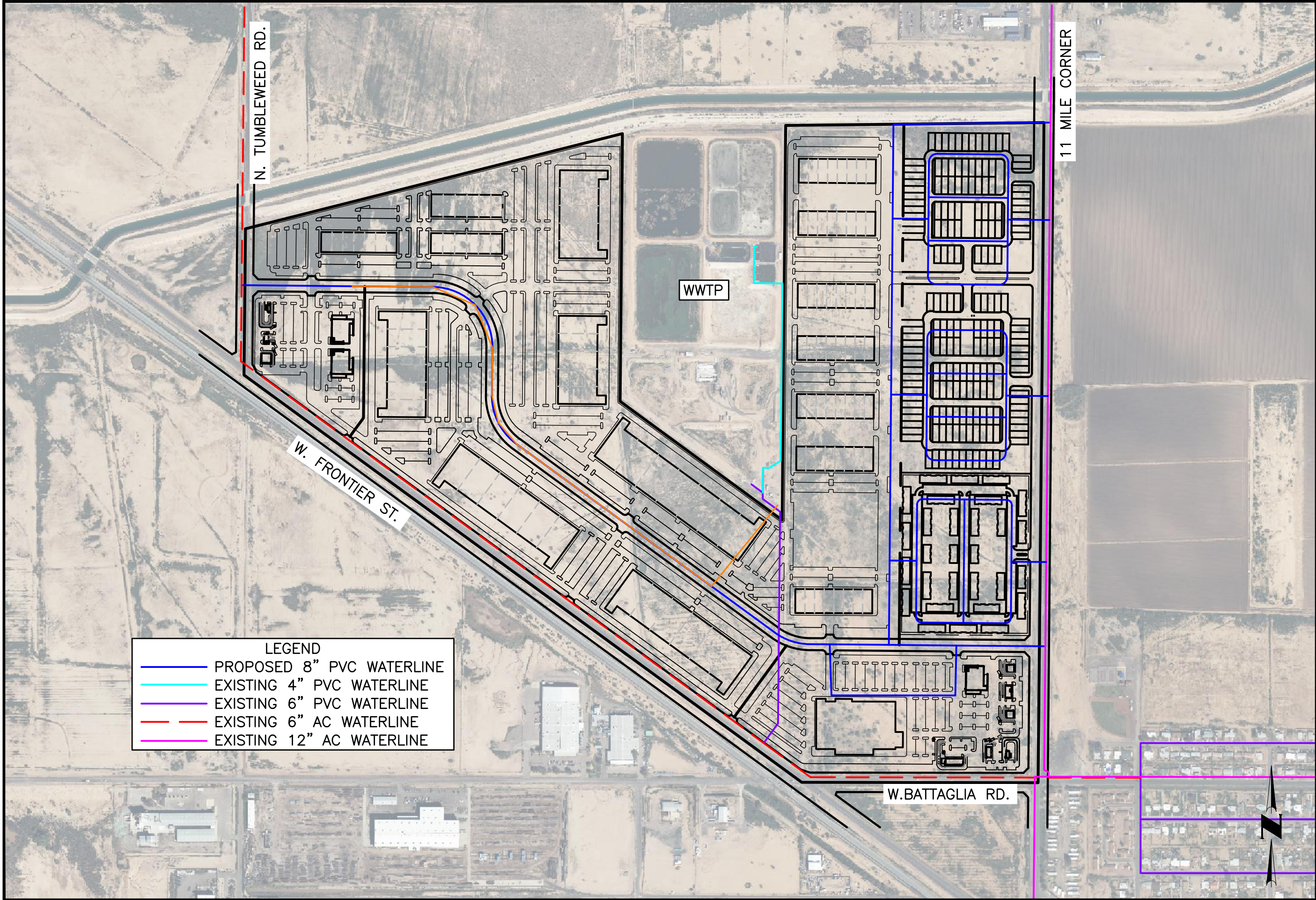
Land Use	Area	DUs ²	Population ¹	ADD Factor	Unit	ADD (gpd)	AD/MMD (gpd)	MDD (gpd)	PHD (gpd)
Commercial	74.95	--	--	1,750	gpad	131,163	196,744	262,325	459,069
Industrial	211.10	--	--	1,800	gpad	379,980	569,970	759,960	1,329,930
Residential	56.09	337	1,011	125	gpcd	126,375	189,563	252,750	442,313
Total	342.14	337	1,010	--	--	637,518	956,276	1,275,035	2,231,311

1 = Population Criteria per Section 2.0

2 = Residential DU's approximated from MDR density of 6.00

4.1 Proposed Water Infrastructure

Water service will be provided to The Development by the COE. Distribution lines will be designed throughout the project based on design criteria to provide water service and fire protection to The Development. A preliminary water system has been designed but is subject to change. The final on-site water system will be designed at a later stage following the submission of the final site plan. This preliminary system includes 8-inch waterlines that connect to the existing 6 and 12-inch waterlines located to the east and west of the site. The Preliminary Water System Layout is shown in Figure 3.



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TES ELOY PARCEL	
PRELIMINARY WATER SYSTEM LAYOUT	
SCALE 1" = 600'	FIGURE 3
4550 North 12th Street Phoenix, Arizona 85014 Phone 602-264-6831 http://www.cvlci.com	

5.0 WATER MODELING SYSTEM

5.1 Network Analysis Domestic Demands

The network analysis for the preliminary water distribution system was completed using WaterCAD V8i. A model was created and modified as necessary to demonstrate that the existing and proposed water infrastructure meets the water system design criteria shown in Section 2. The system model was analyzed for five scenarios: ADD, AD/MMD, MDD, PHD, and MDD + Fire Flow based on the pressure requirements described. The existing pressures and flows were modeled using an HGL of 1,709 ft above MSL, determined from *COE Water, Wastewater, and Reclaimed Water Master Plan, 2024*, See Appendix B. The existing conditions were modeled using a HGL of 1,709 ft above MSL. Results of the WaterCAD model are shown in a steady state time, see Appendix A for results.

