Hildale / Colorado City Utility Board

Wednesday, December 20, 2023 at 6:00 PM

320 East Newel Avenue, Hildale City, Utah 84784

Agenda

Notice is hereby given to the members of the Hildale/Colorado City Utility Board and the public, that the Board will hold a public meeting on **Wednesday, December 20, 2023 at 6:00 p.m. (MDT)**, at 320 East Newel Avenue, Hildale City, Utah 84784.

Board members may be participating electronically by video or telephone conference. The meeting will be broadcast to the public on Facebook Live under Hildale's City page. Members of the public may also watch the City of Hildale through the scheduled Zoom meeting.

https://www.facebook.com/hildalecity/live/

Join Zoom Meeting
https://zoom.us/j/95770171318?pwd=aUVSU0hRSFFHcGQvcUlPT3ZYK0p5UT09

Meeting ID: 957 7017 1318
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Comments during the public comment or public hearing portions of the meeting may be emailed to manager@hildalecity.com or privately messaged to Hildale City's Facebook page. All comments sent before the meeting may be read during the meeting and messages or emails sent during the meeting may be read at the Presiding Officers discretion.

Welcome, Introduction and Preliminary Matters: Presiding Officer

Roll Call of Board Attendees: Utility Administrative Assistant

Pledge of Allegiance: By Invitation of Presiding Officer

Organization of the Board: Presiding Officer

1. Introduction of James Broadbent as New Appointed Board Member.

Conflict of Interest Disclosures: Board Members

Approval of Minutes of Previous Meetings: Board Members

2. Utility Board Minutes of November 9, 2023.

Public Comments: (3 minutes each - Discretion of Presiding Officer)

Financial Report:

3. Approval of Utility Financial Report and Invoice Register

Reports:

4. Utility Director Report and Updates

5. Utility Monthly Report

Unfinished Board Business: None

New Board Business:

6. Consideration, discussion, and possible recommendation to City Councils concerning the Hildale-Colorado City Water Master Plan and Draft Impact Fee.

7. Consideration, discussion, and recommendation to City Council to initiate discussion concerning a request from Ash Creek Special Services District for the Mountain Valley Estates project to discuss a connection to the Hildale Lagoons.

8. Consideration, discussion, and possible recommendation to City Councils concerning inclusion of the Hildale/Colorado City Utilities as a potential recipient of class action litigation settlement funding from United States vs DuPont chemical.

9. Consideration, discussion, and possible recommendation to City Councils to approve Creekside Park Subdivision Preliminary Plat.

Board Comments: (10 minutes total)

Board members comments of issues not previously discussed in the meeting.

10. January 2024 Utility Board Calendar

Executive Session: As needed

Adjournment: Presiding Officer

Agenda items and any variables thereto are set for consideration, discussion, approval or other action. The Utility Board may, by motion, recess into executive session, which is not open to the public, to receive legal advice from their attorney(s) on any agenda item, or regarding sensitive personnel issues, or concerning negotiations for the purchase, sale, or lease of real property. Board Members may attend by telephone. The Agenda may be subject to change up to 24 hours prior to the meeting. Individuals needing special accommodations should notify the City Recorder at 435 874-2323 at least three days prior to the meeting.

Hildale / Colorado City Utility Board Meeting

Thursday, November 09, 2023 at 6:00 PM

320 East Newel Avenue, Hildale City, Utah 84784

Minutes

Welcome, Introduction and Preliminary Matters: Presiding Officer (Vice Chair Jesse Barlow)

Vice Chair Barlow called the meeting to order at 6:00 pm.

Roll Call of Board Attendees: Utility Administrative Assistant (Athena Cawley)

PRESENT
Chair Ezra Nielsen
Vice Chair Jesse Barlow
Board Member Sterling Jessop, Jr.
Board Member Theil Cooke

ABSENT
Board Member Rick White

Staff Present: Jerry Postema, Nathan Fischer, Athena Cawley

Public Present: Donia Jessop, Eric Duthie, Lawrence Barlow, JVar Dutson

Pledge of Allegiance: By Invitation of Presiding Officer (Vice Chair Jesse Barlow)

Vice Chair Barlow offered prayer and lead the pledge.

Organization of the Board: Presiding Officer (Vice Chair Jesse Barlow)

1. Induction of Ezra Nielsen as Chair of the Utility Board

   Vice Chair Barlow introduced and welcomed Ezra Nielsen as appointed by both city Mayor's as the new chair of the Utility Board. Chairman Nielsen requested Vice Chair Barlow to continue to conduct the meeting.

2. Introductions of Board Members and Staff

   Vice Chair Barlow introduced the Utility Administrative Staff. Chairman Nielsen expressed thanks to be able to work with the Utility Team.

Approval of Minutes of Previous Meetings: Board Members

3. Utility Board Minutes for September 12, 2023

   The board discussed the previous meeting minutes and Vice Chair Barlow entertained a motion.

   Motion made by Board Member Cooke, to approve the minutes for September 12, 2023. Seconded by Board Member Jessop, Jr..

   Voting Yea: Chair Nielsen, Board Member Jessop, Jr., Board Member Cooke, Board Member Barlow

   Motion Carried

Conflict of Interest Disclosures: Board Members

None were given.

Public Comments: (3 minutes each - Discretion of Presiding Officer)

Councilman Lawrence Barlow, Hildale, thanked the Board for their service to the community and gave gratitude for all their efforts and work.

Councilman JVar Dutson, Hildale, appreciates all efforts for having a meeting and explained to the board the importance of reviewing the IGA agreement. He expressed gratitude to Chairman Nielsen for agreeing to serve on the board.

Mayor Donia Jessop, Hildale, introduced the new appointed chair, Ezra Nielsen, to the board and thanked all the Board Members who have been serving all along. She thanked Chairman Nielsen for accepting the position.

Financial Report: Utility Administrators (Jerry Postema & Nathan Fischer 10 minutes)

4. Approval of Utility Financial Report and Invoice Register

   Superintendent Fischer presented the financial report and invoice register, explaining the Utility Enterprise Funds (Gas, Sewer, Water) and how they operate with the Joint Utility Expense Fund. He highlighted the Sewer Headworks project that is in progress. Chairman Nielsen questioned the dates of the report and accounting methods. Director Postema suggested the board review the FY22 audited financials recently presented to City Council by the auditor. He will provide that information to the board next meeting.

   Motion made by Board Member Cooke, to approve the financial reports and invoice register. Seconded by Chair Nielsen.

   Voting Yea: Chair Nielsen, Board Member Jessop, Jr., Board Member Cooke, Board Member Barlow

   Motion Carried.

Reports: Utility Administrators (Jerry Postema & Nathan Fischer 10 minutes)

5. Utility Director Report and Updates

   Utility Director Postema presented. He asked to discuss the Cluff Drilling estimate of the pump for Well#17 in addition to the packet. He spoke about the estimate not being part of the original agreement with Cluff Drilling. He recommended approval to add this to the next meeting agenda for discussion and consideration.

   Vice Chair Barlow opened the floor for comments from the board. Utility Director Postema answered questions the board had about the need for the well and how the cost would come from the water operation fund. Superintendent Fischer gave details of the replacement Well#17 and the promising water output for the current system. The board were all in favor of directing staff to move forward in researching more quotes and bring back for recommendation of approval next meeting.

6. Utility Monthly Report

   Superintendent Fischer presented the Utility report covering the Gas Operations, Sewer Lagoons, Sewer Headworks project, Water Operations and Fiber Connections. He highlighted on the Smart

Cover System that was purchase for the Sewer Lift Station that will provide an early alarm warning to the utility staff for potential malfunctions.

Utility Director Postema presented on grants and administration. The draft Water Master Plan and Impact Fees has been substantially completed and turned over to the DOJ to be reviewed. It's projected to be reviewed by the Councils and Utility Board in December. Administrative staff is working on a rate study for water and it is being done by Rural Community Assistance Corporation, which is 100% funded by USDA. We are seeking funding from Water Infrastructure Finance Authority Board (WIFA) for the work to be done on the 600,00 gallon and 800,000 gallon water tanks which will be done through Arizona. A request has been submitted to TOCC for the drilling of 2 wells in replacement of the raw water line that collects 8 wells and brings it to the Water Treatment Plant to be covered by American Recovery Plan Act (ARPA) Funds of Arizona.

Vice Chair Barlow questioned the 600,000 gallon and 800,000 gallon water tanks project for the WIFA Grant. Utility Director Postema gave a 6-10 month projection of timeline for the project.

Unfinished Board Business: None

New Board Business: Utility Director (Jerry Postema)

7. Consideration, discussion, and possible recommendation of applications for New Development and Rezoning.

   Utility Director presented that in the IGA agreement effective as of June 2022 the board is responsible to review new zoning and construction that involves Utilities. Once reviewed it is then recommended to the City Councils for approval. At this time there is no rezone to approve.

8. Consideration, discussion, and possible recommendation of Centennial Park on Future Partnering for Sewer Treatment

   Utility Director presented a letter from Centennial Park Sewer District explaining backup sewer in their systems. The Sewer Lift Station had a malfunction with the pumps and did overflow. The Smart Cover System recently installed will help notify Utility staff earlier before overflow happens again. There are several reasons and causes that can cause sewer overflow, which will need to be addressed with Centennial Parks system to work through current issues and prevent future damage. Utility Director Postema recommended the board approve Administrative Staff have future discussion with Centennial Park to address these concerns.

   The board had questions and discussion of the current agreement with Centennial Park. Utility Director Postema gave clarification of how the billing is done and that they are charged same rate as Colorado City and Hildale customers. After discussion from the board, then Vice Chair Barlow asked the board if they were all in favor of approving staff to have discussion with Centennial Park and bring forward more information. All were in favor.

Board Comments: (10 minutes total)

Board members comments of issues not previously discussed in the meeting.

Chairman Nielsen expressed gratitude for being a part of the Utility Board and thanked the Utility Staff for all their hard work.

Vice Chair Barlow thanked the Mayors for the appointment of Ezra Nielsen as the new chair of the Utility Board and all staff for their efforts.

Utility Director Postema requested the board set a schedule for monthly meetings. After discussion between the board, it was decided to set the future meetings to the 4th Thursday of each month at 6:00 pm.

The board discussed with Administrative Staff when to hold the December meeting to not conflict with holidays and meeting schedules in the chamber. Mayor Jessop and City Manager Duthie gave input. The board agreed to schedule the next meeting for December 20th at 6pm in Hildale City's conference room because court possibly will be using the chamber during that time.

Executive Session: As needed

None

Adjournment: Presiding Officer

Vice Chair Barlow adjourned the meeting at 7:08 pm

Minutes were approved at the Utility Board Meeting _____.

_____ _____

Sirrene Barlow, City Recorder Rosie White, Town Clerk

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

2017 JUDGMENT RESOLUTION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	REVENUES					
63-38-101	TRANSFER FROM GENERAL FUND	.00	.00	24,000.00	24,000.00	.0
63-38-102	TRANSFER FROM WATER FUND	.00	.00	8,000.00	8,000.00	.0
63-38-103	TRANSFER FROM WASTEWATER	.00	.00	8,000.00	8,000.00	.0
63-38-105	TRANSFER FROM GAS FUND	.00	.00	8,000.00	8,000.00	.0
	TOTAL REVENUES	.00	.00	48,000.00	48,000.00	.0
	TOTAL FUND REVENUE	.00	.00	48,000.00	48,000.00	.0

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

2017 JUDGMENT RESOLUTION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
63-41-310	PROFESSIONAL & TECHNICAL	5,990.52	19,042.16	28,000.00	8,957.84	68.0
63-41-315	LEGAL - GENERAL	.00	.00	20,000.00	20,000.00	.0
	TOTAL EXPENDITURES	5,990.52	19,042.16	48,000.00	28,957.84	39.7
	TOTAL FUND EXPENDITURES	5,990.52	19,042.16	48,000.00	28,957.84	39.7
	NET REVENUE OVER EXPENDITURES	(5,990.52)	(19,042.16)	.00	19,042.16	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

JOINT ADMINISTRATION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	REVENUES					
65-38-102	TRANSFER FROM WATER FUND	.00	.00	717,270.00	717,270.00	.0
65-38-103	TRANSFER FROM WASTEWATER	.00	.00	925,730.00	925,730.00	.0
65-38-105	TRANSFER FROM GAS FUND	.00	.00	21,304.00	21,304.00	.0
65-38-910	LANDFILL REVENUES	2,000.00	10,000.00	20,000.00	10,000.00	50.0
65-38-915	GARKANE SERVICES	.00	.00	12,000.00	12,000.00	.0
	TOTAL REVENUES	2,000.00	10,000.00	1,696,304.00	1,686,304.00	.6
	TOTAL FUND REVENUE	2,000.00	10,000.00	1,696,304.00	1,686,304.00	.6

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

JOINT ADMINISTRATION FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	EXPENDITURES					
65-41-110	SALARIES-PERMANENT EMPLOYEES	43,453.01	196,937.79	757,994.00	561,056.21	26.0
65-41-113	MANAGER	2,524.62	10,098.48	97,388.00	87,289.52	10.4
65-41-114	TREASURER	3,824.46	19,455.88	55,654.00	36,198.12	35.0
65-41-115	RECORDER	2,876.00	9,869.00	37,330.00	27,461.00	26.4
65-41-120	SALARIES-TEMPORARY EMPLOYEES	3,105.24	14,345.71	103,024.00	88,678.29	13.9
65-41-130	PAYROLL TAXES	3,617.95	16,957.42	81,600.00	64,642.58	20.8
65-41-140	BENEFITS-OTHER	8,170.29	38,540.70	123,900.00	85,359.30	31.1
65-41-144	PRINT AND POSTAGE	588.00	5,079.72	20,000.00	14,920.28	25.4
65-41-145	AUDITOR	.00	24,433.50	20,000.00	(4,433.50)	122.2
65-41-150	STIPENDS - UTILITY BOARD	300.00	1,100.00	3,000.00	1,900.00	36.7
65-41-160	MERCHANT PROCESSING	.00	.00	1,000.00	1,000.00	.0
65-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	103.00	1,545.31	4,200.00	2,654.69	36.8
65-41-230	TRAVEL	.00	1,090.41	3,000.00	1,909.59	36.4
65-41-235	FOOD & REFRESHMENT	190.89	1,625.41	3,000.00	1,374.59	54.2
65-41-240	OFFICE EXPENSE & SUPPLIES	90.00	557.07	3,000.00	2,442.93	18.6
65-41-242	SERVICE FEES	512.54	2,487.60	1,000.00	(1,487.60)	248.8
65-41-250	EQUIPMENT SUPPLIES & MAINT	4,341.70	11,386.60	13,500.00	2,113.40	84.4
65-41-257	FUEL	3,018.44	11,623.23	39,700.00	28,076.77	29.3
65-41-260	TOOLS & EQUIPMENT-NON CAPITAL	687.28	6,707.54	10,000.00	3,292.46	67.1
65-41-271	MAINT & SUPPLY - OFFICE	660.34	2,704.83	5,000.00	2,295.17	54.1
65-41-280	UTILITIES	576.80	2,086.59	23,514.00	21,427.41	8.9
65-41-285	POWER	838.96	3,647.19	27,000.00	23,352.81	13.5
65-41-287	TELEPHONE	969.59	4,880.74	12,000.00	7,119.26	40.7
65-41-310	PROFESSIONAL & TECHNICAL	7,041.23	28,277.96	40,000.00	11,722.04	70.7
65-41-313	AUDITOR	1,172.50	14,070.00	20,000.00	5,930.00	70.4
65-41-315	LEGAL - GENERAL	.00	.00	4,000.00	4,000.00	.0
65-41-317	INFORMATION TECHNOLOGY - CONS	.00	.00	25,000.00	25,000.00	.0
65-41-318	INFORMATION TECHNOLOGY - SOFTW	5,161.11	25,782.75	27,000.00	1,217.25	95.5
65-41-319	INFORMATION TECHNOLOGY - SYSTE	.00	.00	10,000.00	10,000.00	.0
65-41-330	EDUCATION	.00	.00	10,000.00	10,000.00	.0
65-41-510	INSURANCE	598.35	100,499.40	85,500.00	(14,999.40)	117.5
65-41-521	CREDIT CARD EXPENSE	295.56	6,126.67	.00	(6,126.67)	.0
65-41-580	RENT OR LEASE	1,034.90	2,069.80	10,000.00	7,930.20	20.7
65-41-620	MISC. SERVICES	(6.38)	12,655.76	.00	(12,655.76)	.0
65-41-720	BUILDINGS	.00	450.00	3,000.00	2,550.00	15.0
65-41-741	EQUIPMENT - OFFICE	.00	485.29	5,000.00	4,514.71	9.7
65-41-850	DEBT SERVICE - VEHICLE & EQUIP	.00	.00	11,000.00	11,000.00	.0
65-41-900	AUTOMATIC PAYMENT INCENTIVE	200.00	.00	.00	.00	.0
	TOTAL EXPENDITURES	95,946.38	577,578.35	1,696,304.00	1,118,725.65	34.1
	TOTAL FUND EXPENDITURES	95,946.38	577,578.35	1,696,304.00	1,118,725.65	34.1
	NET REVENUE OVER EXPENDITURES	(93,946.38)	(567,578.35)	.00	567,578.35	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
81-37-111	WATER SALES - METERED	21,002.40	198,193.60	495,930.00	297,736.40	40.0
81-37-121	WATER SALES - FLAT RATE	38,727.30	191,339.35	459,870.00	268,530.65	41.6
81-37-160	CONSTRUCTION REVENUE	.00	.00	5,000.00	5,000.00	.0
81-37-331	CONNECTION CHARGES	2,410.00	19,530.00	40,000.00	20,470.00	48.8
81-37-332	CONSTRUCTION & REPAIR	275.60	475.60	89,600.00	89,124.40	.5
81-37-351	SUNDRY OPERATING REVENUE	.00	.00	20,000.00	20,000.00	.0
81-37-411	INTEREST	.00	11,569.39	22,000.00	10,430.61	52.6
81-37-412	PENALTIES	4,182.41	21,005.78	60,000.00	38,994.22	35.0
	TOTAL OPERATING REVENUES	66,597.71	442,113.72	1,192,400.00	750,286.28	37.1
	NON-OPERATING REVENUE					
81-38-102	TRANSFERS FROM R&R RESERVE	.00	.00	150,000.00	150,000.00	.0
81-38-361	LOAN PROCEEDS	.00	.00	460,000.00	460,000.00	.0
81-38-999	CONTINGENCY	.00	.00	400,000.00	400,000.00	.0
	TOTAL NON-OPERATING REVENUE	.00	.00	1,010,000.00	1,010,000.00	.0
	TOTAL FUND REVENUE	66,597.71	442,113.72	2,202,400.00	1,760,286.28	20.1

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
81-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	.00	.00	3,000.00	3,000.00	.0
81-41-230	TRAVEL	.00	.00	5,000.00	5,000.00	.0
81-41-235	FOOD & REFRESHMENT	.00	.00	1,000.00	1,000.00	.0
81-41-250	EQUIPMENT SUPPLIES & MAINT	512.10	512.10	5,000.00	4,487.90	10.2
81-41-257	FUEL	.00	.00	400.00	400.00	.0
81-41-260	TOOLS & EQUIPMENT-NON CAPITAL	.00	127.28	10,000.00	9,872.72	1.3
81-41-273	MAINT & SUPPLY - SYSTEM	3,366.49	85,169.14	177,700.00	92,530.86	47.9
81-41-285	POWER	9,009.81	62,684.64	20,800.00	(41,884.64)	301.4
81-41-311	ENGINEER	19,935.00	33,655.00	40,100.00	6,445.00	83.9
81-41-314	LABORATORY & TESTING	71.73	2,061.61	12,500.00	10,438.39	16.5
81-41-315	LEGAL - GENERAL	.00	.00	1,300.00	1,300.00	.0
81-41-330	EDUCATION	.00	1,230.00	3,500.00	2,270.00	35.1
81-41-340	SYSTEM CONSTRUCTION SERVICES	.00	17,885.96	33,830.00	15,944.04	52.9
81-41-341	CONST-CUSTOMER'S INSTALLATION	.00	3,709.13	5,000.00	1,290.87	74.2
81-41-432	SPECIAL DEPT SUPPLIES	.00	5,418.47	23,000.00	17,581.53	23.6
	TOTAL OPERATING EXPENDITURES	32,895.13	212,453.33	342,130.00	129,676.67	62.1
	NON-OPERATING EXPENDITURES					
81-42-560	BAD DEBT EXPENSE	.00	.00	7,000.00	7,000.00	.0
81-42-730	IMPROVEMENTS OTHER THAN BLDGS	.00	.00	7,000.00	7,000.00	.0
81-42-742	EQUIPMENT - FIELD	.00	.00	1,000.00	1,000.00	.0
81-42-750	SP PROJECTS CAPITAL	.00	.00	460,000.00	460,000.00	.0
81-42-780	RESERVE PURCHASES	.00	.00	150,000.00	150,000.00	.0
81-42-815	PRINC. & INT W.RIGHTS LOAN	.00	.00	61,300.00	61,300.00	.0
81-42-911	TRANSFERS TO JOINT ADMIN FUND	.00	.00	717,270.00	717,270.00	.0
81-42-912	TRANSFERS TO LITIGATION	.00	.00	12,000.00	12,000.00	.0
81-42-914	TRANSFERS TO 2017 JMT RES FUND	.00	.00	8,000.00	8,000.00	.0
81-42-960	TRANSFERS TO RESERVE FUNDS	.00	.00	36,700.00	36,700.00	.0
81-42-999	CONTINGENCY	.00	.00	400,000.00	400,000.00	.0
	TOTAL NON-OPERATING EXPENDITURES	.00	.00	1,860,270.00	1,860,270.00	.0
	TOTAL FUND EXPENDITURES	32,895.13	212,453.33	2,202,400.00	1,989,946.67	9.7
	NET REVENUE OVER EXPENDITURES	33,702.58	229,660.39	.00	(229,660.39)	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

WASTEWATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
82-37-160	CONSTRUCTION REVENUE	.00	.00	10,000.00	10,000.00	.0
82-37-311	SERVICE CHARGES	69,864.25	349,926.61	804,470.00	454,543.39	43.5
82-37-312	SERVICE CHARGES - CPMCWID	16,176.80	80,334.88	196,000.00	115,665.12	41.0
82-37-331	CONNECTION CHARGES	.00	.00	11,530.00	11,530.00	.0
82-37-332	SERVICING CUSTOMER INSTALL	800.00	3,365.00	10,000.00	6,635.00	33.7
82-37-411	INTEREST	.00	16,603.73	30,000.00	13,396.27	55.4
82-37-451	IMPACT FEE	.00	21,000.00	600,000.00	579,000.00	3.5
82-37-452	IMPACT FEE - CPMCWID	3,000.00	604,925.00	48,500.00	(556,425.00)	1247.3
	TOTAL OPERATING REVENUES	89,841.05	1,076,155.22	1,710,500.00	634,344.78	62.9
	NON-OPERATING REVENUES					
82-38-102	TRANSFERS FROM R&R RESERVE	.00	.00	120,000.00	120,000.00	.0
82-38-361	LOAN PROCEEDS	.00	.00	500,000.00	500,000.00	.0
82-38-440	SUNDRY NON-OPERATING REVENUE	.00	.00	1,000.00	1,000.00	.0
82-38-999	CONTINGENCY	.00	.00	400,000.00	400,000.00	.0
	TOTAL NON-OPERATING REVENUES	.00	.00	1,021,000.00	1,021,000.00	.0
	TOTAL FUND REVENUE	89,841.05	1,076,155.22	2,731,500.00	1,655,344.78	39.4

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

WASTEWATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
82-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	.00	.00	3,000.00	3,000.00	.0
82-41-230	TRAVEL	.00	77.06	8,400.00	8,322.94	.9
82-41-235	FOOD & REFRESHMENT	.00	.00	600.00	600.00	.0
82-41-250	EQUIPMENT SUPPLIES & MAINT	.00	.00	3,000.00	3,000.00	.0
82-41-257	FUEL	266.73	1,265.63	5,400.00	4,134.37	23.4
82-41-260	TOOLS & EQUIPMENT-NON CAPITAL	.00	.00	3,500.00	3,500.00	.0
82-41-273	MAINTENANCE & SUPPLY - SYSTEM	.00	7,325.18	131,000.00	123,674.82	5.6
82-41-274	MAINT & SUPPLY EQUIPMENT	.00	.00	71,670.00	71,670.00	.0
82-41-285	POWER	6,609.65	29,358.55	38,000.00	8,641.45	77.3
82-41-311	ENGINEER	.00	4,539.25	58,000.00	53,460.75	7.8
82-41-314	LABORATORY & TESTING	.00	.00	3,000.00	3,000.00	.0
82-41-315	LEGAL - GENERAL	.00	.00	2,500.00	2,500.00	.0
82-41-330	EDUCATION	.00	.00	5,300.00	5,300.00	.0
82-41-340	SYSTEM CONSTRUCTION SERVICES	57,967.05	184,422.18	540,000.00	355,577.82	34.2
82-41-341	CONST-CUSTOMER'S INSTALLATION	.00	.00	10,000.00	10,000.00	.0
	TOTAL OPERATING EXPENDITURES	64,843.43	226,987.85	883,370.00	656,382.15	25.7
	NON-OPERATING EXPENSES					
82-42-560	BAD DEBT EXPENSE	.00	.00	10,000.00	10,000.00	.0
82-42-710	LAND	.00	.00	100,000.00	100,000.00	.0
82-42-720	BUILDINGS	.00	.00	30,000.00	30,000.00	.0
82-42-742	EQUIPMENT - FIELD	.00	.00	30,000.00	30,000.00	.0
82-42-750	SP PROJECTS CAPITAL	58,562.37	123,381.52	.00	(123,381.52)	.0
82-42-780	RESERVE PURCHASES	.00	.00	230,000.00	230,000.00	.0
82-42-812	PRINCIPAL ON BONDS - RDA B	.00	.00	35,000.00	35,000.00	.0
82-42-822	INTEREST ON BONDS - RDA - B	.00	.00	40,000.00	40,000.00	.0
82-42-911	TRANSFERS TO JOINT ADMIN FUND	.00	.00	925,730.00	925,730.00	.0
82-42-912	TRANSFERS TO LITIGATION	.00	.00	12,000.00	12,000.00	.0
82-42-914	TRANSFERS TO 2017 JMT RES FUND	.00	.00	8,000.00	8,000.00	.0
82-42-960	TRANSFERS TO RESERVE FUNDS	.00	.00	134,400.00	134,400.00	.0
82-42-990	APPROPRIATION FOR FUND BALANCE	.00	.00	130,000.00	130,000.00	.0
82-42-999	CONTINGENCY	.00	.00	163,000.00	163,000.00	.0
	TOTAL NON-OPERATING EXPENSES	58,562.37	123,381.52	1,848,130.00	1,724,748.48	6.7
	TOTAL FUND EXPENDITURES	123,405.80	350,369.37	2,731,500.00	2,381,130.63	12.8
	NET REVENUE OVER EXPENDITURES	(33,564.75)	725,785.85	.00	(725,785.85)	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

GAS FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
84-37-111	GAS SALES - METERED NAT GAS	47,380.73	97,517.79	800,000.00	702,482.21	12.2
84-37-112	GAS SALES - METERED PROPANE	22,301.48	78,069.35	796,069.00	717,999.65	9.8
84-37-113	GAS SALES - CYLINDER	1,210.69	1,921.74	8,700.00	6,778.26	22.1
84-37-114	GAS SALES - CYLINDER EXCHANGE	107.28	287.24	3,700.00	3,412.76	7.8
84-37-121	NATURAL GAS SALES - FLAT RATE	3,093.25	15,645.97	38,000.00	22,354.03	41.2
84-37-122	PROPANE GAS - FLAT RATE	4,086.00	20,392.60	64,000.00	43,607.40	31.9
84-37-160	CONSTRUCTION REVENUE	9,135.83	20,560.53	100,000.00	79,439.47	20.6
84-37-331	CONNECTION CHARGES	535.00	1,765.00	8,000.00	6,235.00	22.1
84-37-351	SUNDRY OPERATING REVENUE	.00	.00	47,000.00	47,000.00	.0
84-37-411	INTEREST	.00	11,041.74	25,000.00	13,958.26	44.2
84-37-412	PENALTIES	1,232.67	5,930.39	19,000.00	13,069.61	31.2
	TOTAL OPERATING REVENUES	89,082.93	253,132.35	1,909,469.00	1,656,336.65	13.3
	NON-OPERATING REVENUES					
84-38-102	TRANSFERS FROM R&R RESERVE	.00	.00	175,030.00	175,030.00	.0
84-38-316	INTRAGOVERNMENTAL GRANTS	.00	.00	250,000.00	250,000.00	.0
84-38-999	CONTINGENCY	.00	.00	400,000.00	400,000.00	.0
	TOTAL NON-OPERATING REVENUES	.00	.00	825,030.00	825,030.00	.0
	TOTAL FUND REVENUE	89,082.93	253,132.35	2,734,499.00	2,481,366.65	9.3

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

GAS FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
84-41-140	BENEFITS-OTHER	.00	.00	3,000.00	3,000.00	.0
84-41-210	BOOKS, SUBSCR, & MEMBERSHIPS	200.00	837.24	2,000.00	1,162.76	41.9
84-41-230	TRAVEL	.00	.00	5,000.00	5,000.00	.0
84-41-235	FOOD & REFRESHMENT	.00	.00	500.00	500.00	.0
84-41-250	EQUIPMENT SUPPLIES & MAINT	.00	39.98	5,000.00	4,960.02	.8
84-41-257	FUEL	230.99	834.23	3,500.00	2,665.77	23.8
84-41-260	TOOLS & EQUIPMENT-NON CAPITAL	.00	.00	8,000.00	8,000.00	.0
84-41-273	MAINT & SUPPLY SYSTEM	1,033.69	28,717.89	64,500.00	35,782.11	44.5
84-41-280	UTILITIES	18.26	64.72	.00	(64.72)	.0
84-41-285	POWER	81.33	333.81	2,000.00	1,666.19	16.7
84-41-311	ENGINEER	.00	.00	2,000.00	2,000.00	.0
84-41-315	LEGAL - GENERAL	.00	.00	2,000.00	2,000.00	.0
84-41-330	EDUCATION	.00	3,606.90	6,200.00	2,593.10	58.2
84-41-340	SYSTEM CONSTRUCTION SERVICES	8,351.23	11,425.53	13,600.00	2,174.47	84.0
84-41-341	CONST-CUSTOMER'S INSTALLATION	.00	496.33	40,000.00	39,503.67	1.2
84-41-431	NATURAL GAS COMMODITY SUPPLY	15,890.19	24,351.84	561,100.00	536,748.16	4.3
84-41-432	PROPANE GAS COMMODITY SUPPLY	16,003.43	18,057.28	626,500.00	608,442.72	2.9
84-41-434	NAT GAS COMMODITY TRANSPORT	2,130.49	5,339.09	27,700.00	22,360.91	19.3
84-41-510	INSURANCE	2,568.55	12,842.75	.00	(12,842.75)	.0
84-41-580	RENT OR LEASE	100.00	400.00	4,900.00	4,500.00	8.2
84-41-610	MISC. SUPPLIES	.00	.00	5,000.00	5,000.00	.0
	TOTAL OPERATING EXPENDITURES	46,608.16	107,347.59	1,382,500.00	1,275,152.41	7.8
	NON-OPERATING EXPENDITURES					
84-42-560	BAD DEBT EXPENSE	.00	.00	6,000.00	6,000.00	.0
84-42-710	LAND	.00	.00	5,000.00	5,000.00	.0
84-42-750	SP PROJECTS CAPITAL	.00	.00	278,700.00	278,700.00	.0
84-42-780	RESERVE PURCHASES	.00	.00	122,000.00	122,000.00	.0
84-42-911	TRANSFERS TO JOINT ADMIN FUND	.00	.00	470,730.00	470,730.00	.0
84-42-912	TRANSFERS TO LITIGATION	.00	.00	12,000.00	12,000.00	.0
84-42-914	TRANSFERS TO 2017 JMT RES FUND	.00	.00	8,000.00	8,000.00	.0
84-42-960	TRANSFERS TO RESERVE FUNDS	.00	.00	105,400.00	105,400.00	.0
84-42-999	CONTINGENCY	.00	.00	344,169.00	344,169.00	.0
	TOTAL NON-OPERATING EXPENDITURES	.00	.00	1,351,999.00	1,351,999.00	.0
	TOTAL FUND EXPENDITURES	46,608.16	107,347.59	2,734,499.00	2,627,151.41	3.9
	NET REVENUE OVER EXPENDITURES	42,474.77	145,784.76	.00	(145,784.76)	.0

CITY OF HILDALE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

90 FUND HILDALE CITY FIBER DEP

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUES					
90-37-111	FIBER SALES	462.69	2,313.45	.00	(2,313.45)	.0
90-37-412	PENALTIES	6.25	19.40	.00	(19.40)	.0
	TOTAL OPERATING REVENUES	468.94	2,332.85	.00	(2,332.85)	.0
	NON-OPERATING REVENUES					
90-38-999	CONTINGENCY	.00	.00	125,113.00	125,113.00	.0
	TOTAL NON-OPERATING REVENUES	.00	.00	125,113.00	125,113.00	.0
	TOTAL FUND REVENUE	468.94	2,332.85	125,113.00	122,780.15	1.9

CITY OF HILDALE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 5 MONTHS ENDING NOVEMBER 30, 2023

90 FUND HILDALE CITY FIBER DEP

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING EXPENDITURES					
90-41-580	RENT OR LEASE	100.00	500.00	.00	(500.00)	.0
	TOTAL OPERATING EXPENDITURES	100.00	500.00	.00	(500.00)	.0
	NON-OPERATING EXPENDITURES					
90-42-999	CONTINGENCY	.00	.00	125,113.00	125,113.00	.0
	TOTAL NON-OPERATING EXPENDITURES	.00	.00	125,113.00	125,113.00	.0
	TOTAL FUND EXPENDITURES	100.00	500.00	125,113.00	124,613.00	.4
	NET REVENUE OVER EXPENDITURES	368.94	1,832.85	.00	(1,832.85)	.0

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
AARDVARK UNDERGROUND, INC. (5741)							
2976	HEADWORKS BUILDING 70% SPLIT	10/25/2023	11/30/2023	23,912.00	11/23	0	82-41-340
2976	HEADWORKS BUILDING 30% SPLIT	10/25/2023	11/30/2023	10,248.00	11/23	0	82-42-750
2977	Sewer Impact Fee - Base Bid Items	10/25/2023	11/30/2023	11,167.50	11/23	0	82-42-750
2977	Sewer Impact Fee - Alternate Bid Items	10/25/2023	11/30/2023	33,816.00	11/23	0	82-42-750
2977	System Construction	10/25/2023	11/30/2023	26,057.50	11/23	0	82-41-340
Total AARDVARK UNDERGROUND, INC. (5741):				105,201.00			
BLACK TIE PRESS (5697)							
1265	CHECKS ZIONS BANK 60% UTILITIES	11/07/2023	11/30/2023	90.00	11/23	0	65-41-240
Total BLACK TIE PRESS (5697):				90.00			
BUCKS ACE HARDWARE (5356)							
349839	GAS DEPT - PAINT FOR TANKS	09/28/2023	10/31/2023	256.63	10/23	0	84-41-273
Total BUCKS ACE HARDWARE (5356):				256.63			
CASELLE, INC. (1430)							
128259	CONTRACT FOR DECEMBER 23- 90% UTILITIES - SPLIT DISTRIBUTION	11/01/2023	12/01/2023	1,167.30	11/23	0	65-41-318
Total CASELLE, INC. (1430):				1,167.30			
CATALYST CONSTRUCTION (5712)							
150	Fiber Server Office Rent	11/01/2023	11/30/2023	100.00	11/23	0	90-41-580
Total CATALYST CONSTRUCTION (5712):				100.00			
CHEMTECH-FORD LABORATORIES, INC. (1481)							
23J2343	Water Tests	11/08/2023	12/08/2023	51.00	11/23	0	81-41-314
Total CHEMTECH-FORD LABORATORIES, INC. (1481):				51.00			
CUSTOMER DEPOSIT (5518)							
3088002 102	3088002 CUSTOMER DEPOSIT REFUND	10/26/2023	10/31/2023	28.21	10/23	0	81-21350
3860013 103	3860013 CUSTOMER DEPOSIT REFUND	10/30/2023	10/31/2023	645.00	10/23	0	81-21350
6198004 102	6198004 CUSTOMER DEPOSIT REFUND	10/26/2023	10/31/2023	186.26	10/23	0	81-21350
3047006 103	3047006 CUSTOMER DEPOSIT REFUND	10/30/2023	10/31/2023	171.50	10/23	0	81-21350
3387003 103	3387003 CUSTOMER DEPOSIT REFUND	10/30/2023	10/31/2023	47.73	10/23	0	81-21350
6459910 103	6459910 CUSTOMER DEPOSIT REFUND	10/30/2023	10/31/2023	654.35	10/23	0	81-21350
3009018 103	3009018 CUSTOMER DEPOSIT REFUND	10/30/2023	11/30/2023	33.64	11/23	0	81-21350
3460600 100	3460600 CUSTOMER DEPOSIT REFUND	10/03/2023	11/30/2023	88.21	11/23	0	81-21350
Total CUSTOMER DEPOSIT (5518):				1,854.90			
DELCO WESTERN (4528)							
23-2393	WATER PLANT PUMPS	11/06/2023	12/06/2023	1,487.40	11/23	0	81-41-273
232405	CONTACTOR FOR Well #4	11/07/2023	12/07/2023	494.00	11/23	0	81-41-250
232405	FREIGHT	11/07/2023	12/07/2023	18.10	11/23	0	81-41-250
23-2440	WATER PLANT PUMPS	11/10/2023	12/10/2023	434.85	11/23	0	81-41-273
23-2485	WATER PLANT PUMPS	11/15/2023	12/15/2023	452.00	11/23	0	81-41-273
Total DELCO WESTERN (4528):				2,886.35			
DJB GAS SERVICES, INC. (4750)							
01466426	WELDER Cylinder Rental	10/31/2023	11/30/2023	29.92	11/23	0	65-41-250

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total DJB GAS SERVICES, INC. (4750):				29.92			
DOMINION ENERGY (5607)							
5948550000-	Natural Gas Commodity	11/03/2023	11/30/2023	2,130.49	11/23	0	84-41-434
Total DOMINION ENERGY (5607):				2,130.49			
EXECUTECH UTAH, INC. (5553)							
30666	OFFICE 365 G3 GCC (GOVERNMENT) 70% SPLIT	10/31/2023	11/30/2023	661.35	11/23	0	65-41-318
30679	IT MANAGEMENT SERVICES 70% SPLIT	11/01/2023	11/30/2023	2,625.00	11/23	0	65-41-318
Total EXECUTECH UTAH, INC. (5553):				3,286.35			
GARKANE ENERGY (5057)							
1709902-112	Power Plant Well Power	11/15/2023	11/30/2023	42.85	11/23	0	81-41-285
1717500-112	CENTENNIAL PARK LIFT STATION	11/22/2023	11/30/2023	739.20	11/23	0	82-41-285
1734500-112	EAST WATER TANKS	11/22/2023	11/30/2023	56.27	11/23	0	81-41-285
1763000-112	SPRINKLER PUMP STATION	11/15/2023	11/30/2023	1,571.13	11/23	0	82-41-285
1763900-112	SEWER HEADWORKS POWER	11/15/2023	11/30/2023	4,299.32	11/23	0	82-41-285
1768100-112	Well #8 POWER	11/22/2023	11/30/2023	92.96	11/23	0	81-41-285
1772300-112	Well #10 POWER	11/22/2023	11/30/2023	63.19	11/23	0	81-41-285
1772400-112	Well #4 POWER	11/22/2023	11/30/2023	273.96	11/23	0	81-41-285
1772500-112	CITY HALL POWER 67%	11/15/2023	11/30/2023	264.46	11/23	0	65-41-285
1775500-112	WATER PLANT POWER	11/22/2023	11/30/2023	2,705.63	11/23	0	81-41-285
1780600-112	Well #19 POWER	11/22/2023	11/30/2023	727.55	11/23	0	81-41-285
1781000-112	WELL #17 POWER	11/22/2023	11/30/2023	33.18	11/23	0	81-41-285
1782300-112	LAB SHOP POWER	11/15/2023	11/30/2023	574.50	11/23	0	65-41-285
1782501-112	WELL #22 POWER	11/15/2023	11/30/2023	1,134.97	11/23	0	81-41-285
1787300-112	Propane Yard Power	11/15/2023	11/30/2023	81.33	11/23	0	84-41-285
1793900-112	Million Gallon Tank Power	11/15/2023	11/30/2023	44.42	11/23	0	81-41-285
1945500-112	ACADEMY AVE WELL POWER	11/22/2023	11/30/2023	2,914.76	11/23	0	81-41-285
2026700-112	WELL #21 POWER	11/22/2023	11/30/2023	920.07	11/23	0	81-41-285
Total GARKANE ENERGY (5057):				16,539.75			
HILDALE CITY UTILITIES (2170)							
3180001-102	Lab Shop Utilities	11/08/2023	11/23/2023	420.11	11/23	0	65-41-280
6077001-102	CITY HALL UTILITIES - 67% Utilities - Split Distribution	11/08/2023	11/23/2023	156.69	11/23	0	65-41-280
6428701-102	Propane Yard Lease	11/08/2023	11/23/2023	100.00	11/23	0	84-41-580
7011201-102	Propane VAPORIZER GAS SERVICE	11/08/2023	11/23/2023	18.26	11/23	0	84-41-280
Total HILDALE CITY UTILITIES (2170):				695.06			
HINTON BURDICK CPAs & ADVISORS (2560)							
294710	FY23 Audit Progress Billing - 67% Utilities Split Distribution	10/31/2023	11/30/2023	1,172.50	11/23	0	65-41-313
Total HINTON BURDICK CPAs & ADVISORS (2560):				1,172.50			
HOME DEPOT (2220)							
7044942	WATER SYSTEM MAINTENANCE	09/22/2023	10/22/2023	50.23	10/23	0	81-41-273
Total HOME DEPOT (2220):				50.23			
JASE LANGTON (5914)							
12959	PEST CONTROL - INITIAL SERVICE 50% SPLIT	07/19/2023	10/31/2023	79.94-	10/23	0	65-41-271
35021	PEST CONTROL 50% SPLIT	08/24/2023	10/31/2023	79.94-	10/23	0	65-41-271
36086	PEST CONTROL 50% SPLIT	08/24/2023	10/31/2023	79.94	10/23	0	65-41-271

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
36086	PEST CONTROL 50% SPLIT	08/24/2023	10/31/2023	79.94-	10/23	0	65-41-271
37929	PEST CONTROL 50% UTILITIES	10/23/2023	10/31/2023	79.94	10/23	0	65-41-271
37929	PEST CONTROL 50% UTILITIES	10/23/2023	10/31/2023	79.94-	10/23	0	65-41-271
Total JASE LANGTON (5914):				159.88-			
JERALD A POSTEMA (5894)							
1041-23	UTILITIES DIRECTOR CONTRACT FOR SEPTEMBER 2023	10/07/2023	10/31/2023	5,000.00	10/23	0	65-41-310
1042-23	UTILITIES DIRECTOR CONTRACT FOR OCTOBER 2023	11/07/2023	11/30/2023	5,000.00	11/23	0	65-41-310
1042-23	FOOD AND MEALS REIMBURSEMENT	11/07/2023	11/30/2023	71.82	11/23	0	65-41-310
1042-23	TRAVEL	11/07/2023	11/30/2023	519.38	11/23	0	65-41-310
Total JERALD A POSTEMA (5894):				10,591.20			
LES OLSON COMPANY (2671)							
EA1342718	MAINTENANCE CONTRACT - 75% UTILITIES	11/20/2023	12/20/2023	588.00	11/23	0	65-41-144
Total LES OLSON COMPANY (2671):				588.00			
LORI WEDEMEYER (5921)							
112023	NOVEMBER HR CONSULTING SPLIT 50%	11/16/2023	11/30/2023	750.00	11/23	0	65-41-310
Total LORI WEDEMEYER (5921):				750.00			
NGL SUPPLY CO. LTD (5605)							
NGL499664	Propane Commodity - Contract Deposit	11/10/2023	11/30/2023	16,003.43	11/23	0	84-41-432
Total NGL SUPPLY CO. LTD (5605):				16,003.43			
Owen Equipment (5736)							
00113978	Jet Nozle for spring line	11/27/2023	11/30/2023	437.40	11/23	0	81-41-273
Total Owen Equipment (5736):				437.40			
PINNACLE GAS PRODUCTS (5471)							
160567	fITTINGS FOR PO# 14948	11/02/2023	11/30/2023	7,517.38	11/23	0	84-41-340
160615	BACK ORDER FOR PO# 14921	11/03/2023	11/30/2023	123.90	11/23	0	84-41-340
160938	gas riser, regulators, and valves	11/10/2023	11/30/2023	709.95	11/23	0	84-41-340
160880	GAS TANK FILL ADAPTORS	11/09/2023	11/30/2023	233.30	11/23	0	82-41-340
Total PINNACLE GAS PRODUCTS (5471):				8,584.53			
PREFERRED PARTS (4694)							
15048-14638	SERVICE SUPPLIES	10/24/2023	10/31/2023	224.90	10/23	0	65-41-250
15048-14639	FUEL FILTER KIT	10/24/2023	10/31/2023	44.90	10/23	0	65-41-250
Total PREFERRED PARTS (4694):				269.80			
PUBLIC MANAGEMENT PARTNERS (5745)							
10-2023	COURT MONITOR FEES FOR OCTOBER 2023	11/06/2023	11/30/2023	595.00	11/23	0	63-41-310
Total PUBLIC MANAGEMENT PARTNERS (5745):				595.00			
RATON, LLC (5633)							
1763	Electrical Labor & Parts for Town Hall 50% SPLIT	05/20/2023	11/30/2023	240.38	11/23	0	65-41-271
1875	SYSTEM CONSTRUCTION 70% SPLIT	10/19/2023	11/30/2023	7,596.90	11/23	0	82-41-340
1875	SYSTEM CONSTRUCTION 30% SPLIT	10/19/2023	11/30/2023	3,255.81	11/23	0	82-42-750

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total RATON, LLC (5633):				11,093.09			
ROCKY MOUNTAIN POWER (4202)							
68511976-00	MONTHLY POWER	10/23/2023	11/22/2023	10.87	10/23	0	84-41-285
Total ROCKY MOUNTAIN POWER (4202):				10.87			
SCHOLZEN PRODUCTS COMPANY, INC. (3450)							
6780931-00	ADAPTORS	10/23/2023	11/22/2023	267.67	10/23	0	81-41-273
6782092-00	HOSE AND CLAMPS	10/24/2023	11/23/2023	77.06	10/23	0	82-41-230
6781416-00	pipe parts for spring water line	10/23/2023	11/22/2023	919.86	10/23	0	81-41-273
3044778-00	CYLINDER MONTHLY RENTAL	11/20/2023	12/20/2023	124.80	11/23	0	81-41-273
6782189-00	PUMP PARTS SPLIT	10/30/2023	11/29/2023	167.35	11/23	0	82-41-340
6782189-00	PUMP PARTS SPLIT	10/30/2023	11/29/2023	75.06	11/23	0	82-42-750
6782296-00	Hydrant gate valve and fittings	10/26/2023	11/25/2023	430.04	11/23	0	81-41-273
Total SCHOLZEN PRODUCTS COMPANY, INC. (3450):				2,061.84			
SHRED ST GEORGE (5401)							
53347112023	PAPER SHREDDING - 50% UTILITIES	11/20/2023	11/30/2023	27.48	11/23	0	65-41-271
Total SHRED ST GEORGE (5401):				27.48			
SmartCover Systems (5923)							
27973	sewer monitoring system	10/26/2023	10/31/2023	5,960.00	10/23	0	82-41-273
Total SmartCover Systems (5923):				5,960.00			
SOUTH CENTRAL COMMUNICATIONS (3560)							
8297800 112	CITY HALL PHONES & FAX LINES - 67% UTILITIES - Split Distribution	11/01/2023	11/16/2023	660.25	11/23	0	65-41-287
Total SOUTH CENTRAL COMMUNICATIONS (3560):				660.25			
STATE OF UTAH DEPT. OF AGRICULTURE&FOOD (5580)							
102523	ESTABLISHMENT REGISTRATION FOR 2024	11/07/2023	12/07/2023	200.00	11/23	0	84-41-210
Total STATE OF UTAH DEPT. OF AGRICULTURE&FOOD (5580):				200.00			
STEPHEN WADE AUTO CENTER (3692)							
5560926	EMISSION CONTROL FILTER TRUCK 3172	10/05/2023	11/04/2023	196.68	11/23	0	65-41-250
5563025	EMISSION CONTROL FILTER TRUCK 3172	10/25/2023	11/24/2023	51.10	11/23	0	65-41-250
Total STEPHEN WADE AUTO CENTER (3692):				247.78			
SUMMIT ENERGY, LLC (4605)							
1023HILD	NATURAL GAS COMMODITY - 10/23	11/03/2023	12/03/2023	15,890.19	11/23	0	84-41-431
Total SUMMIT ENERGY, LLC (4605):				15,890.19			
SUNRISE ENGINEERING, INC. (3740)							
0137593	HILDALE CITY CULLINARY WATER MASTER PLAN & IMPACT FEE FACILITIES PLAN UPDATE	10/09/2023	11/08/2023	11,140.00	10/23	0	81-41-311
0137712	LAGOON HEADWORKS RECONSTRUCTION	10/11/2023	10/31/2023	1,887.45	10/23	0	82-41-311
0138239	HILDALE CITY CULLINARY WATER MASTER PLAN & IMPACT FEE FACILITIES PLAN UPDATE	11/06/2023	12/06/2023	19,935.00	11/23	0	81-41-311

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
Total SUNRISE ENGINEERING, INC. (3740):				32,962.45			
SUSAN STEED (5720)							
53	CITY OFFICE CLEANING - 25% UTILITY - SPLIT DISTRIBUTION	11/02/2023	11/30/2023	40.50	11/23	0	65-41-271
53	UTILITY OFFICE BUILDING	11/02/2023	11/30/2023	144.00	11/23	0	65-41-271
54	CITY OFFICE CLEANING - 25% UTILITY - SPLIT DISTRIBUTION	11/28/2023	11/30/2023	27.00	11/23	0	65-41-271
54	UTILITY OFFICE BUILDING	11/28/2023	11/30/2023	108.00	11/23	0	65-41-271
54	PROPANE YARD BATHROOMS	11/28/2023	11/30/2023	18.00	11/23	0	65-41-271
Total SUSAN STEED (5720):				337.50			
TOWN OF COLORADO CITY (3930)							
10493	JUF PAYROLL 10.27.23	10/26/2023	11/10/2023	20,052.48	10/23	0	65-41-110
10493	JUF CITY MANAGER PAYROLL 10.27.23	10/26/2023	11/10/2023	1,262.31	10/23	0	65-41-113
10493	JUF CITY RECORDER PAYROLL 10.27.23	10/26/2023	11/10/2023	1,255.00	10/23	0	65-41-115
10493	JUF CITY TREASURER PAYROLL 10.27.23	10/26/2023	11/10/2023	1,912.23	10/23	0	65-41-114
10493	JUF TEMP EMPLOYEE PAYROLL 10.27.23	10/26/2023	11/10/2023	1,489.59	10/23	0	65-41-120
10493	JUF PAYROLL TAXES 10.27.23	10/26/2023	11/10/2023	1,661.72	10/23	0	65-41-130
10493	JUF BENEFITS 10.27.23	10/26/2023	11/10/2023	6,393.10	10/23	0	65-41-140
10493	ADMIN FEE 50% SPLIT	10/26/2023	11/10/2023	253.87	10/23	0	65-41-242
10499	PROPANE TRUCK	11/01/2023	11/16/2023	230.99	11/23	0	84-41-257
10499	VAC TRUCK	11/01/2023	11/16/2023	266.73	11/23	0	82-41-257
10499	UTILITIES	11/01/2023	11/16/2023	2,902.68	11/23	0	65-41-257
10499	ADMIN FEE FOR UTILITIES	11/01/2023	11/16/2023	67.51	11/23	0	65-41-257
10520	GENERAL & PROFESSIONAL LIABILITY & AUTO INSURANCE	11/01/2023	11/16/2023	2,297.65	11/23	0	84-41-510
10520	RISK MANAGEMENT FUND	11/01/2023	11/16/2023	598.35	11/23	0	65-41-510
10520	TUITION REIMBURSEMENT FUND	11/01/2023	11/16/2023	239.34	11/23	0	65-41-140
10520	PROPANE LIABILITY	11/01/2023	11/16/2023	270.90	11/23	0	84-41-510
PROST 1023	AZ SALES TAX PROPANE	10/31/2023	11/15/2023	1,296.69	11/23	0	84-21371
WAT 1023	AZ SALES TAX WATER	10/31/2023	11/15/2023	1,579.25	11/23	0	81-21371
10523	JUF PAYROLL 11.10.23	11/09/2023	11/24/2023	21,626.54	11/23	0	65-41-110
10523	JUF CITY MANAGER 11.10.23	11/09/2023	11/24/2023	1,262.31	11/23	0	65-41-113
10523	JUF CITY RECORDER 11.10.23	11/09/2023	11/24/2023	1,255.00	11/23	0	65-41-115
10523	JUF CITY TREASURER 11.10.23	11/09/2023	11/24/2023	1,912.23	11/23	0	65-41-114
10523	JUF TEMP EMPLOYEES 11.10.23	11/09/2023	11/24/2023	1,536.27	11/23	0	65-41-120
10523	JUF PAYROLL TAXES 11.10.23	11/09/2023	11/24/2023	1,789.62	11/23	0	65-41-130
10523	JUF BENEFITS 11.10.23	11/09/2023	11/24/2023	1,431.80	11/23	0	65-41-140
10523	ADMIN FEE FOR UTILITIES	11/09/2023	11/24/2023	226.53	11/23	0	65-41-242
10532	JUF PAYROLL 11.24.23	11/22/2023	12/07/2023	21,826.47	11/23	0	65-41-110
10532	JUF CITY MANAGER	11/22/2023	12/07/2023	1,262.31	11/23	0	65-41-113
10532	JUF CITY RECORDER PAYROLL 11.24.23	11/22/2023	12/07/2023	1,621.00	11/23	0	65-41-115
10532	JUF CITI TREASURER PAYROLL 11.24.23	11/22/2023	12/07/2023	1,912.23	11/23	0	65-41-114
10532	JUF TEMP EMPLOYEE PAYROLL 11.24.23	11/22/2023	12/07/2023	1,568.97	11/23	0	65-41-120
10532	JUF PAYROLL TAXES 11.24.23	11/22/2023	12/07/2023	1,805.38	11/23	0	65-41-130
10532	JUF BENEFITS 11.24.23	11/22/2023	12/07/2023	6,499.15	11/23	0	65-41-140
10532	ADMIN FEE FOR UTILITIES	11/22/2023	12/07/2023	286.01	11/23	0	65-41-242
10524	DOJ COURT COST SHARING - CARTER	11/17/2023	12/02/2023	623.07	11/23	0	63-41-310
10525	DOJ COURT COST SHARING - CARTER	11/17/2023	12/02/2023	1,969.92	11/23	0	63-41-310
10526	DOJ COURT COST SHARING - KEITH	11/17/2023	12/02/2023	2,802.53	11/23	0	63-41-310
Total TOWN OF COLORADO CITY (3930):				117,247.73			
UNIFIRST CORPORATION (4055)							
2310011581	LAUNDRY	10/30/2023	11/29/2023	171.82	10/23	0	65-41-260
2310012082	LAUNDRY	11/06/2023	12/06/2023	171.82	11/23	0	65-41-260