Input parameters of the water distribution system modeling include:

- Pipe Diameters (inches)
- Elevations of Nodes/Junctions (ft)
- System Water Demands (gpm)
- Hazen-Williams, C =130
- Residential Fire Flow = 1,000 gpm for 2 hours
- Commercial Fire Flow = 1,500 gpm for 2 hours

Output parameters include but are not limited to:

- Velocities (fps)
- Pressure (psi)
- Head Loss (ft)
- Flow Rates (gpm)

Head Loss Gradient (ft/1000 ft)

5.2 Modeling Results Domestic Demands

The WaterCAD analysis for The Development's domestic demands are presented in Appendix A. Table 3 summarizes the Results for The Development's WaterCAD analysis.

Table 3 – WaterCAD Model Results

Scenario	Flow (gpm)	Pressure (psi)				Maximum Velocity (fps)	Pipe ID
		Minimum	Node	Maximum	Node		
ADD	442.72	72	J-2	76	J-4	1.17	P-4
AD/MMD	664.08	72	J-10	76	J-11	1.76	P-4
MDD	885.44	72	J-10	75	J-11	2.34	P-4
PHD	1,549.52	69	J-10	73	J-11	4.10	P-4
MDD + FF	2,385.44	23	J-11	75	J-3	9.68	P-7

See Appendix A for the complete WaterCAD results.

6.0 SUMMARY

This water master plan presents the proposed water system required to provide water distribution and fire protection services to the project site. The following summarizes CVL's findings of the proposed water system required to serve The Development.

- A system of 8-inch waterlines will be designed to provide The Development with adequate water distribution and fire protection services.
- The water service connections will be made to the existing 6 and 12-inch water lines within N Tumbleweed Road and 11 Mile Corner.
- The estimated water demands for The Development are as follows:
 - ADD = 637,518 gpd – 442.72 gpm.
 - AD/MMD = 956,276 gpd – 664.08 gpm.
 - MDD = 1,274,035 gpd – 885.44 gpm.
 - PHD = 2,231,311 gpd – 1,549.52 gpm.
- The maximum velocities in the proposed water system during a MDD scenario are less than the maximum requirement of 5 fps.
- The proposed distribution system's pressure range during the domestic demand scenarios for The Development is between 69 - 76 psi.
- The proposed distribution system's minimum pressure for The Development is adequate during the MDD + Fire Flow event with a minimum pressure of 23 psi.

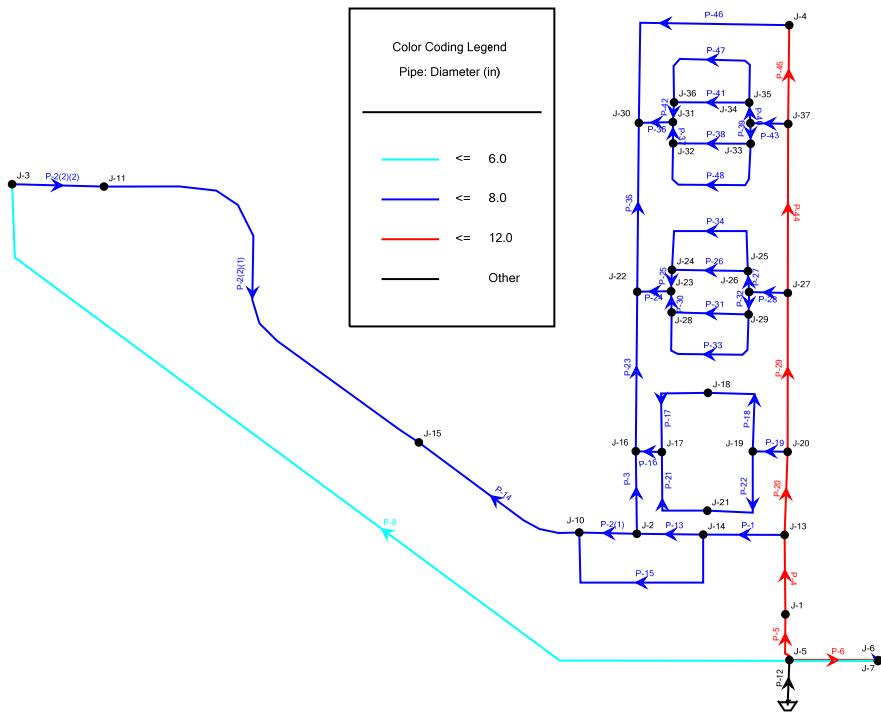
7.0 REFERENCES

- COE *Water System Development Standards* dated 2007.
- COE *Water, Wastewater, and Reclaimed Water Master Plan Update* dated April 2024.