Invoice	Description	Invoice Date	Due Date	Total Cost	Period	GL Activity	GL Account
2310012608	LAUNDRY	11/13/2023	12/13/2023	171.82	11/23	0	65-41-260
2310013152	LAUNDRY	11/20/2023	12/20/2023	171.82	11/23	0	65-41-260
2310013745	LAUNDRY	11/27/2023	12/27/2023	171.82	11/23	0	65-41-260
Total UNIFIRST CORPORATION (4055):				859.10			
UTAH STATE FIRE MARSHAL (5075)							
2023-02101	CERTIFICATION FEES	11/21/2023	11/30/2023	730.00	11/23	0	84-41-273
Total UTAH STATE FIRE MARSHAL (5075):				730.00			
Vergel Barlow (5926)							
60292	TOWING TRUCK #3172	07/26/2023	11/30/2023	421.88	11/23	0	65-41-250
Total Vergel Barlow (5926):				421.88			
VERIZON WIRELESS (4620)							
9946882590	WIRELESS SERVICE - UTILITIES 43% SEPT 15 - OCT 14	11/06/2023	12/06/2023	309.34	11/23	0	65-41-287
Total VERIZON WIRELESS (4620):				309.34			
XPRESS BILL PAY (5646)							
INV-XPR006	XPRESS BILL PAY AND ACCOUNT MAINTENANCE OCT 2023	10/31/2023	11/30/2023	707.46	11/23	0	65-41-318
Total XPRESS BILL PAY (5646):				707.46			
Grand Totals:				362,897.92			

Report GL Period Summary

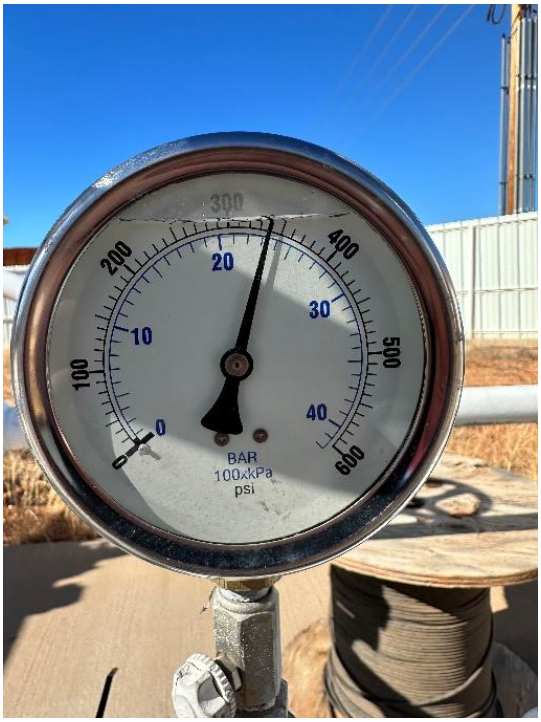
Vendor number hash:	0
Vendor number hash - split:	0
Total number of invoices:	0
Total number of transactions:	0

Utilities Monthly Report
November 2023

Gas Operations:

Gas staff delivered and hooked up several propane tanks for customers. Staff also connected new service lines to metered natural gas customers. Staff are adjusting gas regulators to increase the flow through the Hildale/Colorado City Gate Station.

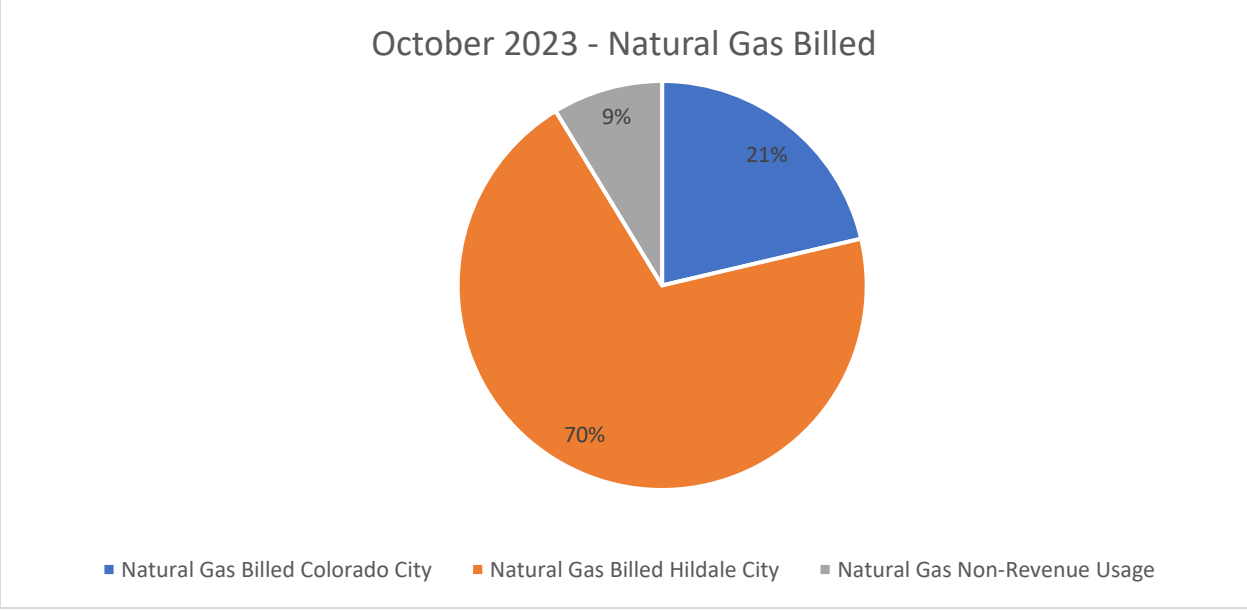
Natural Gas and Propane contracts are in place through May of 2024 to stabilize the rates.



THE FOLLOWING GRAPHS FOR GAS AND WATER ARE NOT FULLY VETTED FOR ACCURACY. THEY ARE FOR FEEDBACK FROM THE COUNCILS TO DETERMINE IF MORE INFORMATION IS DESIRED.

Natural Gas billed to Colorado City and Hildale City customers for October 2023.

Description	Quantity Billed*	Number of Customers
Natural Gas Purchased	2,001,200	
Natural Gas Billed Colorado City	426,800	192
Natural Gas Billed Hildale City	1,399,800	311
Natural Gas Non-Revenue Usage	174,600	
*Numbers are in Corrected Cubic Feet (100 Corrected Cubic Feet = 1 Therm)		



Sewer Operations:

The Utility Crew cleaned approximately 15,400 feet of sewer main line this month. With the addition of the Smart Cover, the alarm alerted staff several times this past month about increased flows in the sewer manhole in Centennial Park. Staff responded to the alarms before any overflows could occur.

Staff found Sewer Lift Station Pump #2 was not pumping as much as in the past due to wear on the impellers. Crews removed the pump and replaced it with a new pump which we had on standby.

Sewer Headworks Project

The Sewer Headworks Project has been delayed until the slide gates are delivered.

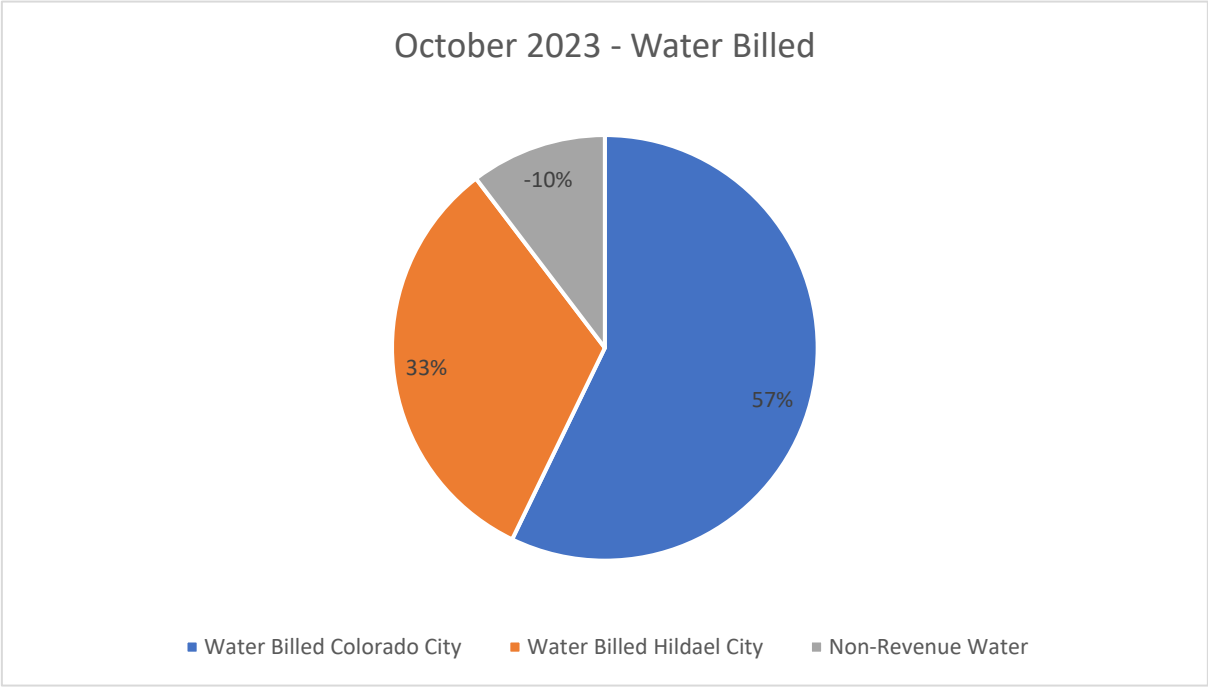
Water Operations:

The crew replaced a faulty check valve and a broken butterfly valve at the Water Treatment Plant. We also replaced a booster pump that had the motor fail that will be sent out to be repaired. Crews worked with Jones DeMille staff to locate the existing Utilities in preparation for the upcoming ARPA Raw Water Line Replacement and Well Project.

THE FOLLOWING GRAPHS FOR GAS AND WATER ARE NOT FULLY VETTED FOR ACCURACY. THEY ARE FOR FEEDBACK FROM THE COUNCILS TO DETERMINE IF MORE INFORMATION IS DESIRED.

Water billed to Colorado City and Hildale City customers for October 2023.

Description	Quantity Billed*	Number of Customers
Water Produced	21,246,000	
Water Billed Colorado City	15,320,000	781
Water Billed Hildale City	8,700,000	383
Non-Revenue Water	2,774,000	
*Numbers are in gallons		



Well 17 Drilling

Cluff Drilling has finished the drilling and casing on Well 17. Staff are getting quotes on the cost for a 24 hour pump test to see how much water the well will produce. Once the quantity of water the well can produce is determined, staff will order the pump and motor.

Grants and Administration:

Staff are working on permitting the Academy Well and Well 17. During a site visit and routine sampling of the community wells, DEQ informed us the two wells were not fully permitted and the communities will need to receive permits from the state agencies to use the wells for drinking water.

The Water Master Plan and the Impact Fee Study are vetted by staff and ready for discussion by the Utility Advisory Board and both City Councils.

The Rate Study, through the Rural Community Assistance Corporation (RCAC), is now substantially complete and will be available for discussion on the rate structure and timing of the increases in early 2024. The goal is to have the framework for the water rates in place for City Council adoption in 2024. The rate study is being prepared for the communities at no cost. The project is being funded through the United States Department of Agriculture – Rural Development (USDA-RD)

Staff have been working on design and cost for the installation of a Booster Pump Station to eliminate the low-pressure zone in the southwest portion of Hildale. The booster pumps will allow construction of buildings and provide increased fire flows for the area.

Staff are working with the Water Infrastructure Finance Authority (WIFA) Loan/Grant, for the maintenance of the 600,000 (6K) gallon and 800,000 (8K) gallon tank. The 6K tank needs to be taken out of service and the inside cleaned, painted and placed back in service. The 8K tank needs cathodic protection installed and the exterior cleaned and painted.

Work on the Mohave County American Recovery Plan Act (ARPA) Water Project is substantially designed and will include two (2) wells and a new raw water line from the new wells and eight (8) existing wells to the water treatment plant. The permits are ready for signature to begin the permitting process.

Staff is working on energy efficiency programs for the wells and treatment plant by installing Variable Frequency Drives (VFD), the investigation includes finding grants for the purchase and installation of the VFD's.

Utilities staff are researching the conversion of the current gas and water meter reading system with an updated version that will provide better service and reliability. The current system, Badger Meter, has discontinued the gas meter portion of the sales and moved the reading platform to a cloud application using a third-party vendor, Amazon. Staff recommend moving to a generic reading system that can be used on all existing meters. The price for conversion and the reading devices would be significantly cheaper than making a change to another meter and reading company. Once the costs have been received, a presentation and recommendation will be provided to the Board and Councils.

HILDALE CITY & TOWN OF COLORADO CITY CULINARY WATER MASTER PLAN UPDATE

October 2023

PREPARED BY:

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Table of Contents

Appendices

I. INTRODUCTION

Hildale City is located along Highway 59 in Washington County in southwestern Utah. The Town of Colorado City is neighboring Hildale, just across the border in Mohave County, Arizona. The water system is shared and funded by both communities (city) and is operated and maintained by the Hildale & Colorado City Utility Department (HCCUD) through an Inter-Governmental Agreement (IGA) with Colorado City. This plan was created with coordination from staff from Hildale City, the Town of Colorado City and the HCCUD.

Hildale City completed a previous Culinary Water Master Plan Update in 2020, which was an update to their 2014 plan. Hildale City has contracted with Sunrise Engineering to complete an update to the 2020 plan. While this is a shorter window between plans than is typical, the city has recognized that conditions and future projections have changed significantly in that short time period. The intent of this update is to account for these changes.

The culinary water system has been analyzed under the State of Utah Division of Drinking Water guidelines to determine the current system status and to evaluate possible system needs as the community grows during the next 20 years. As part of this plan, Sunrise Engineering, Inc. has included recommended improvements to the culinary water system and has developed a potential financing plan that will help Hildale City and the Town of Colorado City obtain the necessary funds for the recommended improvements.

This plan also serves as the Impact Fee Facilities Plan for Hildale and Colorado City and includes an Impact Fee Analysis.

This report does not analyze water rights or a secondary water system. This plan also does not include a user rate analysis.

II. SYSTEM USERS' ANALYSIS

A. LENGTH OF PLANNING PERIOD

It is typical for a master plan to use a 10 or 20-year planning period. The first year of a 10-year planning period would be the calendar year 2024 with the 10th and final year being 2033. This plan will use fiscal years and will assume a 20-year (2024-2043) planning period for recommended improvements. This period will allow an adequate evaluation of the system for potential infrastructure improvements or other needs. Revenue sources should be carefully evaluated each year as budgets are set by the city and town council.

B. PROJECTED GROWTH RATE

An important element in the development of the water system and capacity analysis is the projection of the city's population growth rate on an annual basis. This projection gives the planner an idea of the potential future demands on the culinary water system for the length of the planning period.

Projecting the number of future culinary water connections can be a subjective process. The most effective method of estimating the number of future connections is by analyzing past historical numbers of connections and census records. Because Hildale and Colorado City utilize the same water system, the census records and past numbers of connections of both Hildale and Colorado City were included in the analysis. In the past five years the communities have seen a fluctuation of positive and negative growth rates. Due to this fluctuation, analyzing the historical growth rates is an inaccurate method of predicting future growth for these communities. Figure II-1 below shows the historic population in both communities.

Figure II-1: Historic Population

Calendar Year	Hildale Population	Colorado City Population	Total Population	Est. Growth Rate	Number of Connections
2018	2,916	4,825	7,741	0.21%	863
2019	2,910	4,836	7,746	0.06%	763
2020	2,727	4,531	7,258	-6.30%	799
2021	2,825	4,694	7,519	3.60%	855
2022	2,931	4,871	7,802	3.76%	1,113

At the time of the previous plan, the communities anticipated minimal to no growth for the first few years of the planning window. However, in the past few years the communities have seen a significant increase in number of connections, and there are multiple new developments that are in various stages of construction and planning that are anticipated to come to each community in the planning window. Development is anticipated to continue at a relatively high rate for the length of the planning window. This abrupt change in growth is one of the main reasons the city is updating their culinary water master plan after only a few years.

Staff and elected officials from both communities looked at the upcoming developments in different stages of the approval process to determine a realistic number of anticipated new connections in future years. The number of anticipated new connections was used to determine a growth rate. In the discussions with staff from each community, it was determined that based on the expected timeline of new developments, a higher than typical growth rate will be assumed over the 20-year planning period. The following growth rates were used for this study:

- 2024-2028 (first 5 years) – 10% per year
- 2029-2033 (second 5 years) – 12% per year
- 2034-2038 (third 5 years) – 10% per year
- 2039-2043 (last 5 years) – 8% per year

C. PROJECTED POPULATION & NUMBER OF CONNECTIONS

Based on the forecasted growth rates referenced above, the number of connections the city will need to plan for can be calculated with the compound interest formula shown below.

$$F = P(1 + i)^N$$

F = Future Population P = Present Population
i = Projected Growth Rate N = Years

This equation was used to project the community population and number of connections for each year in the planning period. Figure II-2 below shows a summary of the growth rate analysis. Appendix A shows the full analysis.

Figure II-2: Growth Rate Analysis Summary

Calandar Year	Est. Growth Rate	Hildale Population	Colorado City Population	Total Population	Hildale Connections	Colorado City Connections	Total Connections
2023		3,224	5,358	8,582	435	790	1,224
2024	10.0%	3,547	5,894	9,440	478	869	1,347
2025	10.0%	3,901	6,483	10,384	526	956	1,481
2026	10.0%	4,291	7,132	11,423	578	1,051	1,630
2027	10.0%	4,720	7,845	12,565	636	1,156	1,792
2028	10.0%	5,192	8,629	13,822	700	1,272	1,972
2029	12.0%	5,816	9,665	15,480	784	1,425	2,208
2030	12.0%	6,513	10,825	17,338	878	1,596	2,473
2031	12.0%	7,295	12,124	19,419	983	1,787	2,770
2032	12.0%	8,170	13,578	21,749	1,101	2,001	3,103
2033	12.0%	9,151	15,208	24,359	1,233	2,242	3,475
2034	10.0%	10,066	16,729	26,794	1,357	2,466	3,822
2035	10.0%	11,073	18,401	29,474	1,492	2,712	4,205
2036	10.0%	12,180	20,241	32,421	1,641	2,984	4,625
2037	10.0%	13,398	22,266	35,663	1,806	3,282	5,088
2038	10.0%	14,738	24,492	39,230	1,986	3,610	5,596
2039	8.0%	15,917	26,452	42,368	2,145	3,899	6,044
2040	8.0%	17,190	28,568	45,758	2,317	4,211	6,528
2041	8.0%	18,565	30,853	49,418	2,502	4,548	7,050
2042	8.0%	20,050	33,321	53,372	2,702	4,912	7,614
2043	8.0%	21,654	35,987	57,641	2,918	5,305	8,223

It is important to understand that projected growth rates are not the cornerstone of this plan. If the number of system connections projected is reached earlier or later than anticipated, future improvements to support growth may come either earlier or later.

D. PROJECTED EQUIVALENT RESIDENTIAL UNITS (ERU)

The water system is made up of multiple connection types. Hildale City and the Town of Colorado City report their different connections to the state as either residential, commercial, industrial, or institutional. Figure II-3 shows a summary of the number of connections by type.

Figure II-3: Total Number of Units Per Connection Type

Year	Residential	Commercial	Industrial	Institutional	Total
2018	730	72	24	37	863
2019	667	66	18	12	763
2020	695	70	20	14	799
2021	742	75	23	15	855
2022	939	98	28	48	1,113
2023	1,033	108	31	53	1,225

Each of these different connection types use different amounts of water at different flow rates. To properly analyze the systems usage, the number of connections is converted to equivalent residential units (ERU). This is done by taking the usage per connection of each connection type and dividing by the usage per connection of the average residential connection. Figure II-4 and Figure II-5 show the number of ERUs per connection type and the total number of ERUs. This plan will use the number of ERUs instead of the number of connections.

Figure II-4: ERUs Per Connection Type

Residential	Commercial	Industrial	Institutional
1.0	1.4	1.1	1.7

Figure II-5: Total Number of ERUs Per Connection Type

Year	Residential	Commercial	Industrial	Institutional	Total
2018	730	71	14	33	848
2019	667	90	23	26	806
2020	695	114	14	32	855
2021	742	109	22	51	924
2022	939	142	32	82	1,195
2023	1,033	156	35	90	1,314

Applying the growth rates that were established in Figure II-2 to the number of ERUs, the projected number of ERUs can be found for the end of the planning period.

Figure II-6: Projected Number of ERUs

Calendar Year	Hildale ERUs	Colorado City ERUs	Total ERU
2023	468	847	1,315
2024	515	931	1,446
2025	566	1,024	1,591
2026	623	1,127	1,750
2027	685	1,239	1,925
2028	754	1,363	2,117
2029	844	1,527	2,371
2030	945	1,710	2,656
2031	1,059	1,915	2,974
2032	1,186	2,145	3,331
2033	1,328	2,403	3,731
2034	1,461	2,643	4,104
2035	1,607	2,907	4,514
2036	1,768	3,198	4,966
2037	1,945	3,518	5,462
2038	2,139	3,870	6,009
2039	2,310	4,179	6,489
2040	2,495	4,513	7,008
2041	2,695	4,875	7,569
2042	2,910	5,265	8,175
2043	3,143	5,686	8,829

E. AVERAGE CULINARY WATER USAGE

The State of Utah Public Drinking Water regulations require public water systems to meet requirements based upon usage. These requirements are found in the State Code R309. The code provides a standard usage based upon the types of connections serviced in a system. For a standard residential connection, the code says to assume an average daily usage of 400 gallons per day (gpd) per ERU. Historical usage data was provided by the HCCUD and that usage was compared against the 400 gpd to check if it would adequately represent the usage in the city's system.

The historical usage from the city was from meter data over the past 5 years (2018-2022). To check against the usage indicated in the State's Code R309, the average usage per ERU was calculated from the historical usage. The total average usage over the past 5 years was divided by the average number of ERUs and then converted to gpd/ERU as shown in the calculations below.

285,751,000 gallons / 926 ERU = 308,920 gallon/ERU/year
308,920 gallon/ERU/year / 365 days/year = 846 gpd/ERU

Figure II-7 shows a summary of the average usage and historical data that is explained above.

Figure II-7: Hildale & Colorado City Historical Usage Summary

Year	Total Usage (Thousand Gallons)	Number of Connections	Usage per Conn (gpd/conn)	Number of ERUs	Usage per ERU (gpd/ERU)
2018	303,105	863	962	848	979
2019	251,780	763	904	806	856
2020	285,109	799	978	855	914
2021	279,736	855	896	924	829
2022	309,026	1,113	761	1,195	708
5-Year Avg:	285,751	879	900	925	846

The 846 gpd/ERU average usage calculated from the city's historical usage is significantly higher than the usage that is indicated for use in the state code. This is because the average household size in the communities of Hildale City and Colorado City is larger than the average household size in the rest of the state. Because of the larger usage per ERU, this plan will determine usage demand based on the historical usage instead of the numbers from the state code. This method will result in a more realistic analysis and is the more conservative of the two methods.

The calculations in this report will be based on the historical average usage of 846 gpd/ERU (0.59 gpm/ERU). It is recommended that future improvements be sized based on this average usage.

F. PEAK DAY DEMAND CULINARY WATER USAGE

Peak Day Demand (PDD) is defined by the Utah Administrative Code as the "anticipated water demand on the day of the highest water consumption". The state code uses 800 gpd/ERU for a peak day demand of a standard residential unit which is twice the average day demand. Therefore, it can be assumed that the PDD for this plan is double the 846 gpd/ERU average demand calculated above. Doubling the average usage results in a peak demand of 1,692 gpd/ERU (1.17 gpm/ERU).

G. PEAK INSTANTANEOUS DEMAND CULINARY WATER USAGE

Peak Instantaneous Demand (PID) can be described as the highest demand at any one instance in the system. This can be determined based on hourly usage if such data is available. Where hourly usage data does not exist, which is the case of this study, the State Code uses the following method to calculate the PID:

Indoor Usage:

$$Q_{peak\ indoor} = 10.8\ x\ N^{0.64}$$

Where N is the number of connections and Q is the flow in gpm

Outdoor Usage:

$$Q_{peak\ outdoor} = N\ x\ Irr.Acreage\ x\ Demand\ Factor$$

Where N is the number of connections, Irr. Acreage is the average area that is irrigated throughout the system and the Demand Factor is based on the zone given in Table 510-7 of R309-510 of the Utah Administrative Code.

This calculation results in a PID of 2,446 gpm for the year 2024. It's important to note that the formula does not take into account the average household size, only the number of connections. The PID is expected to go down as the average household size decreases.

H. CONSERVATION

This plan assumes a conservation rate of 0.5% per year over the planning period. This conservation factor is used to represent any conservation efforts from the city, existing connections, or new connections. This rate also takes into account the decrease in average household size that the communities are currently experiencing. This conservation results in the following demands at the end of the planning window.

- ADD (2043) = 766 gpd/ERU
- PDD (2043) = 1,531 gpd/ERU

The conservation factor is not used for the PID. As mentioned above, the PID is the highest demand on the system at any given moment. Conservation efforts do not have a major impact on the amount of water that could be used at any given moment.

III. WATER SOURCE CAPACITY ANALYSIS

A. EXISTING WATER SOURCE

To analyze source capacity, all available culinary water sources must first be identified. These sources are listed in Figure III-1. The flow capacity numbers were acquired from the HCCUD.

Figure III-1: Hildale and Colorado City Existing Water Sources

Name/#	Flow (CFS)	Flow (gpm)
	Wells	
4	0.265	119
8	0.134	60
10	0.189	85
11	0.178	80
17*	0.223	100
19	0.223	100
21	0.446	200
22	0.223	100
24	0.178	80
Academy	0.512	230
Power Plant**	0.000	0
Subtotal	**2.571**	**1154**
	Springs	
Jans Canyon	0.036	16
Maxwell Canyon	0.143	64
Subtotal	**0.178**	**80**
Total Source	**2.750**	**1234**

*Well 17 is currently being refurbished and is anticipated to produce 100 gpm once it is finished.
**Power Plant Well can produce 244 gpm but is currently not plumbed to the treatment plant so it is unavailable and not counted as a source.

Listed spring flows are relatively constant. These springs were developed from a horizontal bore into the Navajo sandstone formation. The springs are currently used for Maxwell Park and a fill station. With the springs being used for these non-culinary uses the culinary system does not realize the full 80 gpm associated with the springs. These uses are unmetered, so it is not known what percentage of the spring water goes into the culinary water system.

B. EXISTING REQUIRED WATER SOURCE CAPACITY

The Utah State Code R309-510-7 states that a water system's source needs to meet "the anticipated water demands on the day of the highest water consumption which is the Peak Day Demand". The PDD was determined Section II.F as 1,692 gpd/ERU. The source capacity demand for the water system was calculated by multiplying the PDD from Section II.F by the total number of ERUs existing in the system. The results of the analysis are presented in gallons per minute. The results of this analysis are shown in Figure III-2 and the calculation is shown in Appendix B.

Figure III-2: Required Source Capacity (Existing Conditions)

Total Required Source Capacity	1,700 gpm
Total Existing Source Available	1,234 gpm
Existing Source Capacity Deficit	-466 gpm

C. PROJECTED REQUIRED WATER SOURCE CAPACITY

The projected culinary water source capacity required at the end of the planning period is determined from the same factors explained in Section III.B, but the projected number of ERUs is inserted into the calculations instead of the number of existing ERUs. The results of the analysis are shown below in Figure III-3, Figure III-4, and Figure III-5.

Figure III-3: Required Source Capacity (5-year Planning Period)

Total Required Source Capacity	2,440 gpm
Total Existing Source Available	1,234 gpm
Existing Source Capacity Deficit	-1,206 gpm

Figure III-4: Required Source Capacity (10-Year Planning Period)

Total Required Source Capacity	4,190 gpm
Total Existing Source Available	1,234 gpm
Existing Source Capacity Deficit	-2,956 gpm

Figure III-5: Required Source Capacity (20-Year Planning Period)

Total Required Source Capacity	9,397 gpm
Total Existing Source Available	1,234 gpm
Existing Source Capacity Deficit	-8,163 gpm

D. RECOMMENDED WATER SOURCE CAPACITY IMPROVEMENTS

The analysis above shows that the existing available source is not sufficient to accommodate a peak day demand. The historical experience has been that during peak summer months with the system running at full capacity, the city is unable to provide enough water. Without being able to provide enough water to meet system demand the water levels in the storage tanks gradually drop during summer months affecting available fire flow and water pressures. This has caused both communities to enact water restrictions during summer months for the last several years.

Significant source availability improvements are needed now as well as in upcoming years. Hildale City and the Town of Colorado City have performed multiple studies over the years looking at different ways to improve the quantity and quality of available source. These studies, as well as this plan, provided several recommended improvements. This plan incorporates the recommendations from these studies. However, these improvements do not provide enough sources to cover the required source capacity in the planning windows.

In order to increase the available source to meet the projected required source capacity, this plan assumes that a significant number of new wells will need to be drilled. In addition to the recommended improvements from previous studies, this plan recommends additional well fields to be installed at the 0–5-year, 6-10-year, and 11-20-year windows. These well fields are included in the recommendations as 6 single projects with one well field for each community in each of the planning windows. The following assumptions were used in calculating the number of needed wells:

- Each well has a flow of 120 gpm, the average flow of all existing wells.
- The required flow for each planning window's well field is equivalent to the source deficit at the end of each planning period.
- The number of wells required was found by taking the total required flow divided by the average flow per well, then multiplied by the respective percentage to split the number of wells between the two states.

It is recommended that a well siting study be performed to identify the best possible locations to drill new wells. Because locations are not specified for these additional wells, the wells are not shown in the recommended improvements map in Appendix D.

1. 1 TO 5 YEAR IMPROVEMENTS

- Treatment Plant Wells – The quickest available option to help increase source capacity is to drill two additional wells on the Arizona side of the system, one shallow well and one deep well. This portion of Arizona is an open basin and does not require obtaining water rights to drill and use a well. The city is currently working on a study to evaluate the locations of these two wells. The preliminary idea is to drill the wells near the treatment plant. Based on the output of existing wells, it is anticipated that these wells will produce roughly 80 gpm for the shallow well and 120 gpm for the deep well. The well study will help refine these estimated flows.

- 5-Year Arizona Well Field – It is anticipated that this project will comprise of 7 wells producing the needed total of 840 gpm.

- 5-Year Utah Well Field – It is anticipated that this project will comprise of 7 wells producing the needed total of 840 gpm and will require corresponding water rights.

2. 6 TO 10 YEAR IMPROVEMENTS

- 10-Year Arizona Well Field - It is anticipated that this project will comprise of 8 wells producing the needed total of 960 gpm.

- 10-Year Utah Well Field - It is anticipated that this project will comprise of 8 wells producing the needed total of 960 gpm and will require corresponding water rights.

3. 11 TO 20 YEAR IMPROVEMENTS

- Trailhead Well 1 – The city is looking at drilling additional wells in the nearby canyons to the northeast. The water from these canyons would be obtained from different geologic formations than their current wells. The hope is that the water quality is similar to the Jans Canyon and Maxwell Canyon springs. Trailhead Well 1 would be located on city owned property near the Squirrel Canyon Trailhead. This well would provide additional source to the city but primarily will act as a test to determine potential quantity and quality of water. It is estimated that this well could produce 175 gpm. These wells are in Utah and will require water rights to drill and use the well. The city currently has water rights that can apply for a water rights transfer to the location of the proposed well.

- Trailhead Well 2- If the Trailhead Well 1 proves to be a successful route for obtaining additional source, it is recommended that the city continue to pursue this source with an additional well on the city owned land next to the Squirrel Canyon Trailhead. This well and all future wells up the canyon will require obtaining additional water rights. This well is also estimated to produce 175 gpm.

- Hildale Groundwater Project Phase I - If the Trailhead Wells are successful at producing good quality water, this plan recommends that additional wells be drilled in the area northeast of Hildale. These wells would be located on Bureau of Land Management (BLM) property and would require environmental studies and going through BLM's process (such as a SF299 application and Plan of Development) for obtaining right-of-way on BLM land. The city has already begun working through this process with the help of the Washington County Water Conservancy District. Based on the best available information that the city has, it is estimated that this project would produce roughly 350 gpm. The exact location of these wells will be determined through coordination with the city and BLM.

- Hildale Groundwater Project Phase II- This phase involves drilling two additional wells in different location than Phase I but in the same general BLM owned area. Phase II would require the same BLM process and need for additional water rights. This phase is also estimated to produce roughly 350 gpm.

- Hildale Groundwater Project Phase III – This phase is similar to the first two and involves additional wells in the BLM owned area Northeast of Hildale. It is estimated that this phase will produce 175 gpm.

- 20-Year Arizona Well Field - It is anticipated that this project will comprise of 14 wells producing the needed total of 1,680 gpm.

- 20-year Utah Well Field - It is anticipated that this project will comprise of 14 wells producing the needed total of 1,680 gpm and will require corresponding water rights.

These recommended improvements are summarized in Figure III-6. The projects with identified locations are shown in the Recommended Improvements exhibit in Appendix D.

Figure III-6: Summary of Recommended Source Improvements

Name/#	Flow (CFS)	Flow (gpm)	Est. Year Installed
Wells			
Treatment Plan Shallow	0.178	80	2024
Treatment Plant Deep	0.267	120	2024
1-5 Year AZ Well Field	1.872	840	2026
1-5 Year UT Well Field	1.872	840	2026
6-10 Year AZ Well Field	2.139	960	2033
6-10 Year UT Well Field	2.139	960	2033
Trailhead Well 1	0.390	175	2034
Trailhead Well 2	0.390	175	2034
Hildale Groundwater Project PH I	0.780	350	2035
Hildale Groundwater Project PH II	0.780	350	2036
11-20 Year AZ Well Field	3.743	1,680	2039
11-20 Year UT Well Field	3.743	1,680	2039
Hildale Groundwater Project PH III	0.390	175	2040
Total Projected New Source	**18.683**	**8,385**	

The estimated schedule for the recommended improvements is based on projected growth and the anticipated project priority. It is recommended that the early projects be pushed forward as much as possible as funding options become available.

E. SOURCE CAPACITY SUMMARY

Figure III-7 and Figure III-8 show the comparison between the available source capacity and the projected required source capacity. The available source capacity in Figure III-8 represents the source capacity available with the implementation of the recommended improvements including the various new wells required in each planning window.

Figure III-7: Projected Source Capacity with Existing Conditions

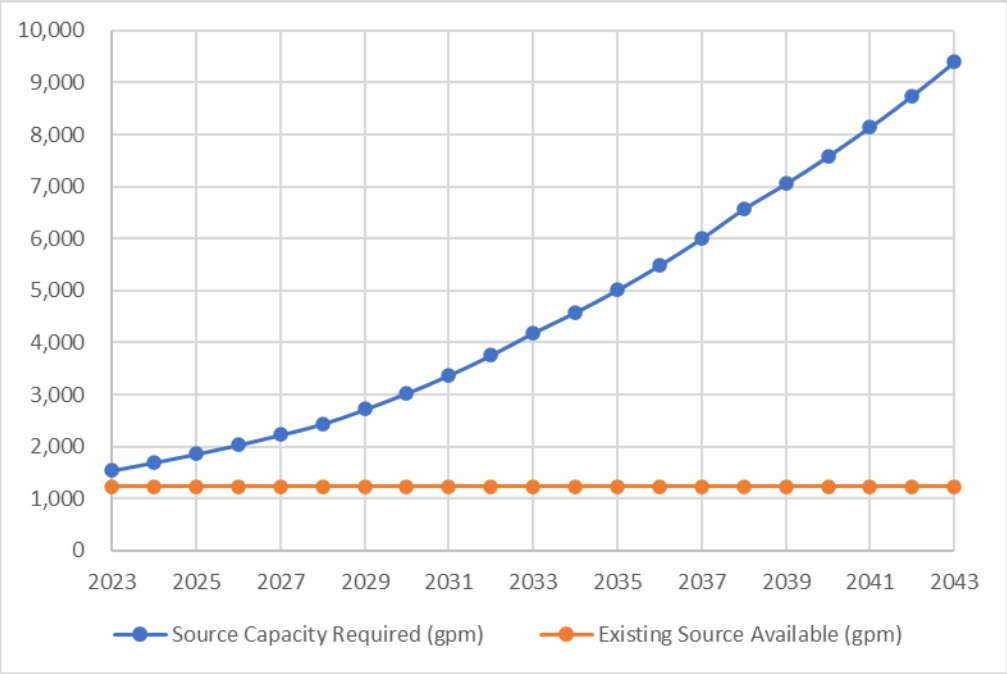
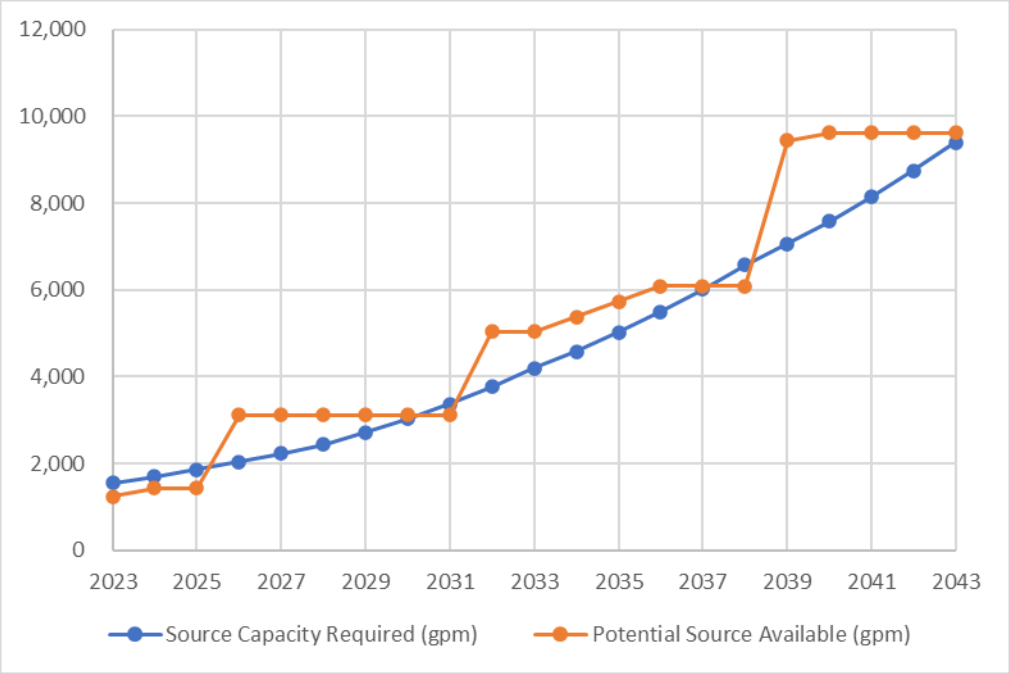


Figure III-8: Projected Source Capacity with Recommended Improvements



IV. WATER STORAGE CAPACITY ANALYSIS

Water storage capacity requirements are found in the State of Utah Public Drinking Water Regulations, R309-510. These regulations require storage for the community's culinary water system to meet one full day's average use requirement for all connections in the community in addition to fire flows for a minimum of two hours.

A. EXISTING WATER STORAGE CAPACITY

There are currently four existing water storage tanks. These tanks are identified in Figure IV-1 below. The Saddle Tank is higher than the other three, and it receives water from the springs. The outlet to the Saddle Tank is near the top of the tank allowing unpressurized outflow. In an emergency, there is a valve that can be opened to utilize the storage in the tank. The other three tanks all have the same high-water elevation and receive water from the wells through the treatment plant.

Figure IV-1: Storage Capacity Summary

Existing Tank	Available Storage (gal)
Saddle Tank	60,000
800,000 Gallon Tank	800,000
600,000 Gallon Tank	600,000
Elm Street Tank	1,000,000
Total Existing Storage Capacity	**2,460,000**

B. EXISTING REQUIRED WATER STORAGE CAPACITY

As shown in Section II-E, average water usage per ERU also known as the Average Day Demand (ADD) in the water system is 846 gpd/ERU. In general, fire flow requirements are set by the local Fire Authority or are based on building size and type of construction. This plan uses the same minimum fire flow as the previous plans of 1,500 gpm.

The required storage capacity was calculated by multiplying the ADD by the total number of ERUs currently existing in the system and adding the required fire flow of 1,500 gpm for 2 hours. When compared with the system's total storage capacity summarized above, the calculation shows that the city has surplus total storage capacity under current conditions. The results of this analysis are shown in Figure IV-2.

Figure IV-2: Required Storage Capacity (Existing Conditions)

Total Required Storage Capacity	1,404,162 gal
Total Existing Storage Available	2,460,000 gal
Existing Storage Capacity Surplus	1,055,838 gal

C. PROJECTED REQUIRED WATER STORAGE CAPACITY

The projected culinary water storage capacity required at the end of the planning period is determined from the same factors explained in Section IV.B, but the projected number of ERUs is inserted into the calculations instead of the number of existing ERUs. The results of the analysis are shown below in Figure IV-4 and Figure IV-5.

Figure IV-3: Required Storage Capacity (5-Year Planning Window)

Total Required Storage Capacity	1,756,821 gal
Total Existing Storage Available	2,460,000 gal
Existing Storage Capacity Surplus	703,179 gal

Figure IV-4: Required Storage Capacity (10-Year Planning Window)

Total Required Storage Capacity	3,196,811 gal
Total Existing Storage Available	2,460,000 gal
Existing Storage Capacity Deficit	-736,811 gal

Figure IV-5: Required Storage Capacity (20-Year Planning Window)

Total Required Storage Capacity	6,945,872 gal
Total Existing Storage Available	2,460,000 gal
Existing Storage Capacity Deficit	-4,485,872 gal

The current storage capacity is not able to provide enough water for the 10- and 20-year windows. Therefore, improvements will be required in the future.

D. STORAGE CAPACITY CHALLENGES

The storage capacity analysis results show that the city has adequate storage for their current needs. However, with the growth the city is expecting, the required storage will surpass the currently available storage capacity. In addition, there are still some concerns and shortcomings with the existing storage facilities.

- During summer months water operators have expressed concerns that because they are barely able to meet system demands with the wells during the day, and are not able to keep the tanks full . Therefore, the system does not have the full available storage shown in the calculation above.

- The water system consists of a single pressure zone. There are multiple areas around the system within each of the community's limits that are at an elevation higher than the existing tanks can serve and still meet pressure requirements.

E. RECOMMENDED WATER STORAGE CAPACITY IMPROVEMENTS

Improvements need to be made to provide storage for the projected growth. An analysis was done to determine the location of the ERUs at the end of the planning period based on the available information regarding upcoming development mentioned in Section II.B. The system was divided into six regions and the total projected ERUs were placed in their corresponding region. This resulted in the following total projected ERUs per region:

- Northeast: 251 ERUs
- Northwest: 5,305 ERUs
- Central East: 376 ERUs
- Central West: 345 ERUs
- Southeast: 1,630 ERUs
- Southwest: 327 ERUs

The results of this analysis was used to determine the location and size of the recommended storage improvements. Using the minimum sizing requirement of 846 gpd/ERU a storage requirement was calculated for each region. This results in the following approximate storage required for each region:

- Northeast: 215,000 Gallons
- Northwest: 4,500,000 Gallons
- Central East: 320,000 Gallons
- Central West: 300,000 Gallons
- Southeast: 1,400,000 Gallons
- Southwest: 280,000 Gallons

The areas that require the most storage is the Northwest and Southeast. The existing tanks are able to provide the storage required for the other four regions. To reach the required storage the system needs storage in the following locations:

- Northwest: 4,000,000 Gallons
- Southeast: 500,000 Gallons

This additional 4.5 million gallons of storage will reach the states minimum sizing requirements. To provide emergency storage this plan also recommends an additional 1 million gallons of storage. This plan recommends 4 different storage projects be installed within the planning period to provide this additional storage. The recommended projects are as follows:

1. 1 TO 5 YEAR IMPROVEMENTS

- Sandhill Tank 1 – This tank would be constructed above the Elm Street tank to create a higher-pressure zone that would cover the area north of Utah Avenue and east of the highway. This project would include a booster pump to get water to the tank and valving to create the new pressure zone. It is recommended this tank be at least a 2 million gallons.

2. 6 TO 10 YEAR IMPROVEMENTS

- There are no recommended improvements for this planning period.

3. 11 TO 20 YEAR IMPROVEMENTS

- Trailhead Tank - This tank would be installed on the same site as the two wells recommended in Section III-D in the area Squirrel Canyon. This tank would serve two purposes. First, it would collect the water from the proposed Trailhead Wells and the Hildale Groundwater Project wells. The second purpose is to create a higher-pressure zone on the northeast side of Hildale. This pressure zone would serve the existing services and new development up the canyons north of Williams Avenue. This plan recommends the tank capacity to be 500,000 gallons, but the capacity should be reevaluated after the city receives results on how much water can be obtained from Trailhead Well 1.

- South Concrete Tank – In the southeast region of Colorado City, additional storage is required to provide storage for the new developments that are anticipated to be built in the area. It is recommended that the tank be 1,000,000 gallons and installed to be at the same elevation as the existing tanks.

- Sandhill Tank 2 – Recently Hildale City annexed land west of the previous city limits. There are new developments for this area in the preliminary planning stages for this area and it is anticipated that these developments will be started within the planning window. This tank would be used to serve development in this area. This plan uses a recommended storage capacity of 2,000,000 gallons and anticipates that the tank will be located in a similar area and elevation as the Sandhill Tank 1. As these developments progress further along the planning stages it is recommended that the size and location of this tank be reevaluated.

These recommended storage improvements are summarized in Figure IV-5. Appendix D includes an exhibit showing the location of these improvements.

Figure IV-6: Summary of Recommended Storage Improvements

Proposed Tank	Available Storage	Recommended Elev. (ft)	Est. Installation Date
Sandhill Tank 1	2,000,000	5,340	2025
Trailhead Tank	500,000	5,270	2034
South Concrete Tank	1,000,000	5,160	2035
Sandhill 2 Tank	2,000,000	5,340	2038
Total Projected New Storage	5,500,000		

F. STORAGE CAPACITY SUMMARY

Figure IV-7 and Figure IV-8 show the comparison between the available storage capacity and the projected required storage capacity. The available storage capacity in Figure IV-8 represents the storage capacity available with the implementation of the recommended improvements.

Figure IV-7: Projected Storage Capacity with Existing Conditions

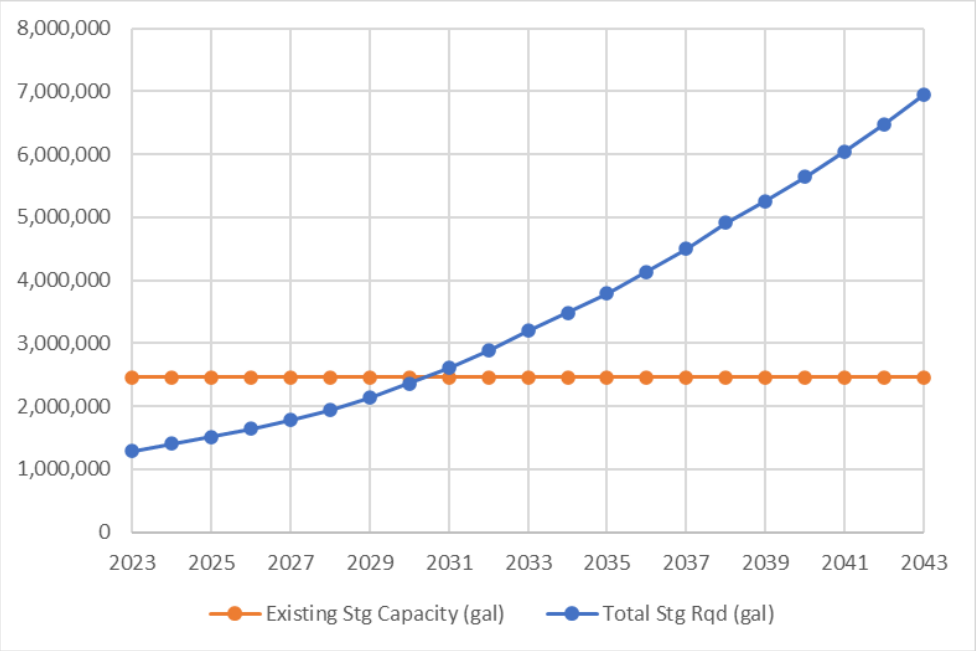
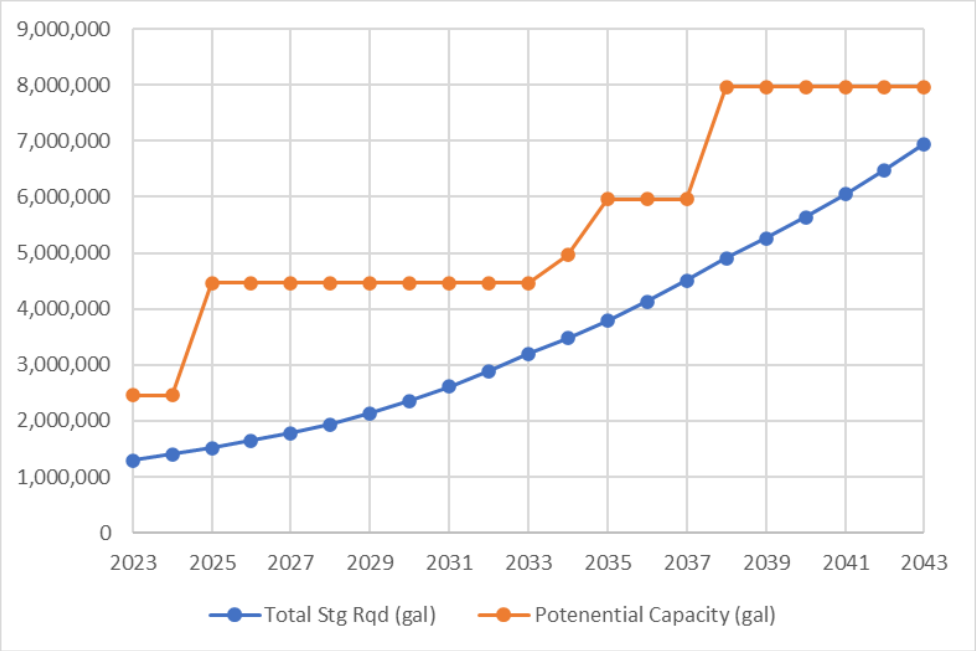


Figure IV-8: Projected Storage Capacity with Recommended Improvements



V. WATER TREATMENT REQUIREMENTS AND ANALYSIS

A. GENERAL REQUIREMENTS

The State of Utah Public Drinking Water Regulations, in accordance with the National Safe Drinking Water Act, have adopted "primary" regulations for the protection of public health and "secondary" regulations related to taste and aesthetics. The regulations recommend that all culinary water sources have provisions for continuous disinfection. Hildale and Colorado City have a culinary water treatment facility to treat the existing wells to meet the State's requirements.

B. EXISTING TREATMENT FACILITIES

The existing culinary water treatment plant uses a greensand filtration process which includes pretreating the water with potassium permanganate. The plant contains 6 pressure vessels designed to operate in parallel and treat 2,400 gpm. However, based on available data and communicating with system staff, the plant has demonstrated a functional capacity to treat approximately 2,000 gpm. The treatment plant needs to be able to treat more than the PDD so the system doesn't run out of water. Figure V-1 below shows how the treatment plant capacity compares to the PDD.

Figure V-1: Required Treatment Capacity (Existing Conditions)

Total Required Source Capacity (PDD)	1,700 gpm
Total Existing Treatment Capacity	2,000 gpm
Existing Source Capacity Surplus	300 gpm

C. PROJECTED WATER TREATMENT CAPACITY

As the communities continue to grow, the demands on the system will grow as well. The treatment plants will need to accommodate the increasing PDD. Below is a summary of the projected treatment capacity in relation to future treatment requirements.