APPENDIX A

TES Eloy Parcel WaterCAD Model Results

Named View - 1



TES Eloy Parcel
Average Day Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	J-13	563	J-14	8.0	PVC	130.0	135	0.86	0.25
P-2(1)	J-2	399	J-10	8.0	PVC	130.0	37	0.24	0.02
P-2(2)	J-15	3,189	J-11	8.0	PVC	130.0	12	0.08	0.02
P-2(2)	J-11	635	J-3	8.0	PVC	130.0	30	0.19	0.02
P-3	J-2	571	J-16	8.0	PVC	130.0	8	0.05	0.00
P-4	J-13	550	J-1	12.0	AC	130.0	413	1.17	0.27
P-5	J-1	334	J-5	12.0	AC	130.0	413	1.17	0.16
P-6	J-5	614	J-6	12.0	AC	130.0	30	0.09	0.00
P-7	J-6	6	J-7	8.0	AC	130.0	30	0.19	0.00
P-8	J-7	7,400	J-3	6.0	AC	130.0	30	0.34	0.84
P-12	R-1	315	J-5	99.0	Ductile Iron	130.0	443	0.02	0.00
P-13	J-2	459	J-14	8.0	Ductile Iron	130.0	70	0.44	0.06
P-14	J-15	1,307	J-10	8.0	Ductile Iron	130.0	54	0.35	0.11
P-15	J-10	1,529	J-14	8.0	Ductile Iron	130.0	41	0.26	0.08
P-16	J-16	180	J-17	8.0	Ductile Iron	130.0	78	0.50	0.03
P-17	J-17	729	J-18	8.0	Ductile Iron	130.0	42	0.27	0.04
P-18	J-18	721	J-19	8.0	Ductile Iron	130.0	48	0.31	0.05
P-19	J-19	242	J-20	8.0	Ductile Iron	130.0	102	0.65	0.06
P-20	J-20	576	J-13	12.0	Ductile Iron	130.0	277	0.79	0.14
P-21	J-17	717	J-21	8.0	Ductile Iron	130.0	42	0.27	0.04
P-22	J-21	739	J-19	8.0	Ductile Iron	130.0	48	0.30	0.05
P-23	J-16	1,105	J-22	8.0	Ductile Iron	130.0	20	0.13	0.01
P-24	J-22	234	J-23	8.0	Ductile Iron	130.0	48	0.31	0.02
P-25	J-23	148	J-24	8.0	Ductile Iron	130.0	27	0.18	0.00
P-26	J-24	525	J-25	8.0	Ductile Iron	130.0	20	0.13	0.01
P-27	J-25	146	J-26	8.0	Ductile Iron	130.0	39	0.25	0.01
P-28	J-26	267	J-27	8.0	Ductile Iron	130.0	83	0.53	0.05
P-29	J-27	1,099	J-20	12.0	Ductile Iron	130.0	176	0.50	0.11
P-30	J-23	146	J-28	8.0	Ductile Iron	130.0	27	0.17	0.00
P-31	J-28	533	J-29	8.0	Ductile Iron	130.0	19	0.12	0.01
P-32	J-29	155	J-26	8.0	Ductile Iron	130.0	39	0.25	0.01
P-33	J-28	1,057	J-29	8.0	Ductile Iron	130.0	13	0.08	0.01
P-34	J-24	1,048	J-25	8.0	Ductile Iron	130.0	14	0.09	0.01
P-35	J-22	1,169	J-30	8.0	Ductile Iron	130.0	3	0.02	0.00
P-36	J-30	235	J-31	8.0	Ductile Iron	130.0	34	0.22	0.01
P-37	J-31	147	J-32	8.0	Ductile Iron	130.0	17	0.11	0.00
P-38	J-32	536	J-33	8.0	Ductile Iron	130.0	14	0.09	0.00
P-39	J-33	143	J-34	8.0	Ductile Iron	130.0	29	0.18	0.00
P-40	J-34	142	J-35	8.0	Ductile Iron	130.0	29	0.18	0.00
P-41	J-35	521	J-36	8.0	Ductile Iron	130.0	14	0.09	0.00
P-42	J-36	138	J-31	8.0	Ductile Iron	130.0	17	0.11	0.00
P-43	J-34	261	J-37	8.0	Ductile Iron	130.0	64	0.41	0.03

TES Eloy Parcel
Average Day Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-44	J-37	1,170	J-27	12.0	Ductile Iron	130.0	92	0.26	0.04
P-45	J-37	684	J-4	12.0	Ductile Iron	130.0	29	0.08	0.00
P-46	J-4	1,724	J-30	8.0	Ductile Iron	130.0	29	0.18	0.04
P-47	J-36	1,073	J-35	8.0	Ductile Iron	130.0	9	0.06	0.00
P-48	J-32	1,061	J-33	8.0	Ductile Iron	130.0	9	0.06	0.00

TES Eloy Parcel
Average Day Demand

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,543.00	0	1,708.84	72
J-2	1,539.18	24	1,708.25	73
J-3	1,532.00	0	1,708.16	76
J-4	1,534.23	0	1,708.28	75
J-5	1,543.00	0	1,709.00	72
J-6	1,544.00	0	1,709.00	71
J-7	1,544.00	0	1,709.00	71
J-10	1,540.71	24	1,708.24	72
J-11	1,531.44	18	1,708.14	76
J-13	1,542.55	0	1,708.57	72
J-14	1,540.62	24	1,708.31	73
J-15	1,537.49	66	1,708.13	74
J-16	1,539.18	66	1,708.25	73
J-17	1,539.37	6	1,708.28	73
J-18	1,539.38	6	1,708.32	73
J-19	1,539.72	6	1,708.37	73
J-20	1,541.21	0	1,708.43	72
J-21	1,539.88	6	1,708.32	73
J-22	1,537.44	65	1,708.24	74
J-23	1,537.08	6	1,708.25	74
J-24	1,536.80	6	1,708.26	74
J-25	1,536.94	6	1,708.26	74
J-26	1,536.91	6	1,708.27	74
J-27	1,538.52	0	1,708.32	73
J-28	1,536.38	6	1,708.26	74
J-29	1,537.89	6	1,708.26	74
J-30	1,534.99	66	1,708.24	75
J-31	1,535.22	0	1,708.24	75
J-32	1,535.46	6	1,708.25	75
J-33	1,535.90	6	1,708.25	75
J-34	1,535.05	6	1,708.25	75
J-35	1,535.00	6	1,708.25	75
J-36	1,534.86	6	1,708.25	75
J-37	1,535.80	0	1,708.28	75

Reservoir Table - Time: 0.00 hours

ID	Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
48	R-1	1,709.00	443	1,709.00