Figure V-2: Projected Required Treatment Capacity (5-Year Planning Window)

Total Required Source Capacity (PDD)	2,440 gpm
Total Projected Treatment Capacity	2,000 gpm
Existing Treatment Capacity Deficit	-440 gpm

Figure V-3: Projected Required Treatment Capacity (10-Year Planning Window)

Total Required Source Capacity (PDD)	4,190 gpm
Total Projected Treatment Capacity	2,000 gpm
Existing Treatment Capacity Deficit	-2,190 gpm

Figure V-4: Projected Required Treatment Capacity (20-Year Planning Window)

Total Required Source Capacity (PDD)	9,397 gpm
Total Projected Treatment Capacity	2,000 gpm
Existing Treatment Capacity Deficit	-7,397 gpm

The existing treatment plant will not be able to treat enough water beyond the 5-year planning window. Improvements will need to be made to expand the treatment capacity in the near future.

D. RECOMMENDED WATER TREATMENT FACILITY IMPROVEMENTS

As mentioned before, the treatment plant has a surplus under existing conditions but will need to be improved within the next few years. The following recommendations are made to improve the treatment capacity:

1. 1 TO 5 YEAR IMPROVEMENTS

- Raw Water Transmission Line - The raw water transmission lines which carry water from the wells to the treatment plant should be improved. These lines are old, undersized, and have iron and other mineral deposits adhering to the pipe. It is possible the amount of flow going to the treatment plant is restricted by these deposits. This project is a part of the Mohave County ARPA Water project and it is currently in the design phase. It is recommended that a new 12" transmission line be installed in Richard St. to convey water from the wells south of the treatment plant. It is also recommended that access points be installed that allow water operators to flush and clean out the lines on the new line and on the remaining existing raw water lines.

- Small Treatment Plant – The treatment capacity needs to be increased within the 5-year planning window, so it is recommended that a new treatment plant be constructed. This plant is recommended to treat approximately 1,600 gpm. There is no specific location selected for this plant, however it is recommended that it be built near the Power Plant well so that it can be incorporated into the culinary water system.

2. 6 TO 10 YEAR IMPROVEMENTS

- There are no recommended improvements for this planning period.

3. 11 TO 20 YEAR IMPROVEMENTS

- Additional Treatment Capacity Phase I - With the previous plant implemented, the treatment facilities will again be at a deficit again in the 11-20-year window. An additional 3,000 gpm will need to be added. This can be accomplished by either expanding the previous plant or building an entirely new plant. For planning purposes this report assumes

that a new treatment plant will be constructed. There is no location selected for a new plant, but once a well site study has been completed, it's recommended that the location be central to the additional wells that are constructed.

- Additional Treatment Capacity Phase II – In this planning window, an additional 3,000 gpm is necessary to be able to treat enough water for the system. There is no direct recommendation for this, however some options include improving the existing plant, expanding upon the Phase I Improvements, or constructing a new plant. The EOPC in Appendix C shows the cost of constructing a new plant.

This plan only identifies the deficit in treatment capacity and recommends general projects to make up the deficit. It does not include a detailed analysis or evaluation of treatment options or equipment.

E. TREATMENT CAPACITY SUMMARY

Figure V-5 and Figure V-6 show the comparison between the available treatment capacity and the projected required treatment capacity. The available treatment capacity in Figure V-6 represents the treatment capacity available with the implementation of the recommended improvements.

Figure V-5: Projected Required Treatment Capacity

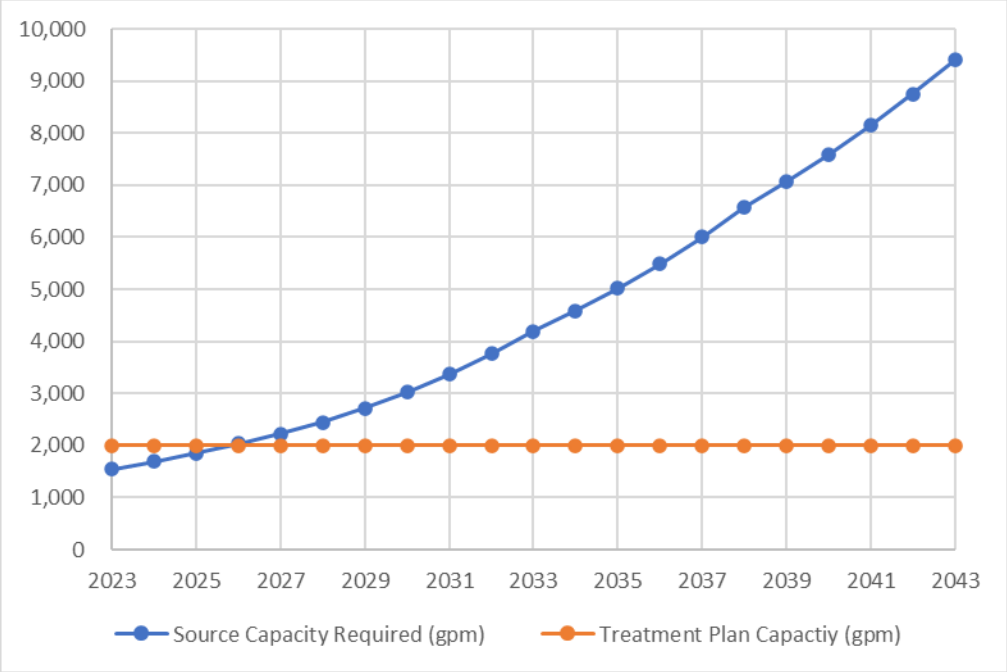
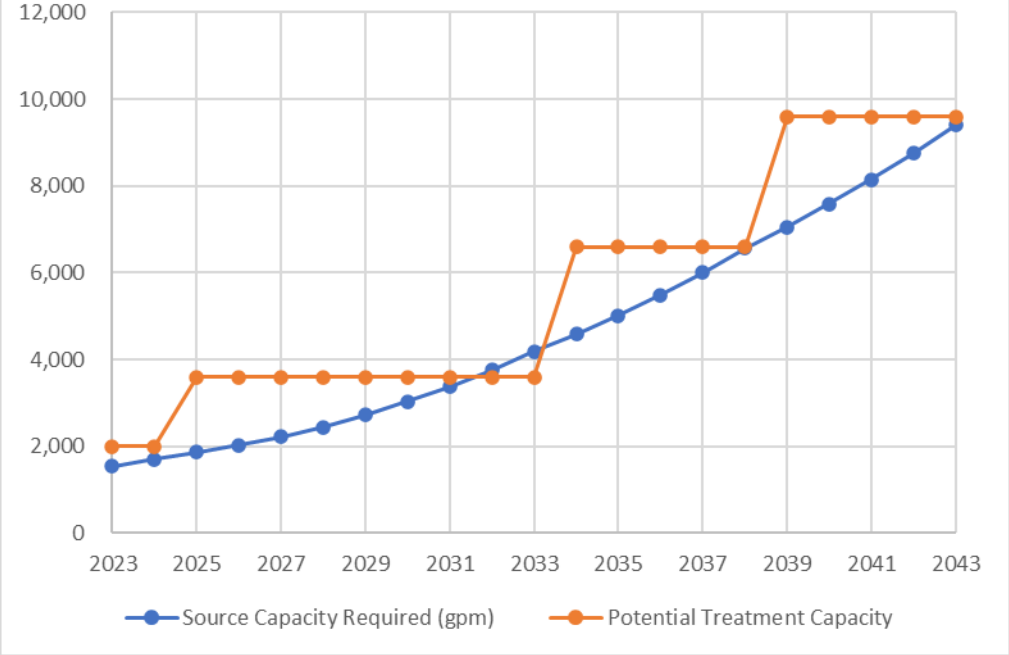


Figure V-6: Projected Available Treatment Capacity with Recommended Improvements



VI. WATER DISTRIBUTION SYSTEM ANALYSIS

The State of Utah Public Water Regulations, R309-105-9, states three pressure conditions which must be met to demonstrate adequate service capacity of a system. These conditions are:

- At least 40 psi must be retained as residual pressure in the distribution system under a Peak Day Demand (PDD).
- At least 30 psi must be retained as residual pressure in the distribution system under Peak Instantaneous Demand (PID)
- At least 20 psi must be retained as residual pressure in the distribution system under PDD plus fire flow conditions.

A. EXISTING DISTRIBUTION SYSTEM ANALYSIS

The existing PDD and PID were calculated in Section II. These flows are shown below:

- PDD – 1,692 gpd/ERU = 1,699 gpm with the existing number of ERUs
- PID – 2,446 gpm

As mentioned in Section IV.B, this report uses a fire flow of 1,500 gpm.

The existing Hildale and Colorado City culinary water distribution system has been modeled using the computer program WaterGEMS by Bentley Systems, Inc. For the existing system network there are areas which provide less than the required 40 psi of pressure for PDD, areas that provide less than 30 psi for PID, and areas that do not provide adequate fire flow. For the most part, the deficiencies in each of these requirements fall in the same areas of the system. Exhibits showing the areas of low pressure and fire flow are found in Appendix D. Below is a summary of these areas:

- Northwest Hildale (area between Utah Avenue and the Elm Street tank) – This area suffers from poor fire flow, lack of hydrants, and low pressure during PDD and PID. Fire flows in this area have been modeled as low as 253 gpm during PDD. This is largely the result of proximity to the elevation of the Elm St. tank. Pressures during PDD and PID are as low as 17 psi and 14 psi respectively.

- Northeast Hildale (area north of Jessop Avenue and west of Carlin Street) – This area suffers from poor fire flow, lack of hydrants, and low pressure during PDD and PID. Fire flows in this area have been modeled as low as 175 gpm during PDD. This is largely the result of proximity in elevation to the tanks, smaller line sizes, and lack of looping. Pressure during PDD and PID are as low as 27 psi and 21 psi respectively.

- East Colorado City (Between Edson Avenue and E Johnson Avenue) – This area suffers from poor fire flow and slightly low pressures during PDD and PID scenarios. Fire Flows

have been modeled as low as 544 gpm during PDD. This is largely due to the elevation of the area being too close to the same elevation of the existing tanks.

B. PROJECTED DISTRIBUTION SYSTEM ANALYSIS

The projected distribution system analysis is performed using the same assumptions as in the existing system analysis, except that the projected number of connections for the 20-year planning window is inserted into the calculations. The results of this calculation for both PDD and PID are shown below:

- PDD – 1,531 gpd/ERU = 9,387 gpm with the projected number of ERUs
- PID – 11,412 gpm

The same water model that was used to examine the existing distribution system was used to analyze the scenarios of the projected system at the end of the 20-year window. With the relatively high projected growth rate, according to the model, the entire system does not meet the requirements of R309-105-9. The recommended improvements in Section V.D and Section VI.D and are intended to keep the system in compliance with the state code at the end of the 20-year planning window.

C. FIRE HYDRANTS

State regulations require all new fire hydrants to be served from 8" diameter or larger pipelines unless it can be proven through the use of modeling that 6" lines are sufficient. There are several existing hydrants in the system that are on 6" or smaller pipes.

Utah state requirements also state that hydrants must be placed so no structure is further than 250 feet away from a hydrant. This means that generally, hydrants should be placed no more than 500 feet away from each other. There are numerous locations throughout the system where additional fire hydrants are needed to meet the required spacing.

D. RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS

From the system deficiencies observed in the analysis, this plan recommends the following improvements:

1. 1 TO 5 YEAR IMPROVEMENTS

- Fire Hydrants – Install additional fire hydrants to meet the minimum required spacing. In placing these new hydrants, some smaller lines will need to be replaced with 8" lines to meet the requirements mentioned above. It is recommended that this project replace all

undersized lines which are not already included in the other improvements. This project would help bring the system into compliance with fire flow requirements.

- Upper Pressure Zone Improvements – Install a new 8" diameter water main on Jessop Avenue and Newell Avenue from Juniper Street to Redwood Street. This will provide looping and help create the pressure zone that will be implemented with the new Sandhill Tank 1. This project involves disconnecting 6 North/South lines in Utah Avenue so all flow going south will flow through one PRV connecting the two pressure zones.

- Northwest Hildale Transmission Line – As mentioned in previous sections, Hildale City has recently annexed new land west of the current city boundary. Currently there is no water infrastructure in place to provide water to this area. A transmission line would need to be installed from the Sandhill 1 tank west to the new development areas. This plan assumes that this would need to be a 16" line from Sandhill Tank 1 to the edge of the new annexation area.

- Canyon Street Line – Install a new 8" water main in Canyon Street from Memorial Street to Newel Avenue. This would provide looping to the northeast Hildale area and help mitigate some of the low pressures and low fire flows. This water main would also act as a trunkline for delivering water from the new wells in the Hildale Groundwater Project and the Trailhead Wells.

2. 6 TO 10 YEAR IMPROVEMENTS

- Hildale Street Line – Install a new 8" water main along Hildale Street from Academy Avenue to Cooke Avenue. This will provide looping to northern Colorado City and provide an additional line crossing the river.

3. 11 TO 20 YEAR IMPROVEMENTS

- Southwest Hildale Transmission Line – As the area west of Hildale City is developed, an additional transmission line should be constructed to provide additional looping to the system. The size and exact location of this line will depend on the timing and location of new development in the west side of the city. Depending on how the area develops, it is possible that this project will be installed in the earlier planning window instead of the Northwest Hildale Transmission Line.

- Transmission Line to Airport – Install a new 12" line extending south on Township Avenue towards the airport. The purpose of this line is to provide water service to potential commercial and industrial developments.

These recommended improvements are summarized in Figure VI-1. Appendix D includes an exhibit showing the location of these improvements.

Figure VI-1: Summary of Recommended Distribution Improvements

Proposed Improvement	Est. Installation Date
Fire Hydrant Project	2024
Upper Pressure Zone Improvements	2026
Canyon Street Line	2028
Northwest Hildale Transmission Line	2028
Hildale Street Line	2030
Southwest Hildale Transmission Line	2040
Transmission Line to Airport	2042

VII. WATER AVAILABILITY

A major concern for the community is long term availability of their water source. With the ongoing drought, this is a concern for most, if not all, communities in the surrounding counties. The following are ideas that the city could investigate to potentially lengthen the availability of water in the area. These ideas are not recommended improvements but starting points for future conversations.

A. WATER CONSERVATION PROGRAM

Implementing a water conservation program is a good way to reduce current water usage and prolong water availability as well as defer the need for some water infrastructure improvements. A conservation program is cheap in that it does not require any construction of infrastructure prior to implementation. Below is a potential list of items that could be included in such a program:

- Provide education on how much water local grasses and trees require and encourage residents to limit outdoor watering to not exceed what is needed.
- Perform a "water audit" on city owned irrigation to determine if outdoor water use could be reduced on city owned property.
- Look into capturing rainwater for outdoor watering. (This would require some investigation on how much water Utah and Arizona will allow to be captured and used)
- Provide incentives for residents to change their existing landscaping to something which requires less water such as Xeriscape.
- Add water conservation language in the Building and Zoning Codes

B. CONSTRUCTION WATER

Currently construction water is typically obtained from fire hydrants. This means that the construction in town typically uses culinary water for construction. This may not be a major usage of the culinary water system, but there may be some inexpensive options to provide non culinary grade water for use as construction water.

The Power Plant Well is currently unavailable for use in the culinary water system. This well could be set up with a connection to provide non culinary grade construction water. While this option does alleviate some strain from the culinary water system, it is still using the same aquifer (source) that the culinary water system is using.

C. RECYCLE BACKWASH WATER AT TREATMENT PLANT

Part of the process of the existing treatment plant includes backwashing the filters occasionally with clean, culinary grade water. Currently the backwash water is sent into the sewer system which is common in many similar plants. It is possible to capture the backwash water, reuse a portion of it, and send it back through the plant. This option saves a minimal amount of water, backwashes do not happen frequently, and they do not use a large amount of water per backwash. However,

this adjustment would save water and should be considered when making future improvements to the treatment facility.

D. SECONDARY WATER SYSTEM

Implementing a secondary water system would be a major benefit to the culinary water system. A secondary system in Hildale and Colorado City would reduce the culinary water use by roughly 40%. This reduction would greatly help with the deficiencies discussed in previous sections of this plan. However, constructing a new water system from the ground up is not cheap, and the added irrigation user rate needed to implement a new system would increase most customer water bills. It is possible to install a complete system in phases or install a small system just for parks or specific high outdoor use areas.

E. WASTEWATER REUSE

Treating wastewater for reuse is an option that would provide more water which is not coming from the same sources as the culinary water system. Treating wastewater sufficiently to be used for human consumption is very expensive and not likely practical for Hildale and Colorado City. However, reuse could be used for things such as construction water or irrigation for parks and agriculture that is not for human consumption. Treatment to this level is cheaper and may provide a cost-effective alternative for the city.

F. INSTALLING AUTOMATIC METERING

Installing instant read smart meters in the system would provide multiple benefits such as providing accurate usage data, acting as a leak detection system, and educating water users on their usage to encourage conservation. Smart metering can record usage to provide actual data for finding the ADD, PDD, and PID.

VIII. SUMMARY OF RECOMMENDED IMPROVEMENTS

A. PRIORITY OF IMPROVEMENTS

Figure VIII-1 shows a summary of the proposed improvements with the estimated cost for the project in today's dollars, the estimated year the improvements will be installed and the estimated cost of the project accounting for inflation. This plan uses an assumed inflation rate of 3%.

Figure VIII-1: Summary of Recommended Improvements

Project	Cost Estimate	Est Year of Installation	Cost Estimate With Inflation
Source Improvements			
Treatment Plant Wells	$ 1,288,700	2024	$ 1,327,400
5 Year Arizona Well Field	$ 3,333,400	2024-2028	$ 3,642,500
5 Year Utah Well Field	$ 6,923,700	2024-2028	$ 7,565,700
10 Year Arizona Well Field	$ 3,809,600	2029-2033	$ 4,970,700
10 Year Utah Well Field	$ 7,912,800	2029-2033	$ 10,324,400
Trailhead Well 1	$ 2,445,300	2034	$ 3,384,900
Trailhead Well 2	$ 1,713,100	2034	$ 2,371,300
Hildale Groundwater Project PH I	$ 3,793,500	2035	$ 5,408,600
Hildale Groundwater Project PH II	$ 4,220,100	2036	$ 6,197,400
Hildale Groundwater Project PH III	$ 3,105,400	2040	$ 5,132,800
20 Year Arizona Well Field	$ 6,666,800	2033-2042	$ 11,690,300
20 Year Utah Well Field	$ 13,847,400	2033-2042	$ 24,281,500
Source Subtotal	$ 59,059,800		$ 86,297,500
Storage Improvements			
Sandhill Tank 1	$ 5,938,100	2025	$ 6,299,700
Trailhead Tank	$ 2,875,500	2034	$ 3,980,400
South Concrete Tank	$ 4,432,500	2035	$ 6,319,700
Sandhill Tank 2	$ 6,475,100	2038	$ 10,088,000
Storage Subtotal	$ 19,721,200		$ 26,687,800
Treatment Improvements			
Raw Water Transmission Line	$ 1,092,500	2024	$ 1,125,300
Small Treatment Plant (1,600 gpm)	$ 5,904,800	2025	$ 6,264,400
Additional Treatment Capacity PH1	$ 8,739,000	2034	$ 12,096,800
Additional Treatment Capacity PH2	$ 10,312,200	2039	$ 16,548,100
Treatment Subtotal	$ 19,051,200		$ 36,034,600
Distribution Improvements			
Fire Hydrant Project	$ 1,733,500	2024	$ 1,785,500
Upper Pressure Zone Improvements	$ 846,500	2026	$ 925,000
Canyon St. Line	$ 388,900	2028	$ 450,800
Northwest Hildale Transmission Line	$ 1,977,400	2028	$ 2,292,300
Hildale St. Line	$ 454,390	2030	$ 558,800
Southwest Hildale Transmission Line	$ 903,800	2040	$ 1,493,800
Transmission Line to Airport	$ 2,039,350	2042	$ 3,576,000
Distribution Subtotal	$ 8,343,840		$ 11,082,200
Grand Total	**$ 106,176,040.00**		**$ 160,102,100.00**

The detailed cost estimate for each project is located in Appendix C.

IX. POSSIBLE FINANCING PLAN

The purpose of this possible finance plan is to show what a funding plan may look like to pay for the projects recommended for 2024. The city may also choose to complete the improvements in separate smaller projects. The projects are assumed to be paid with loan and grant money. It should be noted that agencies may require some amount of self-participation in order to provide funding. This plan assumes a 10% self-participation match.

Figure IX-1 outlines a possible financing plan from the Utah Division of Drinking Water (DDW). This plan assumes 20% of the funding from DDW will be grant and 70% will be loan with the remaining 10% as self-participation. The loan is assumed to be at a 4% interest rate and payback term of 20 years. It is possible a lower interest rate or higher portion of grants will be available. It is recommended that as the city prepares to start this project they contact DDW and other funding agencies such as the Water Infrastructure Finance Authority of Arizona, US Department of Agriculture - Rural Development, or the Utah Community Impact Board to determine what funding is available and where they can get the best financing terms.

The possible financing plan shown in Figure IX-1 results in an annual loan payment of $224,525. This annual payment along with other O&M expenses for the water system, would require an average monthly charge for culinary water user rates to be $51.35 per ERU.

The city is looking into adjusting their culinary water impact fees. A majority of the recommended improvements in this plan are fully or partially Impact Fee eligible. Collecting impact fees would help to fund the recommended improvements.

Figure IX-1: Possible Financing plan

HILDALE CITY/TOWN OF COLORADO CITY						
POSSIBLE FINANCING PLAN 2024 projects						
Total Project Cost (Construction + Professional Services):						**$ 4,238,200**
Proposed Funding:	**% of Proj.**	**Rate**	**Term**		**Principal**	**Est. Payment**
Self Participation	10%			$	423,820.00	
DDW Grant	20%			$	762,876.00	
DDW Loan	70%	4.00%	20	$	3,051,504.00	$224,535.01
TOTAL PROJECT ANNUAL PAYMENT (2023):						**$224,535.00**
O&M EXPENSES: (First Year of New Debt Service Payment)						
Office Expenses and Travel						$ 38,867.63
Repairs and Maintenance						$ 375,825.72
Utilities						$ 189,954.97
Legal and Professional Fees						$ 68,482.00
Renewal and Replacement Fund						$0
Interest Income						$ (5,962.58)
			Subtotal Expenses:			**$667,168**
EXISTING DEBT SERVICE						
Existing Debt Service						$0
			Subtotal Existing Annual Debt Service:			**$0**
			GRAND TOTAL EXPENSES:			**$891,703**
ANNUAL INCOME						
Impact Fees Expended for 2023 Projects						$ -
Total Number Of ERU						1,447
Average Monthly Water User Rate/ERU						**$51.35**
Charges for Services, Fees, etc.						$891,703
			GRAND TOTAL INCOME:			**$891,703**

X. IMPACT FEE ANALYSIS

This plan constitutes an Impact Fee Facilities Plan (IFFP) and Impact Fee Analysis (IFA) for the Hildale City and Town of Colorado City culinary water system and identifies the existing demands on the system as well as future demands which will be placed on the system due to growth. A community may charge an impact fee to provide funding for the projects required by this growth. The total cost that is eligible for the impact fee assessment is equal to the portion of a planned project in the planning window that is attributed or caused by growth. The combined costs of these projects are divided by the projected number of new ERUs that will be added to the system. Impact fees can also cover debt service that is incurred by projects that provide excess capacity to be used for growth.

While this master plan uses a planning window of 20 years, the IFFP & IFA use a planning window of 10 years encompassing the start of 2024 to the end of 2033. This shorter window is based on regulations on impact fee collection and use. Impact fees must be encumbered within six years of their receipt according to Utah State Impact Fee law and within 10 years of receipt according to Arizona State Development Fee law. This plan accounts for all incoming fees to be encumbered for eligible projects and debts in the continuous six-year window to satisfy the more stringent law.

A. EXISTING IMPACT FEES

Currently, neither community charges a culinary water Impact Fee.

B. LEVEL OF SERVICE

Impact Fee laws prohibit the use of Impact Fees to increase the level of service beyond that which is currently provided. This requires a determination of the existing level of service upon which to base future improvements. The existing level of service provided by the culinary water system, and which was used to evaluate the system in previous sections of the report, is the Utah State Code minimum sizing requirements.

C. PROPORTIONATE SHARE ANALYSIS

Impact fee laws in Utah and Arizona require that only that portion of the facility, whether existing, new, or future, that is required for growth may be included in the impact fee calculations. A proportionate share analysis must be made of all the facilities to determine a reasonable and logical ratio of cost for each improvement.

1. WATER SOURCE

The analysis in Section III shows that the existing system has a source capacity deficit of 465 gpm. Because this is an existing deficiency, the recommended improvements that fix this deficiency are not impact fee eligible. It is anticipated that the deep and shallow treatment plan wells are projected to provide 200 gpm which is less than the existing deficit of 465 gpm and therefore

are considered non-impact fee eligible. The 5-Year well field for Utah and Arizona combined are projected to provide 1,680 gpm. This will bring the capacity above the 465 deficit and provide an additional 1,435 gpm. The additional 1,435 gpm above the existing capacity deficit is additional source capacity that is needed for the projected growth and therefore impact fee eligible. This results in both the 1-5 Year Arizona Well Field and 1-5 Year Utah Well Field projects being 84.3% impact fee eligible.

All of the other wells projects within the 10 year planning period provide additional source that is needed for the projected growth and are considered 100% impact fee eligible. This includes the following projects:

- 10 Year Arizona Well Field
- 10 Year Utah Well Field

2. WATER STORAGE

Only one water storage project is in the 10-year planning window, Sandhill Tank 1. The storage that is provided by this tank is needed for the projected growth. Therefore, the tank is considered 100% impact fee eligible.

3. WATER TREATMENT

The Raw Water Transmission Line is an improvement recommended in the water treatment section. This project helps with the operation and maintenance of the raw water line to the existing treatment plant and does not provide additional treatment capacity. Because this project does not provide any additional treatment capacity needed for the projected growth it is not considered impact fee eligible.

This plan has one recommended improvement to water treatment that will add to the treatment capacity. The Small Treatment Plant provides additional treatment capacity that is needed for the projected growth and is considered 100% impact fee eligible.

4. WATER DISTRIBUTION

A majority of the proposed water distribution projects in the 10-year planning period serve to improve the existing level of service for the system users or provide currently needed fire flows. These projects are not considered impact fee eligible. However, there are a few projects that would extend the service area to allow for growth in areas that currently do not have access to the water system and therefore are unable to be developed. These projects include the following:

- Upper Pressure Zone Improvements. – This project provides increased pressures for the existing units located north of Utah Avenue. This is an area that has historically had issues with low pressures and will fix an existing deficiency. However, this project also allows for the system to extend further north and allow for growth and development in new areas. Because this project fixes existing deficiencies and allows for the extension of the system it is considered 50% impact fee eligible.

- Northwest Hildale Transmission Line – This project extends the system northwest of Hildale and allows for areas to be developed that currently do not have access to the culinary water system. Because this project provides an area for growth to occur it is considered 100% impact fee eligible.

5. FUTURE PLANNING

It is recommended that the capital facilities plan be updated every five (5) years. Since this plan update falls within the 10-year planning period, it is 100% impact fee eligible.

D. ZONAL IMPACT FEES

For impact fees, Hildale and Colorado City each adopt their own impact fee ordinance for their corresponding communities. With the communities being in different states, they both have different Impact Fee laws that need to be followed for that ordinance. The recommended improvements also do not affect each community equally. Because of these factors the communities desire to establish a zonal impact fee with each community being its own zone with its own impact fee.

With the projected growth in the 10-year planning window, it is expected there will be an additional 2,417 ERUs added to the system. Based on information currently available regarding future developments, it is anticipated that more of the additional ERUs will be located in Hildale than in Colorado City. For this reason, it is assumed that 55% of the 2,417 ERUs will be in Hildale, resulting in 1,330 ERUs. The remaining 1,088 additional ERUs, or 45%, will be located in Colorado City.

The Impact Fee Analysis will establish the impact fee eligible cost for each of the eligible projects and that cost will be divided amongst both zones based on the percentage of benefit that project provides to each zone.

E. IMPACT FEE ANALYSIS

The total cost that is eligible for the impact fee assessment is equal to the portion of any planned water improvements project that will be constructed in the next 10 years to accommodate new growth. The combined total cost that is due to new growth is divided by the projected number of new ERUs that will be added to the system.

It is recommended that Hildale City and the Town of Colorado City begin charging impact fees per ERU. Figure X-1 shows the maximum allowable impact fee per ERU for each zone. Should a lower impact fee be adopted, the remaining construction cost deficit would need to be funded through other means. Appendix E contains the analysis performed to determine the impact fee.

Figure X-1: Maximum Zonal Impact Fee

Zone	Max Allowable IF
Hildale	$ 12,580
Colorado City	$ 11,807

It is important to note that these impact fees are for the improvements summarized in this Plan and do not provide for the city to design and build anything beyond the proposed projects. All new additions to the system will need to be considered in the impact fee calculations. Otherwise, the developer should be required to make the improvements.

F. IMPACT FEE CERTIFICATION

In general, it is beneficial to update this impact fee facilities plan and analysis at least every five years, or more frequently if drastic growth or changes affect the assumptions and data in this plan. It is assumed that this plan will be updated as recommended.

There are items relating to impact fees that Hildale City and the Town of Colorado City must consider when planning for, collecting, and expending impact fees in accordance with Utah Code 11-36a-101 and Arizona Code 9-463.05.

Staff from each community must understand that impact fees can only be expended for a system improvement that is identified in the Impact Fee Facilities Plan and that is for the specific facility type for which the fee was collected. Impact fees must be expended or encumbered for permissible use within six years of their receipt unless Utah Code 11-36a-602(2)(b) applies. Also, impact fees must have proper accounting (track each fee in and out) in accordance with Utah Code 11-36a-601 and Arizona Code 9-463.05.

In accordance with Utah Code 11-36a-306 a certification of impact fee analysis is in Appendix F.

APPENDIX A
Growth Rate Analysis

Population & Growth Rate								
Calandar Year	Est. Growth Rate	Hildale Population	Colorado City Population	Total Population	Hildale Connections	Colorado City Connections	Total Connections	Number of ERUs
2023		3,224	5,358	8,582	435	790	1,224	1,315
2024	10.0%	3,547	5,894	9,440	478	869	1,347	1,446
2025	10.0%	3,901	6,483	10,384	526	956	1,481	1,591
2026	10.0%	4,291	7,132	11,423	578	1,051	1,630	1,750
2027	10.0%	4,720	7,845	12,565	636	1,156	1,792	1,925
2028	10.0%	5,192	8,629	13,822	700	1,272	1,972	2,117
2029	12.0%	5,816	9,665	15,480	784	1,425	2,208	2,371
2030	12.0%	6,513	10,825	17,338	878	1,596	2,473	2,656
2031	12.0%	7,295	12,124	19,419	983	1,787	2,770	2,974
2032	12.0%	8,170	13,578	21,749	1,101	2,001	3,103	3,331
2033	12.0%	9,151	15,208	24,359	1,233	2,242	3,475	3,731
2034	10.0%	10,066	16,729	26,794	1,357	2,466	3,822	4,104
2035	10.0%	11,073	18,401	29,474	1,492	2,712	4,205	4,514
2036	10.0%	12,180	20,241	32,421	1,641	2,984	4,625	4,966
2037	10.0%	13,398	22,266	35,663	1,806	3,282	5,088	5,462
2038	10.0%	14,738	24,492	39,230	1,986	3,610	5,596	6,009
2039	8.0%	15,917	26,452	42,368	2,145	3,899	6,044	6,489
2040	8.0%	17,190	28,568	45,758	2,317	4,211	6,528	7,008
2041	8.0%	18,565	30,853	49,418	2,502	4,548	7,050	7,569
2042	8.0%	20,050	33,321	53,372	2,702	4,912	7,614	8,175
2043	8.0%	21,654	35,987	57,641	2,918	5,305	8,223	8,829

APPENDIX B
Water Use Analysis

Year	Total Usage (Thousand Gallons)	Number of Connections	Usage per Conn (gpd/conn)	Number of ERUs	Usage per ERU (gpd/ERU)
2018	303,105	863	962	848	979
2019	251,780	763	904	806	856
2020	285,109	799	978	855	914
2021	279,736	855	896	924	829
2022	309,026	1,113	761	1,195	708
5-Year Avg:	285,751	879	900	925	846
This Master Plan will use a historic daily usage of 846 gpd/ERU					

Peak Instantaneous Demand Calculations (State)			
Indoor Peak Instantaneous Demand			
Q=	10.8 X N^.64		N= No. of ERU
2024	Q=	1,138	gpm
	Q=	1,132	gpd/ERU
Outdoor Peak Instantaneous Demand			
Irrigation Zone 5 =		9.04	gpm/Irrigated Acre
Irrigatated Acres /ERU		0.1	Irrigated Acres/ERU
Q=	Irr Acres/ERU X Irr Zone FactorX No. ERU		
Example:			
2023	Q=	1,308	gpm

Current & Projected Required Source Capacity							
Year	# of ERU	Percent Reduction In Usage Per ERU	Peak Day Usage (gpd/ERU)	Source Capacity Required (gpm)	Existing Source Available (gpm)	Treatment Plan Capactiy (gpm)	Source Capacity Surplus/Deficit (gpm)
2023	1,315	0.0%	1,692	1,545	1,234	2,000	(311)
2024	1,447	0.0%	1,692	1,700	1,234	2,000	(466)
2025	1,592	0.5%	1,684	1,861	1,234	2,000	(627)
2026	1,751	1.0%	1,675	2,037	1,234	2,000	(803)
2027	1,926	1.5%	1,667	2,229	1,234	2,000	(995)
2028	2,119	2.0%	1,658	2,440	1,234	2,000	(1,206)
2029	2,373	2.5%	1,650	2,719	1,234	2,000	(1,485)
2030	2,658	3.0%	1,641	3,029	1,234	2,000	(1,795)
2031	2,977	3.5%	1,633	3,376	1,234	2,000	(2,142)
2032	3,334	4.0%	1,624	3,761	1,234	2,000	(2,527)
2033	3,734	4.5%	1,616	4,190	1,234	2,000	(2,956)
2034	4,107	5.0%	1,607	4,584	1,234	2,000	(3,350)
2035	4,518	5.5%	1,599	5,017	1,234	2,000	(3,783)
2036	4,970	6.0%	1,590	5,489	1,234	2,000	(4,255)
2037	5,467	6.5%	1,582	6,006	1,234	2,000	(4,772)
2038	6,014	7.0%	1,574	6,572	1,234	2,000	(5,338)
2039	6,495	7.5%	1,565	7,059	1,234	2,000	(5,825)
2040	7,015	8.0%	1,557	7,583	1,234	2,000	(6,349)
2041	7,576	8.5%	1,548	8,145	1,234	2,000	(6,911)
2042	8,182	9.0%	1,540	8,749	1,234	2,000	(7,515)
2043	8,837	9.5%	1,531	9,397	1,234	2,000	(8,163)

$$Required\ Source\ Capacity = \#ERU\ X\ \frac{gpd}{\#ERU}\ X\ \frac{1\ Day}{24\ hr}\ X\ \frac{1\ hr}{60\ min}$$

Storage Capacity Analysis								
Year	Number of ERUs	Percent Reduction In Usage Per ERU	Avg. Usage (gpd/ERU)	Storage Required (gal)	Fire Flow Stg Rqd (gal)	Existing Stg Capacity (gal)	Total Stg Rqd (gal)	Storage Capacity Surplus/Deficit (gal)
2023	1315	0.0%	846	1,112,490	180,000	2,460,000	1,292,490	1,167,510
2024	1447	0.0%	846	1,224,162	180,000	2,460,000	1,404,162	1,055,838
2025	1592	0.5%	842	1,340,098	180,000	2,460,000	1,520,098	939,902
2026	1751	1.0%	838	1,466,533	180,000	2,460,000	1,646,533	813,467
2027	1926	1.5%	833	1,604,955	180,000	2,460,000	1,784,955	675,045
2028	2119	2.0%	829	1,756,821	180,000	2,460,000	1,936,821	523,179
2029	2373	2.5%	825	1,957,369	180,000	2,460,000	2,137,369	322,631
2030	2658	3.0%	821	2,181,208	180,000	2,460,000	2,361,208	98,792
2031	2977	3.5%	816	2,430,393	180,000	2,460,000	2,610,393	-150,393
2032	3334	4.0%	812	2,707,741	180,000	2,460,000	2,887,741	-427,741
2033	3734	4.5%	808	3,016,811	180,000	2,460,000	3,196,811	-736,811
2034	4107	5.0%	804	3,300,796	180,000	2,460,000	3,480,796	-1,020,796
2035	4518	5.5%	799	3,612,005	180,000	2,460,000	3,792,005	-1,332,005
2036	4970	6.0%	795	3,952,343	180,000	2,460,000	4,132,343	-1,672,343
2037	5467	6.5%	791	4,324,452	180,000	2,460,000	4,504,452	-2,044,452
2038	6014	7.0%	787	4,731,695	180,000	2,460,000	4,911,695	-2,451,695
2039	6495	7.5%	783	5,082,662	180,000	2,460,000	5,262,662	-2,802,662
2040	7015	8.0%	778	5,459,915	180,000	2,460,000	5,639,915	-3,179,915
2041	7576	8.5%	774	5,864,506	180,000	2,460,000	6,044,506	-3,584,506
2042	8182	9.0%	770	6,298,995	180,000	2,460,000	6,478,995	-4,018,995
2043	8837	9.5%	766	6,765,872	180,000	2,460,000	6,945,872	-4,485,872

$$Required\ Storage\ Capacity = \#ERU\ X\ \frac{gpd}{\#ERU} + Fire\ Flow\ (1{,}500 gpm)\frac{60\ min}{1\ hr}\ X\ 2hr$$

Water Distribution Analysis						
Year	No. ERU	ADD (gpm)	PDD (gpm)	PID Indoor (gpm)	PID Outdoor (gpm)	PID Total (gpm)
2023	1,315	773	1,545	1,070	1,189	2,259
2024	1,447	850	1,700	1,138	1,308	2,446
2025	1,592	931	1,861	1,210	1,439	2,649
2026	1,751	1,018	2,037	1,286	1,583	2,869
2027	1,926	1,115	2,229	1,366	1,741	3,108
2028	2,119	1,220	2,440	1,453	1,916	3,368
2029	2,373	1,359	2,719	1,562	2,145	3,707
2030	2,658	1,515	3,029	1,679	2,403	4,082
2031	2,977	1,688	3,376	1,806	2,691	4,497
2032	3,334	1,880	3,761	1,941	3,014	4,955
2033	3,734	2,095	4,190	2,087	3,376	5,463
2034	4,107	2,292	4,584	2,219	3,713	5,931
2035	4,518	2,508	5,017	2,358	4,084	6,443
2036	4,970	2,745	5,489	2,507	4,493	7,000
2037	5,467	3,003	6,006	2,664	4,942	7,606
2038	6,014	3,286	6,572	2,832	5,437	8,269
2039	6,495	3,530	7,059	2,975	5,871	8,846
2040	7,015	3,792	7,583	3,125	6,342	9,467
2041	7,576	4,073	8,145	3,283	6,849	10,132
2042	8,182	4,374	8,749	3,449	7,397	10,845
2043	8,837	4,699	9,397	3,623	7,989	11,612

APPENDIX C
Engineers Opinion of Probable Cost

SUNRISE ENGINEERING
11 North 300 West, Washington Utah 84
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Treatment Plant Wells 18-Oct-23
Project Location: Colorado City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 37,800.00	$ 37,800.00
2	Pre-Construction DVD and Project Sign	1	LS	$ 1,500.00	$ 1,500.00
3	GeoPhysical Logging	1	LS	$ 15,000.00	$ 15,000.00
4	Disinfection and Capping	1	LS	$ 4,000.00	$ 4,000.00
5	Well Driller's Report	1	LS	$ 2,500.00	$ 2,500.00
6	Site Restoration	1	LS	$ 10,000.00	$ 10,000.00
7	Misc. Electrical Improvements	1	LS	$ 15,000.00	$ 15,000.00
DEEP WELL					
8	Conductor Casing	100	LF	$ 400.00	$ 40,000.00
9	20" Diameter Well Drilling	700	LF	$ 123.00	$ 86,100.00
10	12" Diameter Well Drilling - Pilot Hole	700	LF	$ 160.00	$ 112,000.00
11	12" Well Casing	600	LF	$ 170.00	$ 102,000.00
12	2" Galvanized Tremie Pipe	100	LF	$ 40.00	$ 4,000.00
13	Furnish and Install Pea Gravel	400	LF	$ 115.00	$ 46,000.00
14	Bentonite Packer	1	LS	$ 6,000.00	$ 6,000.00
15	Conductor Casing Removal	1	LS	$ 8,000.00	$ 8,000.00
16	Flow Meter	1	EA	$ 10,000.00	$ 10,000.00
17	Initial Well Development	40	HR	$ 700.00	$ 28,000.00
18	Install Pump for Development and Testing	1	LS	$ 40,000.00	$ 40,000.00
19	Well Development and Pumping	80	HR	$ 700.00	$ 56,000.00
20	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
21	Well Head, Disinfection and Capping	1	LS	$ 8,500.00	$ 8,500.00
22	Well Pad and Pipping	1	LS	$ 15,000.00	$ 15,000.00
SHALLOW WELL					
23	Conductor Casing	1	LS	$ 40,000.00	$ 40,000.00
24	16" Diameter Well Drilling	120	LF	$ 270.00	$ 32,400.00
25	8" Well Casing	80	LF	$ 100.00	$ 8,000.00
26	8" Stainless Steel Screen	40	LF	$ 300.00	$ 12,000.00
27	2" Galvanized Tremie Pipe	20	LF	$ 40.00	$ 800.00
28	Instrument Pipe	120	LF	$ 50.00	$ 6,000.00
29	Furnish and Install Fine Silica Sand	120	LF	$ 125.00	$ 15,000.00
30	Bentonite Packer	1	LS	$ 6,000.00	$ 6,000.00
31	Conductor Casing Removal	1	LS	$ 6,000.00	$ 6,000.00
32	Sanitary Grout Seal	1	LS	$ 150.00	$ 150.00
33	Flow Meter	1	LS	$ 10,000.00	$ 10,000.00
34	Initial Well Development	40	HR	$ 700.00	$ 28,000.00
35	Install Pump for Development and Testing	1	LS	$ 40,000.00	$ 40,000.00
36	Well Development and Pumping	80	HR	$ 700.00	$ 56,000.00
37	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
38	Well Head, Disinfection and Capping	1	LS	$ 8,500.00	$ 8,500.00
39	Well Pad and Pipping	1	LS	$ 15,000.00	$ 15,000.00
			SUBTOTAL		**$ 951,250.00**
			CONTINGENCY	20%	**$ 190,300.00**
			CONSTRUCTION TOTAL		**$ 1,141,600.00**
INCIDENTALS					
1	Engineering Design	4.3%	LS	$ 55,000.00	$ 55,000.00
2	Bidding & Negotiating	0.6%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.7%	HR	$ 47,600.00	$ 47,600.00
4	Topographic & Property Survey	0.4%	EST	$ 5,000.00	$ 5,000.00
5	Permitting	0.8%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.9%	EST	$ 12,000.00	$ 12,000.00
7	Miscellaneous Professional Services	0.8%	EST	$ 10,000.00	$ 10,000.00
			SUBTOTAL		$ 147,100.00
			TOTAL PROJECT COST		**$ 1,288,700.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 847
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Trailhead Well 1
Project Location: Hildale City

18-Oct-23
BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 83,600.00	$ 83,600.00
2	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
4	Subsurface Investigation	4	HR	$ 250.00	$ 1,000.00
5	Materials Sampling & Testing	1	LS	$ 7,500.00	$ 7,500.00
6	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 10,000.00	$ 10,000.00
8	Erosion Control Compliance	1	LS	$ 7,500.00	$ 7,500.00
9	Geophysical Survey	1	LS	$ 20,000.00	$ 20,000.00
10	Access and Drill Pad Construction	1	LS	$ 145,000.00	$ 145,000.00
11	Conductor Casing and Seal	100	LF	$ 650.00	$ 65,000.00
12	Drill 12" Pilot Borehole	600	LF	$ 160.00	$ 96,000.00
13	Drill 20" Reamed Borehole	600	LF	$ 123.00	$ 73,800.00
14	Geophysical Logging	1	LS	$ 9,000.00	$ 9,000.00
15	Well Installation - 12" Steel Casing	500	LF	$ 170.00	$ 85,000.00
16	Well Installation - 12" SS Screen 70 Slot	200	LF	$ 350.00	$ 70,000.00
17	Installation of Gravel Pack - 8-12	550	LF	$ 115.00	$ 63,250.00
18	Installation of Annular Grout Seal	150	LF	$ 115.00	$ 17,250.00
19	Initial Well Development	40	HR	$ 750.00	$ 30,000.00
20	Install Pump for Development and Testing	1	LS	$ 42,000.00	$ 42,000.00
21	Well Development by pumping	80	HR	$ 425.00	$ 34,000.00
22	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
23	Well Disinfecting	1	LS	$ 5,000.00	$ 5,000.00
24	Well Head	1	LS	$ 2,500.00	$ 2,500.00
25	Well Capping	1	LS	$ 750.00	$ 750.00
26	Roadway Restoration	48,000	SF	$ 6.00	$ 288,000.00
27	10" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	8,000	LF	$ 72.00	$ 576,000.00
28	10" Gate Valve Assembly	4	EA	$ 5,000.00	$ 20,000.00
29	Misc. Connections, Fittings and Tie-ins	1	LS	$ 20,000.00	$ 20,000.00
			SUBTOTAL		**$ 1,798,650.00**
			CONTINGENCY	20%	**$ 359,700.00**
			CONSTRUCTION TOTAL		**$ 2,158,400.00**
INCIDENTALS					
1	Engineering Design	4.5%	LS	$ 110,000.00	$ 110,000.00
2	Bidding & Negotiating	0.3%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.7%	HR	$ 89,900.00	$ 89,900.00
4	Topographic & Property Survey	0.7%	EST	$ 17,500.00	$ 17,500.00
5	Water Right Change Application	0.8%	EST	$ 20,000.00	$ 20,000.00
6	Funding and Administrative Services	0.5%	EST	$ 12,000.00	$ 12,000.00
7	Permitting	0.4%	EST	$ 10,000.00	$ 10,000.00
8	Miscellaneous Professional Services	0.8%	EST	$ 20,000.00	$ 20,000.00
			SUBTOTAL		$ 286,900.00
			TOTAL PROJECT COST		**$ 2,445,300.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 84
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Trailhead Well 2 18-Oct-23

Project Location: Hildale City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 32,000.00	$ 32,000.00
2	Erosion Control Compliance	1	LS	$ 5,000.00	$ 5,000.00
3	Geophysical Survey	1	LS	$ 20,000.00	$ 20,000.00
4	Access and Drill Pad Construction	1	LS	$ 50,000.00	$ 50,000.00
5	Conductor Casing and Seal	100	LF	$ 650.00	$ 65,000.00
6	Drill 12" Pilot Borehole	600	LF	$ 175.00	$ 105,000.00
7	Drill 20" Reamed Borehole	600	LF	$ 123.00	$ 73,800.00
8	Geophysical Logging	1	LS	$ 9,000.00	$ 9,000.00
9	Well Installation - 12" Steel Casing	170	LF	$ 170.00	$ 28,900.00
10	Well Installation - 12" SS Screen 70 Slot	200	LF	$ 350.00	$ 70,000.00
11	Installation of Gravel Pack - 8-12	550	LF	$ 115.00	$ 63,250.00
12	Installation of Annular Grout Seal	150	LF	$ 115.00	$ 17,250.00
13	Initial Well Development	40	HR	$ 750.00	$ 30,000.00
14	Install Pump for Development and Testing	1	LS	$ 42,000.00	$ 42,000.00
15	Well Development by pumping	80	HR	$ 425.00	$ 34,000.00
16	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
17	Well Disinfecting	1	LS	$ 5,000.00	$ 5,000.00
18	Well Head	1	LS	$ 2,500.00	$ 2,500.00
19	Well Capping	1	LS	$ 750.00	$ 750.00
20	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	150	LF	$ 65.00	$ 9,750.00
21	8" Gate Valve Assembly	1	EA	$ 2,900.00	$ 2,900.00
22	Water Right Procurement	1	LS	$ 650,000.00	$ 650,000.00
			SUBTOTAL		**$ 1,326,100.00**
			CONTINGENCY	20%	**$ 265,200.00**
			CONSTRUCTION TOTAL		**$ 1,591,300.00**
INCIDENTALS					
1	Engineering Design	2.6%	LS	$ 45,000.00	$ 45,000.00
2	Bidding & Negotiating	0.4%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	2.0%	HR	$ 33,800.00	$ 33,800.00
4	Topographic & Property Survey	0.2%	EST	$ 3,500.00	$ 3,500.00
5	Permitting	0.6%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.7%	EST	$ 12,000.00	$ 12,000.00
39	Miscellaneous Professional Services	0.6%	EST	$ 10,000.00	$ 10,000.00
			SUBTOTAL		$ 121,800.00
			TOTAL PROJECT COST		**$ 1,713,100.00**

In providing opinions of probable construction cost, the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as to the accuracy of such opinions compared to bid or actual costs.

SUNRISE ENGINEERING
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Engineer's Opinion of Probable Cost

Hildale Groundwater Project PH I 18-Oct-23
Project Location: Hildale City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 132,900.00	$ 132,900.00
2	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
4	Subsurface Investigation	4	HR	$ 250.00	$ 1,000.00
5	Materials Sampling & Testing	1	LS	$ 7,500.00	$ 7,500.00
6	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 10,000.00	$ 10,000.00
8	Erosion Control Compliance	1	LS	$ 7,500.00	$ 7,500.00
9	Geophysical Survey	1	LS	$ 23,000.00	$ 23,000.00
10	Access and Drill Pad Construction	1	LS	$ 130,000.00	$ 130,000.00
11	Conductor Casing and Seal	100	LF	$ 650.00	$ 65,000.00
12	Drill 12" Pilot Borehole	650	LF	$ 175.00	$ 113,750.00
13	Drill 20" Reamed Borehole	650	LF	$ 123.00	$ 79,950.00
14	Geophysical Logging	1	LS	$ 9,000.00	$ 9,000.00
15	Caliper	1	LS	$ 6,500.00	$ 6,500.00
16	Well Installation - 12" Steel Casing	550	LF	$ 100.00	$ 55,000.00
17	Well Installation - 12" SS Screen 70 Slot	200	LF	$ 350.00	$ 70,000.00
18	Installation of Gravel Pack - 8-12	600	LF	$ 115.00	$ 69,000.00
19	Installation of Annular Grout Seal	150	LF	$ 115.00	$ 17,250.00
20	Initial Well Development	40	HR	$ 750.00	$ 30,000.00
21	Install Pump for Development and Testing	1	LS	$ 42,000.00	$ 42,000.00
22	Well Development by pumping	80	HR	$ 425.00	$ 34,000.00
23	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
24	Well Disinfecting	1	LS	$ 5,000.00	$ 5,000.00
25	Well Head	1	LS	$ 2,500.00	$ 2,500.00
26	Well Capping	1	LS	$ 750.00	$ 750.00
27	Roadway Restoration	30,000	SF	$ 7.75	$ 232,500.00
28	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	5,000	LF	$ 65.00	$ 325,000.00
29	8" Gate Valve Assembly	8	EA	$ 2,900.00	$ 23,200.00
30	Misc. Connections, Fittings and Tie-ins	1	LS	$ 15,000.00	$ 15,000.00
31	Water Right Procurement	1	LS	$ 1,300,000.00	$ 1,300,000.00
			SUBTOTAL		**$ 2,833,800.00**
			CONTINGENCY	20%	**$ 566,800.00**
			CONSTRUCTION TOTAL		**$ 3,400,600.00**
INCIDENTALS					
1	Engineering Design	2.6%	LS	$ 100,000.00	$ 100,000.00
2	Bidding & Negotiating	0.2%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.0%	HR	$ 113,400.00	$ 113,400.00
4	Topographic & Property Survey	0.5%	EST	$ 20,000.00	$ 20,000.00
5	Funding and Administrative Services	0.3%	EST	$ 12,000.00	$ 12,000.00
5	Permitting	0.3%	EST	$ 10,000.00	$ 10,000.00
6	Environmental (Including Biological and Archeological) Report	0.9%	EST	$ 35,000.00	$ 35,000.00
8	BLM ROW Negotiation (SF299 Application & POD)	0.3%	EST	$ 10,000.00	$ 10,000.00
9	Miscellaneous Engineering Services	0.5%	EST	$ 20,000.00	$ 20,000.00
			SUBTOTAL		$ 392,900.00
			TOTAL PROJECT COST		**$ 3,793,500.00**

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Engineer's Opinion of Probable Cost