TES Eloy Parcel
Average Day of Max Month Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	J-13	563	J-14	8.0	PVC	130.0	203	1.29	0.54
P-2(1)	J-2	399	J-10	8.0	PVC	130.0	56	0.36	0.03
P-2(2)	J-15	3,189	J-11	8.0	PVC	130.0	18	0.11	0.03
P-2(2)	J-11	635	J-3	8.0	PVC	130.0	45	0.29	0.04
P-3	J-2	571	J-16	8.0	PVC	130.0	12	0.08	0.00
P-4	J-13	550	J-1	12.0	AC	130.0	619	1.76	0.57
P-5	J-1	334	J-5	12.0	AC	130.0	619	1.76	0.35
P-6	J-5	614	J-6	12.0	AC	130.0	45	0.13	0.01
P-7	J-6	6	J-7	8.0	AC	130.0	45	0.29	0.00
P-8	J-7	7,400	J-3	6.0	AC	130.0	45	0.51	1.77
P-12	R-1	315	J-5	99.0	Ductile Iron	130.0	664	0.03	0.00
P-13	J-2	459	J-14	8.0	Ductile Iron	130.0	104	0.67	0.13
P-14	J-15	1,307	J-10	8.0	Ductile Iron	130.0	82	0.52	0.23
P-15	J-10	1,529	J-14	8.0	Ductile Iron	130.0	62	0.40	0.16
P-16	J-16	180	J-17	8.0	Ductile Iron	130.0	117	0.75	0.06
P-17	J-17	729	J-18	8.0	Ductile Iron	130.0	63	0.40	0.08
P-18	J-18	721	J-19	8.0	Ductile Iron	130.0	72	0.46	0.10
P-19	J-19	242	J-20	8.0	Ductile Iron	130.0	153	0.97	0.14
P-20	J-20	576	J-13	12.0	Ductile Iron	130.0	416	1.18	0.29
P-21	J-17	717	J-21	8.0	Ductile Iron	130.0	63	0.40	0.08
P-22	J-21	739	J-19	8.0	Ductile Iron	130.0	72	0.46	0.10
P-23	J-16	1,105	J-22	8.0	Ductile Iron	130.0	30	0.19	0.03
P-24	J-22	234	J-23	8.0	Ductile Iron	130.0	73	0.46	0.03
P-25	J-23	148	J-24	8.0	Ductile Iron	130.0	41	0.26	0.01
P-26	J-24	525	J-25	8.0	Ductile Iron	130.0	29	0.19	0.01
P-27	J-25	146	J-26	8.0	Ductile Iron	130.0	58	0.37	0.01
P-28	J-26	267	J-27	8.0	Ductile Iron	130.0	125	0.80	0.10
P-29	J-27	1,099	J-20	12.0	Ductile Iron	130.0	263	0.75	0.24
P-30	J-23	146	J-28	8.0	Ductile Iron	130.0	40	0.26	0.01
P-31	J-28	533	J-29	8.0	Ductile Iron	130.0	29	0.18	0.01
P-32	J-29	155	J-26	8.0	Ductile Iron	130.0	58	0.37	0.01
P-33	J-28	1,057	J-29	8.0	Ductile Iron	130.0	20	0.13	0.01
P-34	J-24	1,048	J-25	8.0	Ductile Iron	130.0	20	0.13	0.01
P-35	J-22	1,169	J-30	8.0	Ductile Iron	130.0	5	0.03	0.00
P-36	J-30	235	J-31	8.0	Ductile Iron	130.0	52	0.33	0.02
P-37	J-31	147	J-32	8.0	Ductile Iron	130.0	26	0.16	0.00
P-38	J-32	536	J-33	8.0	Ductile Iron	130.0	20	0.13	0.01
P-39	J-33	143	J-34	8.0	Ductile Iron	130.0	43	0.27	0.01
P-40	J-34	142	J-35	8.0	Ductile Iron	130.0	43	0.28	0.01
P-41	J-35	521	J-36	8.0	Ductile Iron	130.0	21	0.13	0.01
P-42	J-36	138	J-31	8.0	Ductile Iron	130.0	26	0.17	0.00
P-43	J-34	261	J-37	8.0	Ductile Iron	130.0	95	0.61	0.06

TES Eloy Parcel
Average Day of Max Month Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-44	J-37	1,170	J-27	12.0	Ductile Iron	130.0	138	0.39	0.08
P-45	J-37	684	J-4	12.0	Ductile Iron	130.0	43	0.12	0.01
P-46	J-4	1,724	J-30	8.0	Ductile Iron	130.0	43	0.27	0.09
P-47	J-36	1,073	J-35	8.0	Ductile Iron	130.0	14	0.09	0.01
P-48	J-32	1,061	J-33	8.0	Ductile Iron	130.0	14	0.09	0.01

TES Eloy Parcel
Average Day of Max Month Demand

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,543.00	0	1,708.65	72
J-2	1,539.18	36	1,707.42	73
J-3	1,532.00	0	1,707.22	76
J-4	1,534.23	0	1,707.47	75
J-5	1,543.00	0	1,709.00	72
J-6	1,544.00	0	1,708.99	71
J-7	1,544.00	0	1,708.99	71
J-10	1,540.71	36	1,707.38	72
J-11	1,531.44	27	1,707.18	76
J-13	1,542.55	0	1,708.08	72
J-14	1,540.62	36	1,707.54	72
J-15	1,537.49	99	1,707.15	73
J-16	1,539.18	99	1,707.41	73
J-17	1,539.37	9	1,707.47	73
J-18	1,539.38	9	1,707.55	73
J-19	1,539.72	9	1,707.65	73
J-20	1,541.21	0	1,707.79	72
J-21	1,539.88	9	1,707.55	73
J-22	1,537.44	98	1,707.38	74
J-23	1,537.08	9	1,707.42	74
J-24	1,536.80	9	1,707.42	74
J-25	1,536.94	9	1,707.44	74
J-26	1,536.91	9	1,707.45	74
J-27	1,538.52	0	1,707.56	73
J-28	1,536.38	9	1,707.42	74
J-29	1,537.89	9	1,707.44	73
J-30	1,534.99	99	1,707.38	75
J-31	1,535.22	0	1,707.40	74
J-32	1,535.46	9	1,707.40	74
J-33	1,535.90	9	1,707.41	74
J-34	1,535.05	9	1,707.42	75
J-35	1,535.00	9	1,707.41	75
J-36	1,534.86	9	1,707.40	75
J-37	1,535.80	0	1,707.48	74

Reservoir Table - Time: 0.00 hours

ID	Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
48	R-1	1,709.00	664	1,709.00

TES Eloy Parcel
Maximum Day Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	J-13	563	J-14	8.0	PVC	130.0	270	1.73	0.91
P-2(1)	J-2	399	J-10	8.0	PVC	130.0	75	0.48	0.06
P-2(2)	J-15	3,189	J-11	8.0	PVC	130.0	24	0.15	0.06
P-2(2)	J-11	635	J-3	8.0	PVC	130.0	60	0.38	0.06
P-3	J-2	571	J-16	8.0	PVC	130.0	16	0.10	0.00
P-4	J-13	550	J-1	12.0	AC	130.0	825	2.34	0.98
P-5	J-1	334	J-5	12.0	AC	130.0	825	2.34	0.59
P-6	J-5	614	J-6	12.0	AC	130.0	60	0.17	0.01
P-7	J-6	6	J-7	8.0	AC	130.0	60	0.38	0.00
P-8	J-7	7,400	J-3	6.0	AC	130.0	60	0.68	3.02
P-12	R-1	315	J-5	99.0	Ductile Iron	130.0	885	0.04	0.00
P-13	J-2	459	J-14	8.0	Ductile Iron	130.0	139	0.89	0.22
P-14	J-15	1,307	J-10	8.0	Ductile Iron	130.0	109	0.69	0.39
P-15	J-10	1,529	J-14	8.0	Ductile Iron	130.0	83	0.53	0.28
P-16	J-16	180	J-17	8.0	Ductile Iron	130.0	156	1.00	0.11
P-17	J-17	729	J-18	8.0	Ductile Iron	130.0	84	0.54	0.14
P-18	J-18	721	J-19	8.0	Ductile Iron	130.0	96	0.61	0.17
P-19	J-19	242	J-20	8.0	Ductile Iron	130.0	204	1.30	0.23
P-20	J-20	576	J-13	12.0	Ductile Iron	130.0	555	1.57	0.49
P-21	J-17	717	J-21	8.0	Ductile Iron	130.0	84	0.53	0.13
P-22	J-21	739	J-19	8.0	Ductile Iron	130.0	96	0.61	0.17
P-23	J-16	1,105	J-22	8.0	Ductile Iron	130.0	40	0.25	0.05
P-24	J-22	234	J-23	8.0	Ductile Iron	130.0	97	0.62	0.06
P-25	J-23	148	J-24	8.0	Ductile Iron	130.0	55	0.35	0.01
P-26	J-24	525	J-25	8.0	Ductile Iron	130.0	39	0.25	0.02
P-27	J-25	146	J-26	8.0	Ductile Iron	130.0	78	0.50	0.02
P-28	J-26	267	J-27	8.0	Ductile Iron	130.0	167	1.06	0.18
P-29	J-27	1,099	J-20	12.0	Ductile Iron	130.0	351	1.00	0.40
P-30	J-23	146	J-28	8.0	Ductile Iron	130.0	54	0.34	0.01
P-31	J-28	533	J-29	8.0	Ductile Iron	130.0	38	0.25	0.02
P-32	J-29	155	J-26	8.0	Ductile Iron	130.0	78	0.49	0.02
P-33	J-28	1,057	J-29	8.0	Ductile Iron	130.0	27	0.17	0.02
P-34	J-24	1,048	J-25	8.0	Ductile Iron	130.0	27	0.17	0.02
P-35	J-22	1,169	J-30	8.0	Ductile Iron	130.0	6	0.04	0.00
P-36	J-30	235	J-31	8.0	Ductile Iron	130.0	69	0.44	0.03
P-37	J-31	147	J-32	8.0	Ductile Iron	130.0	34	0.22	0.01
P-38	J-32	536	J-33	8.0	Ductile Iron	130.0	27	0.17	0.01
P-39	J-33	143	J-34	8.0	Ductile Iron	130.0	57	0.37	0.01
P-40	J-34	142	J-35	8.0	Ductile Iron	130.0	58	0.37	0.01
P-41	J-35	521	J-36	8.0	Ductile Iron	130.0	28	0.18	0.01
P-42	J-36	138	J-31	8.0	Ductile Iron	130.0	35	0.22	0.01
P-43	J-34	261	J-37	8.0	Ductile Iron	130.0	127	0.81	0.11

TES Eloy Parcel
Maximum Day Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-44	J-37	1,170	J-27	12.0	Ductile Iron	130.0	184	0.52	0.13
P-45	J-37	684	J-4	12.0	Ductile Iron	130.0	57	0.16	0.01
P-46	J-4	1,724	J-30	8.0	Ductile Iron	130.0	57	0.36	0.16
P-47	J-36	1,073	J-35	8.0	Ductile Iron	130.0	19	0.12	0.01
P-48	J-32	1,061	J-33	8.0	Ductile Iron	130.0	19	0.12	0.01

TES Eloy Parcel
Maximum Day Demand

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,543.00	0	1,708.41	72
J-2	1,539.18	49	1,706.30	72
J-3	1,532.00	0	1,705.97	75
J-4	1,534.23	0	1,706.40	74
J-5	1,543.00	0	1,709.00	72
J-6	1,544.00	0	1,708.99	71
J-7	1,544.00	0	1,708.99	71
J-10	1,540.71	49	1,706.24	72
J-11	1,531.44	36	1,705.91	75
J-13	1,542.55	0	1,707.43	71
J-14	1,540.62	48	1,706.52	72
J-15	1,537.49	133	1,705.85	73
J-16	1,539.18	133	1,706.30	72
J-17	1,539.37	11	1,706.40	72
J-18	1,539.38	11	1,706.54	72
J-19	1,539.72	13	1,706.71	72
J-20	1,541.21	0	1,706.94	72
J-21	1,539.88	12	1,706.53	72
J-22	1,537.44	130	1,706.24	73
J-23	1,537.08	11	1,706.30	73
J-24	1,536.80	11	1,706.31	73
J-25	1,536.94	11	1,706.34	73
J-26	1,536.91	11	1,706.36	73
J-27	1,538.52	0	1,706.54	73
J-28	1,536.38	11	1,706.31	74
J-29	1,537.89	13	1,706.34	73
J-30	1,534.99	133	1,706.24	74
J-31	1,535.22	0	1,706.27	74
J-32	1,535.46	11	1,706.28	74
J-33	1,535.90	11	1,706.29	74
J-34	1,535.05	13	1,706.30	74
J-35	1,535.00	11	1,706.29	74
J-36	1,534.86	11	1,706.28	74
J-37	1,535.80	0	1,706.41	74