Hildale Groundwater Project PH II 18-Oct-23
Project Location: Hildale City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 152,000.00	$ 152,000.00
2	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
4	Subsurface Investigation	4	HR	$ 250.00	$ 1,000.00
5	Materials Sampling & Testing	1	LS	$ 7,500.00	$ 7,500.00
6	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 10,000.00	$ 10,000.00
8	Erosion Control Compliance	1	LS	$ 7,500.00	$ 7,500.00
9	Geophysical Survey	1	LS	$ 23,000.00	$ 23,000.00
10	Access and Drill Pad Construction	1	LS	$ 130,000.00	$ 130,000.00
11	Conductor Casing and Seal	100	LF	$ 650.00	$ 65,000.00
12	Drill 12" Pilot Borehole	650	LF	$ 175.00	$ 113,750.00
13	Drill 20" Reamed Borehole	650	LF	$ 123.00	$ 79,950.00
14	Geophysical Logging	1	LS	$ 9,000.00	$ 9,000.00
15	Caliper	1	LS	$ 6,500.00	$ 6,500.00
16	Well Installation - 12" Steel Casing	550	LF	$ 100.00	$ 55,000.00
17	Well Installation - 12" SS Screen 70 Slot	200	LF	$ 350.00	$ 70,000.00
18	Installation of Gravel Pack - 8-12	600	LF	$ 115.00	$ 69,000.00
19	Installation of Annular Grout Seal	150	LF	$ 115.00	$ 17,250.00
20	Initial Well Development	40	HR	$ 750.00	$ 30,000.00
21	Install Pump for Development and Testing	1	LS	$ 42,000.00	$ 42,000.00
22	Well Development by pumping	80	HR	$ 425.00	$ 34,000.00
23	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
24	Well Disinfecting	1	LS	$ 5,000.00	$ 5,000.00
25	Well Head	1	LS	$ 2,500.00	$ 2,500.00
26	Well Capping	1	LS	$ 750.00	$ 750.00
27	Roadway Restoration	50,400	SF	$ 7.75	$ 390,600.00
28	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	8,400	LF	$ 65.00	$ 546,000.00
29	8" Gate Valve Assembly	9	EA	$ 2,900.00	$ 26,100.00
30	Misc. Connections, Fittings and Tie-ins	1	LS	$ 15,000.00	$ 15,000.00
31	Water Right Procurement	1	LS	$ 1,300,000.00	$ 1,300,000.00
			SUBTOTAL		**$ 3,234,900.00**
			CONTINGENCY	20%	**$ 647,000.00**
			CONSTRUCTION TOTAL		**$ 3,881,900.00**
INCIDENTALS					
1	Engineering Design	2.8%	LS	$ 120,000.00	$ 120,000.00
2	Bidding & Negotiating	0.2%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	2.3%	HR	$ 96,700.00	$ 96,700.00
4	Topographic & Property Survey	0.5%	EST	$ 22,000.00	$ 22,000.00
5	Funding and Administrative Services	0.3%	EST	$ 12,000.00	$ 12,000.00
6	Permitting	0.2%	EST	$ 10,000.00	$ 10,000.00
7	Environmental (Including Biological and Archeological) Report	0.9%	EST	$ 40,000.00	$ 40,000.00
8	BLM ROW Negotiation (SF299 Application & POD)	0.2%	EST	$ 10,000.00	$ 10,000.00
9	Miscellaneous Engineering Services	0.5%	EST	$ 20,000.00	$ 20,000.00
			SUBTOTAL		$ 338,200.00
			TOTAL PROJECT COST		**$ 4,220,100.00**

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Engineer's Opinion of Probable Cost

Hildale Groundwater Project PH III 18-Oct-23
Project Location: Hildale City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 110,000.00	$ 110,000.00
2	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
4	Subsurface Investigation	4	HR	$ 250.00	$ 1,000.00
5	Materials Sampling & Testing	1	LS	$ 7,500.00	$ 7,500.00
6	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 10,000.00	$ 10,000.00
8	Erosion Control Compliance	1	LS	$ 7,500.00	$ 7,500.00
9	Geophysical Survey	1	LS	$ 23,000.00	$ 23,000.00
10	Access and Drill Pad Construction	1	LS	$ 130,000.00	$ 130,000.00
11	Conductor Casing and Seal	100	LF	$ 650.00	$ 65,000.00
12	Drill 12" Pilot Borehole	600	LF	$ 175.00	$ 105,000.00
13	Drill 20" Reamed Borehole	600	LF	$ 123.00	$ 73,800.00
14	Geophysical Logging	1	LS	$ 9,000.00	$ 9,000.00
15	Caliper	1	LS	$ 6,500.00	$ 6,500.00
16	Well Installation - 12" Steel Casing	500	LF	$ 170.00	$ 85,000.00
17	Well Installation - 12" SS Screen 70 Slot	200	LF	$ 350.00	$ 70,000.00
18	Installation of Gravel Pack - 8-12	550	LF	$ 115.00	$ 63,250.00
19	Installation of Annular Grout Seal	150	LF	$ 115.00	$ 17,250.00
20	Initial Well Development	40	HR	$ 750.00	$ 30,000.00
21	Install Pump for Development and Testing	1	LS	$ 42,000.00	$ 42,000.00
22	Well Development by pumping	80	HR	$ 425.00	$ 34,000.00
23	Misc. Well and Pump Testing	1	LS	$ 10,000.00	$ 10,000.00
24	Well Disinfecting	1	LS	$ 5,000.00	$ 5,000.00
25	Well Head	1	LS	$ 2,500.00	$ 2,500.00
26	Well Capping	1	LS	$ 750.00	$ 750.00
27	Roadway Restoration	39,000	SF	$ 8.00	$ 312,000.00
28	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	6,500	LF	$ 65.00	$ 422,500.00
29	8" Gate Valve Assembly	8	EA	$ 2,900.00	$ 23,200.00
30	Misc. Connections, Fittings and Tie-ins	1	LS	$ 20,000.00	$ 20,000.00
31	Water Right Procurement	1	LS	$ 650,000.00	$ 650,000.00
			SUBTOTAL		**$ 2,352,250.00**
			CONTINGENCY	20%	**$ 470,500.00**
			CONSTRUCTION TOTAL		**$ 2,822,800.00**
INCIDENTALS					
1	Engineering Design	3.2%	LS	$ 100,000.00	$ 100,000.00
2	Bidding & Negotiating	0.2%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	2.2%	HR	$ 68,100.00	$ 68,100.00
4	Topographic & Property Survey	0.6%	EST	$ 20,000.00	$ 20,000.00
5	Funding and Administrative Services	0.4%	EST	$ 12,000.00	$ 12,000.00
6	Permitting	0.3%	EST	$ 10,000.00	$ 10,000.00
7	Environmental (Including Biological and Archeological) Report	1.1%	EST	$ 35,000.00	$ 35,000.00
8	BLM ROW Negotiation (SF299 Application & POD)	0.3%	EST	$ 10,000.00	$ 10,000.00
9	Miscellaneous Engineering Services	0.6%	EST	$ 20,000.00	$ 20,000.00
			SUBTOTAL		$ 282,600.00
			TOTAL PROJECT COST		**$ 3,105,400.00**

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Engineer's Opinion of Probable Cost

Arizona Well Fields
Project Location: Colorado City

11-Oct-23
MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION (ONE WELL)					
1	Mobilization	5%	LS	$ 16,100.00	$ 16,100.00
2	Traffic Control	1	LS	$ 2,000.00	$ 2,000.00
3	SWPPP Compliance	1	LS	$ 2,000.00	$ 2,000.00
4	Dust Control & Watering	1	LS	$ 2,000.00	$ 2,000.00
5	Subsurface Investigation	10	HR	$ 40.00	$ 400.00
6	Construction Staking	1	LS	$ 500.00	$ 500.00
7	Clearing, Grubbing, Excavation, & Demolition	1	LS	$ 2,000.00	$ 2,000.00
8	8" Diameter Test Well Drilling	150	LF	$ 87.00	$ 13,050.00
9	Develop and Pump Test Well	1	LS	$ 17,400.00	$ 17,400.00
10	Water Sampling (Full Drinking Water Standard)	1	EA	$ 26,000.00	$ 26,000.00
11	Furnish and Install Conductor Casing (Production Well)	1	LS	$ 7,800.00	$ 7,800.00
12	20" Diameter Production Well Drilling	150	LF	$ 160.00	$ 24,000.00
13	12" Diameter Casing	100	LF	$ 52.00	$ 5,200.00
14	12" Diameter Stainless Steel Screen	50	LF	$ 350.00	$ 17,500.00
15	3" Galvanized Gravel Pack Tremie Pipe	60	LF	$ 16.00	$ 960.00
16	2" Conduit for Level Indicator	150	LF	$ 7.00	$ 1,050.00
17	Concrete Grout and Seal	3	CY	$ 1,200.00	$ 3,600.00
18	Furnish and Install Pea Gravel (Disinfected)	3	CY	$ 350.00	$ 1,050.00
19	Bentonite Plug	1	LS	$ 4,400.00	$ 4,400.00
20	Furnish and Install Fine Silica Sand	3	CY	$ 2,100.00	$ 6,300.00
21	Develop Production Well	150	HR	$ 435.00	$ 65,250.00
22	Production Well Test Pump Equipment	1	LS	$ 17,400.00	$ 17,400.00
23	Test Pump Production Well	48	HR	$ 260.00	$ 12,480.00
24	Recovery Testing	12	HR	$ 175.00	$ 2,100.00
25	Disinfection and Capping	1	LS	$ 550.00	$ 550.00
26	Well House Building	1	LS	$ 75,000.00	$ 75,000.00
27	Piping to Connect to Raw Water System	1	LS	$ 12,000.00	$ 12,000.00
			SUBTOTAL		**$ 338,100.00**
			CONTINGENCY	20%	**$ 67,600.00**
			CONSTRUCTION TOTAL		**$ 405,700.00**
INCIDENTALS					
1	Engineering Design	7.6%	LS	$ 36,000.00	$ 36,000.00
2	Bidding & Negotiating	1.6%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services/Miscellaneous Services	5.7%	HR	$ 27,000.00	$ 27,000.00
			SUBTOTAL		$ 70,500.00
			TOTAL PROJECT COST FOR ONE WELL		**$ 476,200.00**
0-5 YEAR WELL FIELD					
	Number of New Wells	7	EA	$ 476,200.00	$ 3,333,400.00
			TOTAL PROJECT COST AZ 0-5 YEAR WELL FIELD		**$ 3,333,400.00**
6-10 YEAR WELL FIELD					
	Number of New Wells	8	EA	$ 476,200.00	$ 3,809,600.00
			TOTAL PROJECT COST AZ 6-10 YEAR WELL FIELD		**$ 3,809,600.00**
11-20 YEAR WELL FIELD					
	Number of New Wells	14	EA	$ 476,200.00	$ 6,666,800.00
			TOTAL PROJECT COST AZ 11-20 YEAR WELL FIELD		**$ 6,666,800.00**

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Engineer's Opinion of Probable Cost

Utah Well Fields 11-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION (ONE WELL)					
1	Mobilization	5%	LS	$ 16,099.50	$ 16,099.50
2	Traffic Control	1	LS	$ 2,000.00	$ 2,000.00
3	SWPPP Compliance	1	LS	$ 2,000.00	$ 2,000.00
4	Dust Control & Watering	1	LS	$ 2,000.00	$ 2,000.00
5	Subsurface Investigation	10	HR	$ 40.00	$ 400.00
6	Construction Staking	1	LS	$ 500.00	$ 500.00
7	Clearing, Grubbing, Excavation, & Demolition	1	LS	$ 2,000.00	$ 2,000.00
8	8" Diameter Test Well Drilling	150	LF	$ 87.00	$ 13,050.00
9	Develop and Pump Test Well	1	LS	$ 17,400.00	$ 17,400.00
10	Water Sampling (Full Drinking Water Standard)	1	EA	$ 26,000.00	$ 26,000.00
11	Furnish and Install Conductor Casing (Production Well)	1	LS	$ 7,800.00	$ 7,800.00
12	20" Diameter Production Well Drilling	150	LF	$ 160.00	$ 24,000.00
13	12" Diameter Casing	100	LF	$ 52.00	$ 5,200.00
14	12" Diameter Stainless Steel Screen	50	LF	$ 350.00	$ 17,500.00
15	3" Galvanized Gravel Pack Tremie Pipe	60	LF	$ 16.00	$ 960.00
16	2" Conduit for Level Indicator	150	LF	$ 7.00	$ 1,050.00
17	Concrete Grout and Seal	3	CY	$ 1,200.00	$ 3,600.00
18	Furnish and Install Pea Gravel (Disinfected)	3	CY	$ 350.00	$ 1,050.00
19	Bentonite Plug	1	LS	$ 4,400.00	$ 4,400.00
20	Furnish and Install Fine Silica Sand	3	CY	$ 2,100.00	$ 6,300.00
21	Develop Production Well	150	HR	$ 435.00	$ 65,250.00
22	Production Well Test Pump Equipment	1	LS	$ 17,400.00	$ 17,400.00
23	Test Pump Production Well	48	HR	$ 260.00	$ 12,480.00
24	Recovery Testing	12	HR	$ 175.00	$ 2,100.00
25	Disinfection and Capping	1	LS	$ 550.00	$ 550.00
26	Well House Building	1	LS	$ 75,000.00	$ 75,000.00
27	Piping to Connect to Raw Water System	1	LS	$ 12,000.00	$ 12,000.00
			SUBTOTAL		**$ 338,089.50**
			CONTINGENCY	20%	**$ 67,617.90**
			CONSTRUCTION TOTAL		**$ 405,700.00**
INCIDENTALS					
1	Engineering Design	7.6%	LS	$ 36,019.43	$ 36,019.43
2	Bidding & Negotiating	1.6%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services/Miscellaneous Services	5.7%	HR	$ 27,000.00	$ 27,000.00
			SUBTOTAL		$ 70,519.43
			TOTAL PROJECT COST FOR ONE WELL		**$ 476,200.00**
0-5 YEAR WELL FIELD					
	Number of New Wells	7	EA	$ 476,200.00	$ 3,333,400.00
	Purchase Water Rights	677	AC-FT	$ 5,300.00	$ 3,590,318.61
			TOTAL PROJECT COST AZ 0-5 YEAR WELL FIELD		**$ 6,923,700.00**
6-10 YEAR WELL FIELD					
	Number of New Wells	8	EA	$ 476,200.00	$ 3,809,600.00
	Purchase Water Rights	774	AC-FT	$ 5,300.00	$ 4,103,221.27
			TOTAL PROJECT COST AZ 6-10 YEAR WELL FIELD		**$ 7,912,800.00**
11-20 YEAR WELL FIELD					
	Number of New Wells	14	EA	$ 476,200.00	$ 6,666,800.00
	Purchase Water Rights	1,355	AC-FT	$ 5,300.00	$ 7,180,637.23
			TOTAL PROJECT COST AZ 11-20 YEAR WELL FIELD		**$ 13,847,400.00**

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Engineer's Opinion of Probable Cost

Sandhill Tank 1 18-Oct-23
Project Location: Hildale City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 211,800.00	$ 211,800.00
2	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
3	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
5	Subsurface Investigation	20	HR	$ 350.00	$ 7,000.00
6	Restore Surface Improvements	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 12,000.00	$ 12,000.00
8	Materials Sampling & Testing	1	LS	$ 35,000.00	$ 35,000.00
9	Excavation & Demolition	1	LS	$ 25,000.00	$ 25,000.00
10	Earthwork & Grading	1	LS	$ 400,000.00	$ 400,000.00
11	2MG Concrete Storage Tank	1	LS	$ 2,800,000.00	$ 2,800,000.00
12	Tank Site Appurtenances	1	LS	$ 75,000.00	$ 75,000.00
13	Metering Station	1	LS	$ 40,000.00	$ 40,000.00
14	16" PVC (C900), Fittings, Installation, Pipe Bedding, Trench Backfill	1,360	LF	$ 120.00	$ 163,200.00
15	16" Gate Valve Assembly	4	EA	$ 6,750.00	$ 27,000.00
16	12" PVC (C900), Fittings, Installation, Pipe Bedding, Trench Backfill	2,264	LF	$ 95.00	$ 215,080.00
17	12" Gate Valve Assembly	10	EA	$ 6,500.00	$ 65,000.00
18	Misc. Connections, Fittings and Tie-ins	1	LS	$ 30,000.00	$ 30,000.00
19	Surface Restoration	1	LS	$ 15,000.00	$ 15,000.00
20	Elm Street PRV and Vault	1	EA	$ 100,000.00	$ 100,000.00
21	Valving and Piping to Create New Pressure Zone	1	LS	$ 45,000.00	$ 45,000.00
22	Misc Electrical and SCADA Improvements	1	LS	$ 20.00	$ 20.00
23	Tank Access Road	28,992	SF	$ 2.75	$ 79,728.00
24	Fence and Gate	1	LS	$ 75,000.00	$ 75,000.00
			SUBTOTAL		**$ 4,447,328.00**
			CONTINGENCY	20%	**$ 889,500.00**
			CONSTRUCTION TOTAL		**$ 5,336,800.00**
INCIDENTALS					
1	Engineering Design	3.4%	LS	$ 200,000.00	$ 200,000.00
2	Bidding & Negotiating	0.1%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	4.5%	HR	$ 266,800.00	$ 266,800.00
4	Topographic & Property Survey	0.3%	EST	$ 15,000.00	$ 15,000.00
5	Geotechnical Report	0.2%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.2%	EST	$ 12,000.00	$ 12,000.00
7	Permitting	0.2%	EST	$ 10,000.00	$ 10,000.00
8	Environmental (Including Biological and Archeological) Report	0.5%	EST	$ 30,000.00	$ 30,000.00
9	SCADA Design	0.3%	EST	$ 15,000.00	$ 15,000.00
10	BLM ROW Negotiation (SF299 Application & POD)	0.2%	EST	$ 10,000.00	$ 10,000.00
11	Miscellaneous Engineering Services	0.4%	EST	$ 25,000.00	$ 25,000.00
			SUBTOTAL		$ 601,300.00
			TOTAL PROJECT COST		**$ 5,938,100.00**

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Engineer's Opinion of Probable Cost

Trailhead Tank 12-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 100,700.00	$ 100,700.00
2	Traffic Control	1	LS	$ 5,000.00	$ 5,000.00
3	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
5	Subsurface Investigation	30	HR	$ 350.00	$ 10,500.00
6	Restore Surface Improvements	1	LS	$ 7,800.00	$ 7,800.00
7	Construction Staking	1	LS	$ 5,000.00	$ 5,000.00
8	Materials Sampling & Testing	1	LS	$ 35,000.00	$ 35,000.00
9	Earthwork	1	LS	$ 200,000.00	$ 200,000.00
10	500K Concrete Storage Tank	1	LS	$ 810,000.00	$ 810,000.00
11	Tank Site Appurtenances	1	LS	$ 100,000.00	$ 100,000.00
12	Fence and Gate	1	LS	$ 20,000.00	$ 20,000.00
13	Metering Station	1	LS	$ 34,000.00	$ 34,000.00
14	Tank Access Rd	5,500	SF	$ 2.00	$ 11,000.00
15	10" PVC (C900), Fittings, Installation, Pipe Bedding, Trench Backfill	8,000	LF	$ 75.00	$ 600,000.00
16	10" Gate Valve Assembly	5	EA	$ 5,000.00	$ 25,000.00
17	Misc. Connections, Fittings, and Tie-Ins	1	LS	$ 20,000.00	$ 20,000.00
18	Misc Electrical and SCADA Improvements	1	LS	$ 20,000.00	$ 20,000.00
19	PRV and Vault	1	EA	$ 100,000.00	$ 100,000.00
			SUBTOTAL		**$ 2,115,500.00**
			CONTINGENCY	20%	**$ 423,100.00**
			CONSTRUCTION TOTAL		**$ 2,538,600.00**
INCIDENTALS					
1	Engineering Design	3.3%	LS	$ 95,000.00	$ 95,000.00
2	Bidding & Negotiating	0.3%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	4.4%	HR	$ 126,900.00	$ 126,900.00
4	Topographic & Property Survey	0.3%	EST	$ 8,000.00	$ 8,000.00
5	Geotechnical Report	0.3%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.4%	EST	$ 12,000.00	$ 12,000.00
7	Permitting	0.3%	EST	$ 10,000.00	$ 10,000.00
10	Environmental (Including Biological and Archeological) Report	0.9%	EST	$ 25,000.00	$ 25,000.00
11	BLM ROW Negotiation (SF299 Application & POD)	0.3%	EST	$ 10,000.00	$ 10,000.00
39	Miscellaneous Professional Services	0.7%	EST	$ 20,000.00	$ 20,000.00
			SUBTOTAL		$ 336,900.00
			TOTAL PROJECT COST		**$ 2,875,500.00**

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SUNRISE ENGINEERING
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Engineer's Opinion of Probable Cost

South Concrete Tank 12-Oct-23
Project Location: Colorado City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 154,900.00	$ 154,900.00
2	Traffic Control	1	LS	$ 2,000.00	$ 2,000.00
3	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
5	Subsurface Investigation	30	HR	$ 350.00	$ 10,500.00
6	Restore Surface Improvements	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 12,000.00	$ 12,000.00
8	Materials Sampling & Testing	1	LS	$ 35,000.00	$ 35,000.00
9	Excavation & Demolition	1	LS	$ 25,000.00	$ 25,000.00
10	Earthwork & Grading	1	LS	$ 400,000.00	$ 400,000.00
11	1MG Concrete Storage Tank	1	LS	$ 1,500,000.00	$ 1,500,000.00
12	Tank Site Appurtenances	1	LS	$ 250,000.00	$ 250,000.00
13	Metering Station	1	LS	$ 40,000.00	$ 40,000.00
14	12" PVC (C900), Fittings, Installation, Pipe Bedding, Trench Backfill	4,000	LF	$ 110.00	$ 440,000.00
15	12" Gate Valve Assembly	10	EA	$ 6,750.00	$ 67,500.00
16	Misc. Connections, Fittings and Tie-ins	1	LS	$ 30,000.00	$ 30,000.00
17	Surface Restoration	1	LS	$ 15,000.00	$ 15,000.00
18	PRV and Vault	1	EA	$ 100,000.00	$ 100,000.00
19	Valving and Piping to Create New Pressure Zone	1	LS	$ 45,000.00	$ 45,000.00
20	Misc Electrical and SCADA Improvements	1	LS	$ 20,000.00	$ 20,000.00
21	Tank Access Road	32,000	SF	$ 2.00	$ 64,000.00
22	Fence and Gate	1	LS	$ 20,000.00	$ 20,000.00
			SUBTOTAL		**$ 3,252,400.00**
			CONTINGENCY	20%	**$ 650,500.00**
			CONSTRUCTION TOTAL		**$ 3,902,900.00**
INCIDENTALS					
1	Engineering Design	4.5%	LS	$ 200,000.00	$ 200,000.00
2	Bidding & Negotiating	0.2%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	4.4%	HR	$ 195,100.00	$ 195,100.00
4	Topographic & Property Survey	0.3%	EST	$ 15,000.00	$ 15,000.00
5	Geotechnical Report	0.2%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.3%	EST	$ 12,000.00	$ 12,000.00
7	Permitting	0.2%	EST	$ 10,000.00	$ 10,000.00
8	Environmental (Including Biological and Archeological) Report	0.7%	EST	$ 30,000.00	$ 30,000.00
9	SCADA Design	0.3%	EST	$ 15,000.00	$ 15,000.00
10	BLM ROW Negotiation (SF299 Application & POD)	0.2%	EST	$ 10,000.00	$ 10,000.00
11	Miscellaneous Engineering Services	0.6%	EST	$ 25,000.00	$ 25,000.00
			SUBTOTAL		$ 529,600.00
			TOTAL PROJECT COST		**$ 4,432,500.00**

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Engineer's Opinion of Probable Cost

Sandhill Tank 2 18-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 232,100.00	$ 232,100.00
2	Traffic Control	1	LS	$ 2,000.00	$ 2,000.00
3	Pre-Construction DVD & Project Sign	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
5	Subsurface Investigation	30	HR	$ 350.00	$ 10,500.00
6	Restore Surface Improvements	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 12,000.00	$ 12,000.00
8	Materials Sampling & Testing	1	LS	$ 35,000.00	$ 35,000.00
9	Excavation & Demolition	1	LS	$ 25,000.00	$ 25,000.00
10	Earthwork & Grading	1	LS	$ 400,000.00	$ 400,000.00
11	2MG Concrete Storage Tank	1	LS	$ 2,800,000.00	$ 2,800,000.00
12	Tank Site Appurtenances	1	LS	$ 250,000.00	$ 250,000.00
13	Metering Station	1	LS	$ 40,000.00	$ 40,000.00
14	24" PVC (C900), Fittings, Installation, Pipe Bedding, Trench Backfill	2,700	LF	$ 150.00	$ 405,000.00
15	24" Gate Valve Assembly	6	EA	$ 9,500.00	$ 57,000.00
16	16" PVC (C900), Fittings, Installation, Pipe Bedding, Trench Backfill	2,350	LF	$ 120.00	$ 282,000.00
17	16" Gate Valve Assembly	5	EA	$ 6,750.00	$ 33,750.00
18	Misc. Connections, Fittings and Tie-ins	1	LS	$ 30,000.00	$ 30,000.00
19	Surface Restoration	1	LS	$ 15,000.00	$ 15,000.00
20	PRV and Vault	1	EA	$ 100,000.00	$ 100,000.00
21	Valving and Piping to Create New Pressure Zone	1	LS	$ 45,000.00	$ 45,000.00
22	Misc Electrical and SCADA Improvements	1	LS	$ 20,000.00	$ 20,000.00
23	Tank Access Road	18,800	SF	$ 2.00	$ 37,600.00
24	Fence and Gate	1	LS	$ 20,000.00	$ 20,000.00
			SUBTOTAL		**$ 4,873,450.00**
			CONTINGENCY	20%	**$ 974,700.00**
			CONSTRUCTION TOTAL		**$ 5,848,200.00**
INCIDENTALS					
1	Engineering Design	3.1%	LS	$ 200,000.00	$ 200,000.00
2	Bidding & Negotiating	0.1%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	4.5%	HR	$ 292,400.00	$ 292,400.00
4	Topographic & Property Survey	0.2%	EST	$ 15,000.00	$ 15,000.00
5	Geotechnical Report	0.2%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.2%	EST	$ 12,000.00	$ 12,000.00
7	Permitting	0.2%	EST	$ 10,000.00	$ 10,000.00
8	Environmental (Including Biological and Archeological) Report	0.5%	EST	$ 30,000.00	$ 30,000.00
9	SCADA Design	0.2%	EST	$ 15,000.00	$ 15,000.00
10	BLM ROW Negotiation (SF299 Application & POD)	0.2%	EST	$ 10,000.00	$ 10,000.00
11	Miscellaneous Engineering Services	0.4%	EST	$ 25,000.00	$ 25,000.00
			SUBTOTAL		$ 626,900.00
			TOTAL PROJECT COST		**$ 6,475,100.00**

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Engineer's Opinion of Probable Cost

Raw Water Transmission Line 18-Oct-23

Project Location: Colorado City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 37,800.00	$ 37,800.00
2	Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
3	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
4	Subsurface Investigation	10	HR	$ 250.00	$ 2,500.00
5	Restore Surface Improvements	1	LS	$ 15,000.00	$ 15,000.00
6	Construction Staking	1	LS	$ 10,000.00	$ 10,000.00
7	Erosion Control Compliance	1	LS	$ 5,000.00	$ 5,000.00
8	Materials Sampling & Testing	1	LS	$ 12,500.00	$ 12,500.00
9	Excavation & Demolition	1	LS	$ 20,000.00	$ 20,000.00
10	12" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	2,500	LF	$ 110.00	$ 275,000.00
11	12" Gate Valve Assembly	8	EA	$ 6,500.00	$ 52,000.00
12	Pavement Restoration	26,400	SF	$ 7.75	$ 204,600.00
13	Access/Cleanout Structure	4	EA	$ 5,000.00	$ 20,000.00
14	Misc. Fittings, Connections, and Tie-Ins	1	LS	$ 20,000.00	$ 20,000.00
15	Electrical Conduit	2,500	LF	$ 40.00	$ 100,000.00
			SUBTOTAL		**$ 794,400.00**
			CONTINGENCY	20%	**$ 158,900.00**
			CONSTRUCTION TOTAL		**$ 953,300.00**
INCIDENTALS					
1	Engineering Design	4.6%	LS	$ 50,000.00	$ 50,000.00
2	Bidding & Negotiating	0.7%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.6%	HR	$ 39,700.00	$ 39,700.00
4	Topographic & Property Survey	1.4%	EST	$ 15,000.00	$ 15,000.00
5	Permitting	0.5%	EST	$ 5,000.00	$ 5,000.00
6	Funding and Administrative Services	1.1%	EST	$ 12,000.00	$ 12,000.00
7	Miscellaneous Engineering Services	0.9%	EST	$ 10,000.00	$ 10,000.00
			SUBTOTAL		$ 139,200.00
			TOTAL PROJECT COST		**$ 1,092,500.00**