Reservoir Table - Time: 0.00 hours

ID	Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
48	R-1	1,709.00	885	1,709.00

TES Eloy Parcel
Peak Hour Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-1	J-13	563	J-14	8.0	PVC	130.0	473	3.02	2.57
P-2(1)	J-2	399	J-10	8.0	PVC	130.0	130	0.83	0.17
P-2(2)	J-15	3,189	J-11	8.0	PVC	130.0	42	0.27	0.16
P-2(2)	J-11	635	J-3	8.0	PVC	130.0	105	0.67	0.18
P-3	J-2	571	J-16	8.0	PVC	130.0	28	0.18	0.01
P-4	J-13	550	J-1	12.0	AC	130.0	1,444	4.10	2.75
P-5	J-1	334	J-5	12.0	AC	130.0	1,444	4.10	1.67
P-6	J-5	614	J-6	12.0	AC	130.0	105	0.30	0.02
P-7	J-6	6	J-7	8.0	AC	130.0	105	0.67	0.00
P-8	J-7	7,400	J-3	6.0	AC	130.0	105	1.20	8.51
P-12	R-1	315	J-5	99.0	Ductile Iron	130.0	1,550	0.06	0.00
P-13	J-2	459	J-14	8.0	Ductile Iron	130.0	243	1.55	0.61
P-14	J-15	1,307	J-10	8.0	Ductile Iron	130.0	190	1.21	1.10
P-15	J-10	1,529	J-14	8.0	Ductile Iron	130.0	145	0.92	0.78
P-16	J-16	180	J-17	8.0	Ductile Iron	130.0	273	1.75	0.30
P-17	J-17	729	J-18	8.0	Ductile Iron	130.0	147	0.94	0.38
P-18	J-18	721	J-19	8.0	Ductile Iron	130.0	167	1.07	0.48
P-19	J-19	242	J-20	8.0	Ductile Iron	130.0	356	2.27	0.65
P-20	J-20	576	J-13	12.0	Ductile Iron	130.0	971	2.75	1.38
P-21	J-17	717	J-21	8.0	Ductile Iron	130.0	146	0.93	0.37
P-22	J-21	739	J-19	8.0	Ductile Iron	130.0	167	1.07	0.49
P-23	J-16	1,105	J-22	8.0	Ductile Iron	130.0	69	0.44	0.14
P-24	J-22	234	J-23	8.0	Ductile Iron	130.0	170	1.08	0.16
P-25	J-23	148	J-24	8.0	Ductile Iron	130.0	96	0.61	0.04
P-26	J-24	525	J-25	8.0	Ductile Iron	130.0	69	0.44	0.07
P-27	J-25	146	J-26	8.0	Ductile Iron	130.0	136	0.87	0.07
P-28	J-26	267	J-27	8.0	Ductile Iron	130.0	292	1.86	0.50
P-29	J-27	1,099	J-20	12.0	Ductile Iron	130.0	615	1.74	1.13
P-30	J-23	146	J-28	8.0	Ductile Iron	130.0	94	0.60	0.03
P-31	J-28	533	J-29	8.0	Ductile Iron	130.0	67	0.43	0.07
P-32	J-29	155	J-26	8.0	Ductile Iron	130.0	136	0.87	0.07
P-33	J-28	1,057	J-29	8.0	Ductile Iron	130.0	46	0.30	0.07
P-34	J-24	1,048	J-25	8.0	Ductile Iron	130.0	47	0.30	0.07
P-35	J-22	1,169	J-30	8.0	Ductile Iron	130.0	11	0.07	0.01
P-36	J-30	235	J-31	8.0	Ductile Iron	130.0	121	0.77	0.09
P-37	J-31	147	J-32	8.0	Ductile Iron	130.0	60	0.38	0.01
P-38	J-32	536	J-33	8.0	Ductile Iron	130.0	47	0.30	0.03
P-39	J-33	143	J-34	8.0	Ductile Iron	130.0	100	0.64	0.04
P-40	J-34	142	J-35	8.0	Ductile Iron	130.0	101	0.64	0.04
P-41	J-35	521	J-36	8.0	Ductile Iron	130.0	48	0.31	0.03
P-42	J-36	138	J-31	8.0	Ductile Iron	130.0	61	0.39	0.01
P-43	J-34	261	J-37	8.0	Ductile Iron	130.0	223	1.42	0.30

TES Eloy Parcel
Peak Hour Demand
Pipe Table - Time: 0.00 hours

Label	Start Node	Length (ft)	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (ft/s)	Headloss (ft)
P-44	J-37	1,170	J-27	12.0	Ductile Iron	130.0	323	0.92	0.37
P-45	J-37	684	J-4	12.0	Ductile Iron	130.0	100	0.28	0.02
P-46	J-4	1,724	J-30	8.0	Ductile Iron	130.0	100	0.64	0.44
P-47	J-36	1,073	J-35	8.0	Ductile Iron	130.0	33	0.21	0.03
P-48	J-32	1,061	J-33	8.0	Ductile Iron	130.0	33	0.21	0.03

TES Eloy Parcel
Peak Hour Demand

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	1,543.00	0	1,707.33	71
J-2	1,539.18	85	1,701.39	70
J-3	1,532.00	0	1,700.46	73
J-4	1,534.23	0	1,701.67	72
J-5	1,543.00	0	1,709.00	72
J-6	1,544.00	0	1,708.98	71
J-7	1,544.00	0	1,708.97	71
J-10	1,540.71	85	1,701.22	69
J-11	1,531.44	64	1,700.28	73
J-13	1,542.55	0	1,704.57	70
J-14	1,540.62	85	1,702.00	70
J-15	1,537.49	232	1,700.12	70
J-16	1,539.18	232	1,701.38	70
J-17	1,539.37	20	1,701.68	70
J-18	1,539.38	20	1,702.06	70
J-19	1,539.72	22	1,702.54	70
J-20	1,541.21	0	1,703.19	70
J-21	1,539.88	21	1,702.05	70
J-22	1,537.44	228	1,701.23	71
J-23	1,537.08	20	1,701.39	71
J-24	1,536.80	20	1,701.43	71
J-25	1,536.94	20	1,701.50	71
J-26	1,536.91	20	1,701.56	71
J-27	1,538.52	0	1,702.06	71
J-28	1,536.38	20	1,701.43	71
J-29	1,537.89	22	1,701.49	71
J-30	1,534.99	232	1,701.23	72
J-31	1,535.22	0	1,701.31	72
J-32	1,535.46	20	1,701.33	72
J-33	1,535.90	20	1,701.36	72
J-34	1,535.05	22	1,701.40	72
J-35	1,535.00	20	1,701.36	72
J-36	1,534.86	20	1,701.33	72
J-37	1,535.80	0	1,701.70	72

Reservoir Table - Time: 0.00 hours

ID	Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
48	R-1	1,709.00	1,550	1,709.00

TES Eloy Parcel
Maximum Day Demand + Fire Flow
Fire Flow Results Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Fire Flow Required (gpm)	Flow (Total Needed) (gpm)	Flow (Total Available) (gpm)	Satisfies Fire Flow Constraints?	Residual Pressure Required (psi)	Residual Pressure (psi)	Junction w/ Minimum Pressure (Zone @ Total Flow Needed)	Pipe w/ Max Velocity	Velocity of Max Pipe (ft/s)
J-1	1,543.00	0	1,500	1,500	1,501	True	70	70	J-13	P-5	6.53
J-2	1,539.18	49	1,500	1,549	1,550	True	64	64	J-10	P-5	6.29
J-3	1,532.00	0	1	1	2	True	75	75	J-13	P-5	2.35
J-4	1,534.23	0	1,500	1,500	1,501	True	64	64	J-33	P-5	6.39
J-5	1,543.00	0	1,500	1,500	1,501	True	72	72	J-13	P-5	2.34
J-6	1,544.00	0	1,500	1,500	1,501	True	70	70	J-7	P-6	4.32
J-7	1,544.00	0	1,500	1,500	1,501	True	70	70	J-6	P-7	9.68
J-10	1,540.71	49	1,500	1,549	1,550	True	61	61	J-15	P-2(1)	6.35
J-11	1,531.44	36	1,500	1,536	1,537	True	23	23	J-3	P-14	7.83
J-13	1,542.55	0	1,500	1,500	1,501	True	68	68	J-10	P-5	6.44
J-14	1,540.62	48	1,500	1,548	1,549	True	64	64	J-10	P-1	6.73
J-15	1,537.49	133	1,500	1,632	1,634	True	45	45	J-11	P-14	8.71
J-16	1,539.18	133	1,500	1,632	1,634	True	64	64	J-17	P-5	6.35
J-17	1,539.37	11	1,000	1,011	1,012	True	68	68	J-21	P-5	5.02
J-18	1,539.38	11	1,000	1,011	1,012	True	67	67	J-21	P-5	5.03
J-19	1,539.72	13	1,000	1,012	1,013	True	68	68	J-21	P-5	5.04
J-20	1,541.21	0	1,500	1,500	1,501	True	66	66	J-21	P-5	6.40
J-21	1,539.88	12	1,000	1,012	1,013	True	67	67	J-17	P-5	5.03
J-22	1,537.44	130	1,500	1,630	1,631	True	64	64	J-23	P-5	6.39
J-23	1,537.08	11	1,000	1,011	1,012	True	68	68	J-29	P-5	5.04
J-24	1,536.80	11	1,000	1,011	1,012	True	68	68	J-29	P-5	5.04
J-25	1,536.94	11	1,000	1,011	1,012	True	68	68	J-29	P-5	5.04
J-26	1,536.91	11	1,500	1,511	1,512	True	64	64	J-29	P-5	6.39
J-27	1,538.52	0	1,000	1,000	1,001	True	68	68	J-20	P-5	5.05
J-28	1,536.38	11	1,500	1,511	1,512	True	63	63	J-29	P-5	6.39
J-29	1,537.89	13	1,500	1,512	1,513	True	63	63	J-28	P-5	6.39
J-30	1,534.99	133	1,500	1,632	1,634	True	63	63	J-31	P-5	6.39
J-31	1,535.22	0	1,500	1,500	1,501	True	63	63	J-32	P-5	6.39
J-32	1,535.46	11	1,000	1,011	1,012	True	67	67	J-33	P-5	5.04
J-33	1,535.90	11	1,000	1,011	1,012	True	67	67	J-32	P-5	5.04
J-34	1,535.05	13	1,000	1,012	1,013	True	68	68	J-33	P-5	5.04
J-35	1,535.00	11	1,000	1,011	1,012	True	68	68	J-33	P-5	5.04
J-36	1,534.86	11	1,000	1,011	1,012	True	68	68	J-33	P-5	5.04
J-37	1,535.80	0	1,500	1,500	1,501	True	64	64	J-33	P-5	6.39

APPENDIX B

Applicable Pages from COE Water,
Wastewater, and Reclaimed Water Master Plan,
2024



LEGEND

JUNCTION FUTURE DEMANDS

JUNCTION DEMANDS > 0

FUTURE PIPE DIAMETER

4"

6"

8"

10"

12"

16"

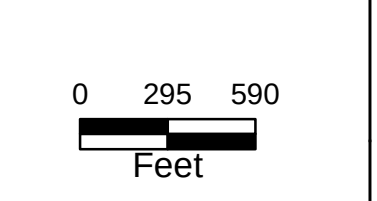
24"

36"

TOWNSHIP & RANGE

SECTION LINE

CITY OF ELOY
WATER, WASTEWATER AND RECLAIMED WATER
MASTER PLAN UPDATE
WATER MODEL KEY MAP
T7S R7E SECTION 36



APPENDIX I
MAR. 2024

ID	Label	Elevation (ft)	Pressure (psi)	Pressure Head (ft)	Demand (MGD)	Hydraulic Grade (ft)	Zone
2086	J-141	1513.86	74	170.85	0	1684.71	Zone - 2
2087	J-142	1513.87	74	170.84	0	1684.71	Zone - 2
2089	J-143	1516.32	73	168.12	0	1684.44	Zone - 2
2091	J-144	1573.25	69	158.95	0.0004	1732.21	Zone - 1
2093	J-145	1523.45	69	160.58	0	1684.03	Zone - 2
2095	J-146	1572.68	70	160.67	0	1733.36	Zone - 1
2097	J-147	1507.37	77	177.34	0	1684.71	Zone - 2
2099	J-148	1520.03	71	164.4	0	1684.43	Zone - 2
2101	J-149	1517.2	72	167.5	0	1684.7	Zone - 2
2102	J-150	1517.21	72	167.49	0	1684.7	Zone - 2
2104	J-151	1517.13	72	166.93	0.0013	1684.06	Zone - 2
2106	J-152	1488.87	85	195.62	0	1684.49	Zone - 2
2109	J-153	1557.83	65	151.18	0	1709.02	Zone - 1
2111	J-154	1517.64	72	167.04	0	1684.68	Zone - 2
2112	J-155	1517.64	72	167.03	0	1684.68	Zone - 2
2116	J-156	1557.18	66	151.8	0	1708.98	Zone - 1
2118	J-157	1566.45	64	147.45	0.0001	1713.91	Zone - 1
2120	J-158	1557.41	66	151.58	0.03	1708.99	Zone - 1
2122	J-159	1494.36	82	190.22	0	1684.58	Zone - 2
2124	J-160	1487.31	85	197.24	0	1684.55	Zone - 2
2126	J-161	1494.9	82	189.68	0	1684.58	Zone - 2
2128	J-162	1486.08	86	198.47	0	1684.55	Zone - 2
2130	J-163	1493.84	83	190.73	0	1684.57	Zone - 2
2132	J-164	1493.3	83	191.27	0	1684.57	Zone - 2
2134	J-165	1492.78	83	191.79	0	1684.57	Zone - 2
2136	J-166	1492.24	83	192.32	0	1684.56	Zone - 2
2138	J-167	1490.63	84	193.92	0	1684.56	Zone - 2
2140	J-168	1490	84	194.56	0	1684.55	Zone - 2
2142	J-169	1488.65	85	195.9	0	1684.55	Zone - 2
2144	J-170	1487.98	85	196.57	0	1684.55	Zone - 2
2146	J-171	1486.65	86	197.9	0	1684.55	Zone - 2
2148	J-172	1491.14	84	193.42	0	1684.56	Zone - 2
2150	J-173	1491.69	83	192.87	0	1684.56	Zone - 2
2152	J-174	1489.26	84	195.29	0	1684.55	Zone - 2
2154	J-175	1516.57	73	167.9	0	1684.47	Zone - 2
2157	J-176	1485.09	86	199.46	0	1684.55	Zone - 2
2159	J-177	1514.34	74	170.39	0	1684.73	Zone - 2
2161	J-178	1547.4	70	161.02	0.0015	1708.42	Zone - 1
2163	J-179	1521.77	70	162.81	0.0004	1684.58	Zone - 2
2165	J-180	1485.57	86	198.97	0	1684.55	Zone - 2
2167	J-181	1484.35	87	200.15	0	1684.49	Zone - 2
2172	J-184	1551.16	68	157.83	0.0034	1708.98	Zone - 1
2174	J-185	1525.28	69	159.55	0	1684.82	Zone - 2
2176	J-186	1514.99	73	169.74	0	1684.73	Zone - 2
2179	J-187	1562.92	64	147.9	0.0034	1710.81	Zone - 1
2181	J-188	1556.38	66	152.27	0.0023	1708.65	Zone - 1
2183	J-189	1485.04	86	199.45	0	1684.49	Zone - 2
2185	J-190	1551.75	68	157.23	0.0034	1708.98	Zone - 1
2187	J-191	1558.38	65	150.61	0.0004	1708.98	Zone - 1
2189	J-192	1573.27	69	158.94	0	1732.21	Zone - 1
2192	J-193	1543.24	72	165.69	0	1708.93	Zone - 1
2194	J-194	1485.65	86	198.85	0	1684.49	Zone - 2
2196	J-195	1521.54	71	163.04	0	1684.58	Zone - 2
2198	J-196	1553.37	67	155.26	0	1708.63	Zone - 1
2200	J-197	1514.33	74	170.01	0	1684.34	Zone - 2
2202	J-198	1555.4	66	153.59	0	1708.99	Zone - 1
2204	J-199	1513.61	74	170.57	0	1684.18	Zone - 2
2206	J-200	1548.09	69	160.56	0	1708.65	Zone - 1
2208	J-201	1551.47	68	157.51	0.0045	1708.98	Zone - 1
2210	J-202	1486.57	84	193.86	0	1680.43	Zone - 2
2212	J-203	1548.14	69	160.52	0	1708.66	Zone - 1
2214	J-204	1549.81	69	159.07	0	1708.87	Zone - 1
2217	J-205	1481.82	88	202.66	0	1684.49	Zone - 2
2218	J-206	1481.82	88	202.67	0	1684.49	Zone - 2
2223	J-208	1570.06	80	185.56	0	1755.61	Zone-0
2225	J-209	1521.52	71	163.07	0	1684.59	Zone - 2
2227	J-210	1557.86	65	151.16	0	1709.03	Zone - 1
2232	J-213	1548.43	69	160.15	0.0007	1708.58	Zone - 1
2235	J-214	1484.46	85	197.59	0	1682.05	Zone - 2
2237	J-215	1487.59	85	196.9	0	1684.5	Zone - 2
2239	J-216	1551.01	68	157.73	0	1708.73	Zone - 1
2241	J-217	1558.78	65	150.22	0	1709	Zone - 1
2246	J-220	1543.71	71	165.22	0	1708.93	Zone - 1
2247	J-221	1543.7	71	165.23	0	1708.93	Zone - 1