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Engineer's Opinion of Probable Cost

Small Treatment Plant (1,600 gpm) 12-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 206,000.00	$ 206,000.00
2	Pilot Study	1	LS	$ 75,000.00	$ 75,000.00
3	Construction Staking	1	LS	$ 15,000.00	$ 15,000.00
4	Dust Control & Watering	1	LS	$ 20,000.00	$ 20,000.00
5	Package Pressure Filtration System	1	LS	$ 1,300,000.00	$ 1,300,000.00
6	Site Earthwork	1	LS	$ 150,000.00	$ 150,000.00
7	Water Treatment Plant Building & Appurtenances	1	LS	$ 1,000,000.00	$ 1,000,000.00
8	Chlorinator System	1	LS	$ 100,000.00	$ 100,000.00
9	Chlorine Contact Chamber	1	LS	$ 200,000.00	$ 200,000.00
10	Effluent Pump Station	1	LS	$ 275,000.00	$ 275,000.00
11	Electrical Systems	1	LS	$ 350,000.00	$ 350,000.00
12	Mechanical System	1	LS	$ 200,000.00	$ 200,000.00
13	Miscellaneous Piping to and from Site	1	LS	$ 185,000.00	$ 185,000.00
14	Miscellaneous Valves	1	LS	$ 90,000.00	$ 90,000.00
15	Miscellaneous Site Improvements (parking, fence, gate, etc.)	1	LS	$ 110,000.00	$ 110,000.00
16	SCADA Improvements	1	LS	$ 50,000.00	$ 50,000.00
			SUBTOTAL		**$ 4,326,000.00**
			CONTINGENCY	20%	**$ 865,200.00**
			CONSTRUCTION TOTAL		**$ 5,191,200.00**
INCIDENTALS					
1	Engineering Design	5.3%	LS	$ 311,500.00	$ 311,500.00
2	Bidding & Negotiating	0.2%	HR	$ 10,000.00	$ 10,000.00
3	Engineering Construction Services	4.4%	HR	$ 259,600.00	$ 259,600.00
4	Topographic & Property Survey	0.3%	EST	$ 15,000.00	$ 15,000.00
5	Geotechnical Report	0.2%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.3%	EST	$ 20,000.00	$ 20,000.00
7	Permitting	0.2%	EST	$ 12,500.00	$ 12,500.00
8	SCADA Design	0.4%	EST	$ 25,000.00	$ 25,000.00
9	Miscellaneous Professional Services	0.8%	EST	$ 50,000.00	$ 50,000.00
			SUBTOTAL		$ 713,600.00
			TOTAL PROJECT COST		**$ 5,904,800.00**

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Engineer's Opinion of Probable Cost

Additional Treatment Capacity (3,000 gpm) 12-Oct-23
Project Location: Not Specified MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 306,800.00	$ 306,800.00
2	Pilot Study	1	LS	$ 75,000.00	$ 75,000.00
3	Construction Staking	1	LS	$ 15,000.00	$ 15,000.00
4	Dust Control & Watering	1	LS	$ 20,000.00	$ 20,000.00
5	Package Pressure Filtration System	1	LS	$ 2,300,000.00	$ 2,300,000.00
6	Site Earthwork	1	LS	$ 200,000.00	$ 200,000.00
7	Water Treatment Plant Building & Appurtenances	1	LS	$ 1,500,000.00	$ 1,500,000.00
8	Chlorinator System	1	LS	$ 100,000.00	$ 100,000.00
9	Chlorine Contact Chamber	1	LS	$ 325,000.00	$ 325,000.00
10	Effluent Pump Station	1	LS	$ 375,000.00	$ 375,000.00
11	Electrical Systems	1	LS	$ 400,000.00	$ 400,000.00
12	Mechanical System	1	LS	$ 275,000.00	$ 275,000.00
13	Miscellaneous Piping to and from Site	1	LS	$ 225,000.00	$ 225,000.00
14	Miscellaneous Valves	1	LS	$ 100,000.00	$ 100,000.00
15	Miscellaneous Site Improvements (parking, fence, gate, etc.)	1	LS	$ 175,000.00	$ 175,000.00
16	SCADA Improvements	1	LS	$ 50,000.00	$ 50,000.00
			SUBTOTAL		**$ 6,441,800.00**
			CONTINGENCY	20%	**$ 1,288,400.00**
			CONSTRUCTION TOTAL		**$ 7,730,200.00**
INCIDENTALS					
1	Engineering Design	5.5%	LS	$ 479,800.00	$ 479,800.00
2	Bidding & Negotiating	0.1%	HR	$ 10,000.00	$ 10,000.00
3	Engineering Construction Services	4.4%	HR	$ 386,500.00	$ 386,500.00
4	Topographic & Property Survey	0.2%	EST	$ 15,000.00	$ 15,000.00
5	Geotechnical Report	0.1%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.2%	EST	$ 20,000.00	$ 20,000.00
7	Permitting	0.1%	EST	$ 12,500.00	$ 12,500.00
8	SCADA Design	0.3%	EST	$ 25,000.00	$ 25,000.00
9	Miscellaneous Engineering Services	0.6%	EST	$ 50,000.00	$ 50,000.00
			SUBTOTAL		$ 1,008,800.00
			TOTAL PROJECT COST		**$ 8,739,000.00**

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Engineer's Opinion of Probable Cost

Additional Treatment Capacity PH2 (4,000 gpm) 12-Oct-23
Project Location: Not Specified MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 363,300.00	$ 363,300.00
2	Pilot Study	1	LS	$ 75,000.00	$ 75,000.00
3	Construction Staking	1	LS	$ 15,000.00	$ 15,000.00
4	Dust Control & Watering	1	LS	$ 20,000.00	$ 20,000.00
5	Package Pressure Filtration System	1	LS	$ 3,000,000.00	$ 3,000,000.00
6	Site Earthwork	1	LS	$ 200,000.00	$ 200,000.00
7	Water Treatment Plant Building & Appurtenances	1	LS	$ 1,750,000.00	$ 1,750,000.00
8	Chlorinator System	1	LS	$ 100,000.00	$ 100,000.00
9	Chlorine Contact Chamber	1	LS	$ 375,000.00	$ 375,000.00
10	Effluent Pump Station	1	LS	$ 425,000.00	$ 425,000.00
11	Electrical Systems	1	LS	$ 450,000.00	$ 450,000.00
12	Mechanical System	1	LS	$ 315,000.00	$ 315,000.00
13	Miscellaneous Piping to and from Site	1	LS	$ 225,000.00	$ 225,000.00
14	Miscellaneous Valves	1	LS	$ 115,000.00	$ 115,000.00
15	Miscellaneous Site Improvements (parking, fence, gate, etc.)	1	LS	$ 150,000.00	$ 150,000.00
16	SCADA Improvements	1	LS	$ 50,000.00	$ 50,000.00
			SUBTOTAL		**$ 7,628,300.00**
			CONTINGENCY	20%	**$ 1,525,700.00**
			CONSTRUCTION TOTAL		**$ 9,154,000.00**
INCIDENTALS					
1	Engineering Design	5.4%	LS	$ 558,000.00	$ 558,000.00
2	Bidding & Negotiating	0.1%	HR	$ 10,000.00	$ 10,000.00
3	Engineering Construction Services	4.4%	HR	$ 457,700.00	$ 457,700.00
4	Topographic & Property Survey	0.1%	EST	$ 15,000.00	$ 15,000.00
5	Geotechnical Report	0.1%	EST	$ 10,000.00	$ 10,000.00
6	Funding and Administrative Services	0.2%	EST	$ 20,000.00	$ 20,000.00
7	Permitting	0.1%	EST	$ 12,500.00	$ 12,500.00
8	SCADA Design	0.2%	EST	$ 25,000.00	$ 25,000.00
9	Miscellaneous Engineering Services	0.5%	EST	$ 50,000.00	$ 50,000.00
			SUBTOTAL		$ 1,158,200.00
			TOTAL PROJECT COST		**$ 10,312,200.00**

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Engineer's Opinion of Probable Cost

Fire Hydrant Improvements 18-Oct-23

Project Location: Hildale City BCW/tcd

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 61,700.00	$ 61,700.00
2	Pre-Construction DVD and Project Sign	1	LS	$ 2,500.00	$ 2,500.00
3	Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
4	Subsurface Investigation	24	HR	$ 250.00	$ 6,000.00
5	Materials Sampling & Testing	1	LS	$ 16,000.00	$ 16,000.00
6	Dust Control & Watering	1	LS	$ 9,000.00	$ 9,000.00
7	Construction Staking	1	LS	$ 13,000.00	$ 13,000.00
8	Erosion Control Compliance	1	LS	$ 6,000.00	$ 6,000.00
9	6" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	2,100	LF	$ 50.00	$ 105,000.00
10	6" Gate Valve Assembly	80	EA	$ 2,000.00	$ 160,000.00
11	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	2,930	LF	$ 65.00	$ 190,450.00
12	8" Gate Valve Assembly	8	EA	$ 2,900.00	$ 23,200.00
13	Fire Hydrant Assembly	78	EA	$ 7,000.00	$ 546,000.00
14	Restore Gravel Road	21,200	SF	$ 3.25	$ 68,900.00
15	Pavement Restoration	9,100	SF	$ 7.50	$ 68,250.00
16	Restore Surface Improvements	1	LS	$ 10,000.00	$ 10,000.00
			SUBTOTAL		**$ 1,296,000.00**
			CONTINGENCY	20%	**$ 259,200.00**
			CONSTRUCTION TOTAL		**$ 1,555,200.00**
INCIDENTALS					
1	Engineering Design	4.6%	LS	$ 79,000.00	$ 79,000.00
2	Bidding & Negotiating	0.4%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.7%	HR	$ 64,800.00	$ 64,800.00
4	Topographic & Property Survey	0.6%	EST	$ 10,000.00	$ 10,000.00
5	Funding and Administrative Services	0.7%	EST	$ 12,000.00	$ 12,000.00
6	Miscellaneous Engineering Services	0.3%	EST	$ 5,000.00	$ 5,000.00
			SUBTOTAL		$ 178,300.00
			TOTAL PROJECT COST		**$ 1,733,500.00**

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Engineer's Opinion of Probable Cost

Upper Pressure Zone Improvements 17-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 29,100.00	$ 29,100.00
2	Pre-Construction DVD	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 7,500.00	$ 7,500.00
4	Subsurface Investigation	16	HR	$ 250.00	$ 4,000.00
5	Materials Sampling & Testing	1	LS	$ 10,000.00	$ 10,000.00
6	Dust Control & Watering	1	LS	$ 7,500.00	$ 7,500.00
7	Construction Staking	1	LS	$ 7,500.00	$ 7,500.00
8	Erosion Control Compliance	1	LS	$ 6,000.00	$ 6,000.00
9	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	5,000	LF	$ 65.00	$ 325,000.00
10	8" Gate Valve Assembly	14	EA	$ 5,000.00	$ 70,000.00
11	Disconnect and Reconnect Water Services	6	EA	$ 2,000.00	$ 12,000.00
12	Restore Gravel Road	30,000	SF	$ 3.25	$ 97,500.00
13	Restore Surface Improvements	1	LS	$ 10,000.00	$ 10,000.00
14	Misc. Connections, Fittings, and Tie-Ins	1	LS	$ 10,000.00	$ 10,000.00
15	6" Fire Hydrant Assembly	2	EA	$ 7,000.00	$ 14,000.00
			SUBTOTAL		**$ 611,600.00**
			CONTINGENCY	20%	**$ 122,300.00**
			CONSTRUCTION TOTAL		**$ 733,900.00**
INCIDENTALS					
1	Engineering Design	5.3%	LS	$ 45,000.00	$ 45,000.00
2	Bidding & Negotiating	0.9%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.6%	HR	$ 30,600.00	$ 30,600.00
4	Topographic & Property Survey	0.9%	EST	$ 7,500.00	$ 7,500.00
5	Funding and Administrative Services	1.4%	EST	$ 12,000.00	$ 12,000.00
6	Permitting	0.6%	EST	$ 5,000.00	$ 5,000.00
7	Miscellaneous Proffesional Services	0.6%	EST	$ 5,000.00	$ 5,000.00
			SUBTOTAL		$ 112,600.00
			TOTAL PROJECT COST		**$ 846,500.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 84
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Canyon Street Line 17-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 12,400.00	$ 12,400.00
2	Pre-Construction DVD	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 10,000.00	$ 10,000.00
4	Subsurface Investigation	8	HR	$ 250.00	$ 2,000.00
5	Materials Sampling & Testing	1	LS	$ 10,000.00	$ 10,000.00
6	Dust Control & Watering	1	LS	$ 10,000.00	$ 10,000.00
7	Construction Staking	1	LS	$ 7,500.00	$ 7,500.00
8	Erosion Control Compliance	1	LS	$ 7,500.00	$ 7,500.00
9	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	1,500	LF	$ 65.00	$ 97,500.00
10	8" Gate Valve Assembly	5	EA	$ 5,000.00	$ 25,000.00
11	Restore Surface Improvements	1	LS	$ 10,000.00	$ 10,000.00
12	Pavement Restoration	9,000	SF	$ 6.00	$ 54,000.00
13	Misc. Connections, Fittings, and Tie-Ins	1	LS	$ 7,500.00	$ 7,500.00
14	Reconnect Water Services	5	EA	$ 1,200.00	$ 6,000.00
			SUBTOTAL		**$ 260,900.00**
			CONTINGENCY	20%	**$ 52,200.00**
			CONSTRUCTION TOTAL		**$ 313,100.00**
INCIDENTALS					
1	Engineering Design	6.4%	LS	$ 25,000.00	$ 25,000.00
2	Bidding & Negotiating	1.9%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	4.7%	HR	$ 18,300.00	$ 18,300.00
4	Topographic & Property Survey	1.9%	EST	$ 7,500.00	$ 7,500.00
5	Funding and Administrative Services	2.6%	EST	$ 10,000.00	$ 10,000.00
6	Permitting	1.3%	EST	$ 5,000.00	$ 5,000.00
7	Miscellaneous Engineering Services	0.6%	EST	$ 2,500.00	$ 2,500.00
			SUBTOTAL		$ 75,800.00
			TOTAL PROJECT COST		**$ 388,900.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 847
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Northwest Hildale Transmission Line 17-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 69,300.00	$ 69,300.00
2	Traffic Control	1	LS	$ 12,000.00	$ 12,000.00
3	Pre-Construction DVD	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 20,000.00	$ 20,000.00
5	Subsurface Investigation	8	HR	$ 250.00	$ 2,000.00
6	Restore Surface Improvements	1	LS	$ 12,000.00	$ 12,000.00
7	Erosion Control Compliance	2	LS	$ 8,000.00	$ 16,000.00
8	Construction Staking	1	LS	$ 12,500.00	$ 12,500.00
9	Materials Sampling & Testing	1	LS	$ 12,000.00	$ 12,000.00
10	Surface Restoration	32,500	SF	$ 5.00	$ 162,500.00
11	24" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	4,150	LF	$ 150.00	$ 622,500.00
12	24" Gate Valve Assembly	12	EA	$ 9,500.00	$ 114,000.00
13	16" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	2,350	LF	$ 120.00	$ 282,000.00
14	16" Gate Valve Assembly	12	EA	$ 6,750.00	$ 81,000.00
15	Misc. Connections, Fittings and Tie-ins	1	LS	$ 35,000.00	$ 35,000.00
			SUBTOTAL		**$ 1,454,300.00**
			CONTINGENCY	20%	**$ 290,900.00**
			CONSTRUCTION TOTAL		**$ 1,745,200.00**
INCIDENTALS					
1	Engineering Design	5.3%	LS	$ 105,000.00	$ 105,000.00
2	Bidding & Negotiating	0.4%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.7%	HR	$ 72,700.00	$ 72,700.00
4	Topographic & Property Survey	0.8%	EST	$ 15,000.00	$ 15,000.00
5	Funding and Administrative Services	0.6%	EST	$ 12,000.00	$ 12,000.00
6	Permitting	0.3%	EST	$ 5,000.00	$ 5,000.00
7	Miscellaneous Engineering Services	0.8%	EST	$ 15,000.00	$ 15,000.00
			SUBTOTAL		$ 232,200.00
			TOTAL PROJECT COST		**$ 1,977,400.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 84
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Hildale Street Line 17-Oct-23
Project Location: Colorado City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 13,200.00	$ 13,200.00
2	Pre-Construction DVD	1	LS	$ 1,500.00	$ 1,500.00
3	Traffic Control	1	LS	$ 18,000.00	$ 18,000.00
4	Subsurface Investigation	4	HR	$ 250.00	$ 1,000.00
5	Materials Sampling & Testing	1	LS	$ 7,500.00	$ 7,500.00
6	Dust Control & Watering	1	LS	$ 7,500.00	$ 7,500.00
7	Construction Staking	1	LS	$ 7,000.00	$ 7,000.00
8	Erosion Control Compliance	1	LS	$ 7,500.00	$ 7,500.00
9	8" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	2,650	LF	$ 65.00	$ 172,250.00
10	8" Gate Valve Assembly	7	EA	$ 5,000.00	$ 33,125.00
11	Restore Surface Improvements	1	LS	$ 8,500.00	$ 8,500.00
			SUBTOTAL		**$ 277,075.00**
			CONTINGENCY	20%	**$ 55,415.00**
			CONSTRUCTION TOTAL		**$ 332,490.00**
INCIDENTALS					
1	Engineering Design	5.5%	LS	$ 25,000.00	$ 25,000.00
2	Bidding & Negotiating	1.7%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	4.3%	HR	$ 19,400.00	$ 19,400.00
4	Topographic & Property Survey	1.7%	EST	$ 7,500.00	$ 7,500.00
5	Funding and Administrative Services	2.2%	EST	$ 10,000.00	$ 10,000.00
6	Land & RoW Negotiation/Acquisition	11.0%	EST	$ 50,000.00	$ 50,000.00
7	Miscellaneous Engineering Services	0.6%	EST	$ 2,500.00	$ 2,500.00
			SUBTOTAL		$ 121,900.00
			TOTAL PROJECT COST		**$ 454,390.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 847
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Southwest Hildale Transmission Line 17-Oct-23
Project Location: Hildale City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 28,400.00	$ 28,400.00
2	Traffic Control	1	LS	$ 12,000.00	$ 12,000.00
3	Pre-Construction DVD	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 20,000.00	$ 20,000.00
5	Subsurface Investigation	8	HR	$ 250.00	$ 2,000.00
6	Restore Surface Improvements	1	LS	$ 12,000.00	$ 12,000.00
7	Erosion Control Compliance	2	LS	$ 8,000.00	$ 16,000.00
8	Construction Staking	1	LS	$ 12,500.00	$ 12,500.00
9	Materials Sampling & Testing	1	LS	$ 12,000.00	$ 12,000.00
10	Roadway Restoration	9,000	SF	$ 6.00	$ 54,000.00
11	12" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	1,900	LF	$ 110.00	$ 209,000.00
12	12" Gate Valve Assembly	12	EA	$ 6,750.00	$ 81,000.00
13	PRV and Vault	1	LS	$ 100,000.00	$ 100,000.00
14	Misc. Connections, Fittings and Tie-ins	1	LS	$ 35,000.00	$ 35,000.00
			SUBTOTAL		**$ 595,400.00**
			CONTINGENCY	20%	**$ 119,100.00**
			CONSTRUCTION TOTAL		**$ 714,500.00**
INCIDENTALS					
1	Engineering Design	11.6%	LS	$ 105,000.00	$ 105,000.00
2	Bidding & Negotiating	0.8%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.3%	HR	$ 29,800.00	$ 29,800.00
4	Topographic & Property Survey	1.7%	EST	$ 15,000.00	$ 15,000.00
5	Funding and Administrative Services	1.3%	EST	$ 12,000.00	$ 12,000.00
6	Permitting	0.6%	EST	$ 5,000.00	$ 5,000.00
7	Miscellaneous Engineering Services	1.7%	EST	$ 15,000.00	$ 15,000.00
			SUBTOTAL		$ 189,300.00
			TOTAL PROJECT COST		**$ 903,800.00**

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SUNRISE ENGINEERING
11 North 300 West, Washington Utah 847
Tel 435.652.8450 | **FAX** 435.652.8416

Engineer's Opinion of Probable Cost

Transmission Line to Airport 17-Oct-23
Project Location: Colorado City MCG/bcw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	Mobilization	5%	LS	$ 71,600.00	$ 71,600.00
2	Traffic Control	1	LS	$ 12,000.00	$ 12,000.00
3	Pre-Construction DVD	1	LS	$ 1,500.00	$ 1,500.00
4	Dust Control & Watering	1	LS	$ 20,000.00	$ 20,000.00
5	Subsurface Investigation	8	HR	$ 250.00	$ 2,000.00
6	Restore Surface Improvements	1	LS	$ 12,000.00	$ 12,000.00
7	Erosion Control Compliance	2	LS	$ 8,000.00	$ 16,000.00
8	Construction Staking	1	LS	$ 12,500.00	$ 12,500.00
9	Materials Sampling & Testing	1	LS	$ 12,000.00	$ 12,000.00
10	Roadway Restoration	42,750	SF	$ 6.00	$ 256,500.00
11	10" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	650	LF	$ 90.00	$ 58,500.00
12	10" Gate Valve Assembly	2	EA	$ 5,250.00	$ 10,500.00
13	12" PVC (C900) Line, Fitting, Tracer Wire, Bedding, & Backfill	7,900	EA	$ 110.00	$ 869,000.00
14	12" Gate Valve Assembly	17	EA	$ 6,750.00	$ 114,750.00
15	Misc. Connections, Fittings and Tie-ins	1	LS	$ 35,000.00	$ 35,000.00
			SUBTOTAL		**$ 1,503,850.00**
			CONTINGENCY	20%	**$ 300,800.00**
			CONSTRUCTION TOTAL		**$ 1,804,650.00**
INCIDENTALS					
1	Engineering Design	5.1%	LS	$ 105,000.00	$ 105,000.00
2	Bidding & Negotiating	0.4%	HR	$ 7,500.00	$ 7,500.00
3	Engineering Construction Services	3.7%	HR	$ 75,200.00	$ 75,200.00
4	Topographic & Property Survey	0.7%	EST	$ 15,000.00	$ 15,000.00
5	Funding and Administrative Services	0.6%	EST	$ 12,000.00	$ 12,000.00
6	Permitting	0.2%	EST	$ 5,000.00	$ 5,000.00
7	Miscellaneous Engineering Services	0.7%	EST	$ 15,000.00	$ 15,000.00
			SUBTOTAL		$ 234,700.00
			TOTAL PROJECT COST		**$ 2,039,350.00**

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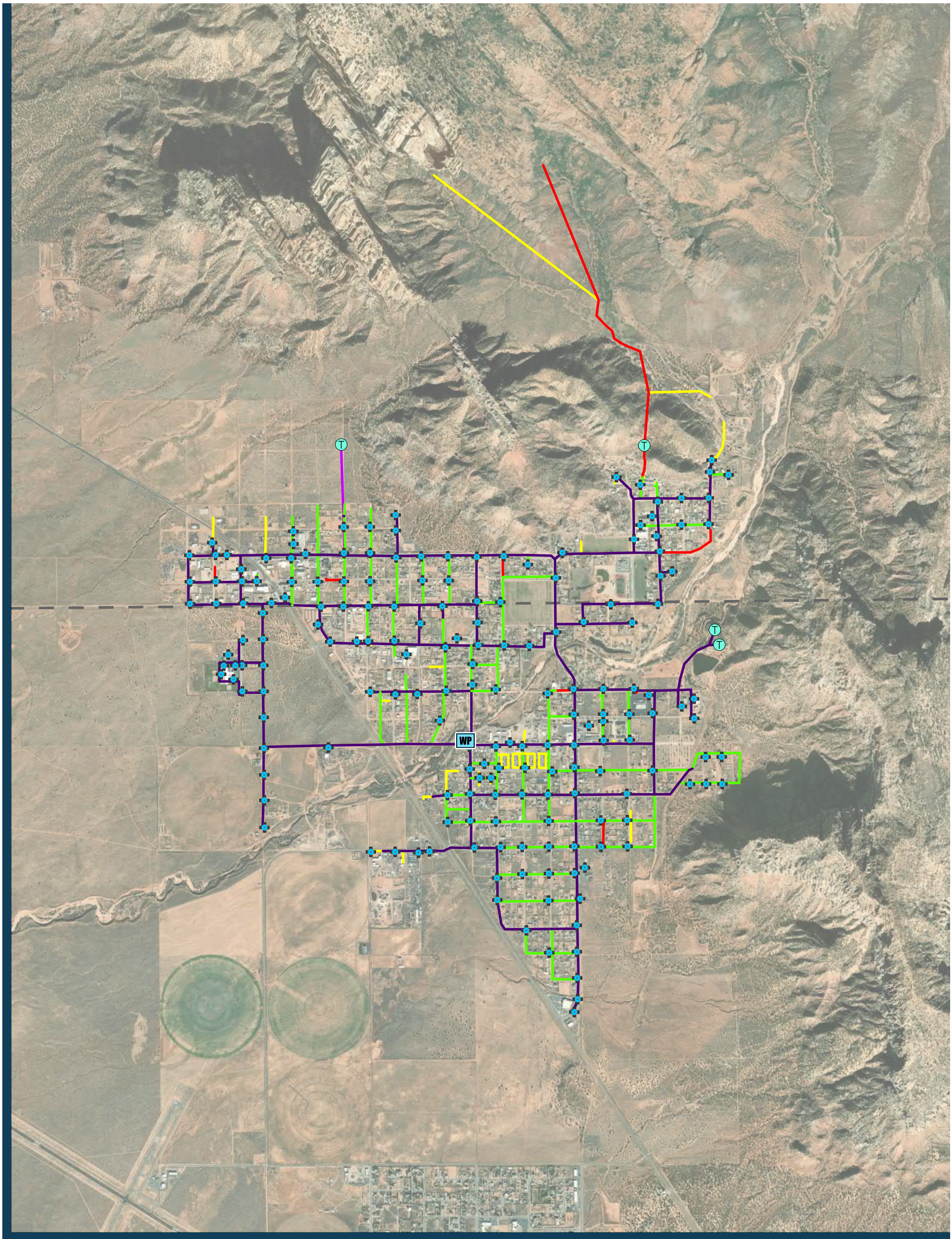
APPENDIX D
System Maps

EXISTING WATER SYSTEM



MAP LEGEND

North

0 1,125 2,250

1 In = 2,250 Feet

Water Mains
- 2"
- 4"
- 6"
- 8"
- 12"

Water Hydrants

Water Tank

Treatment Plant

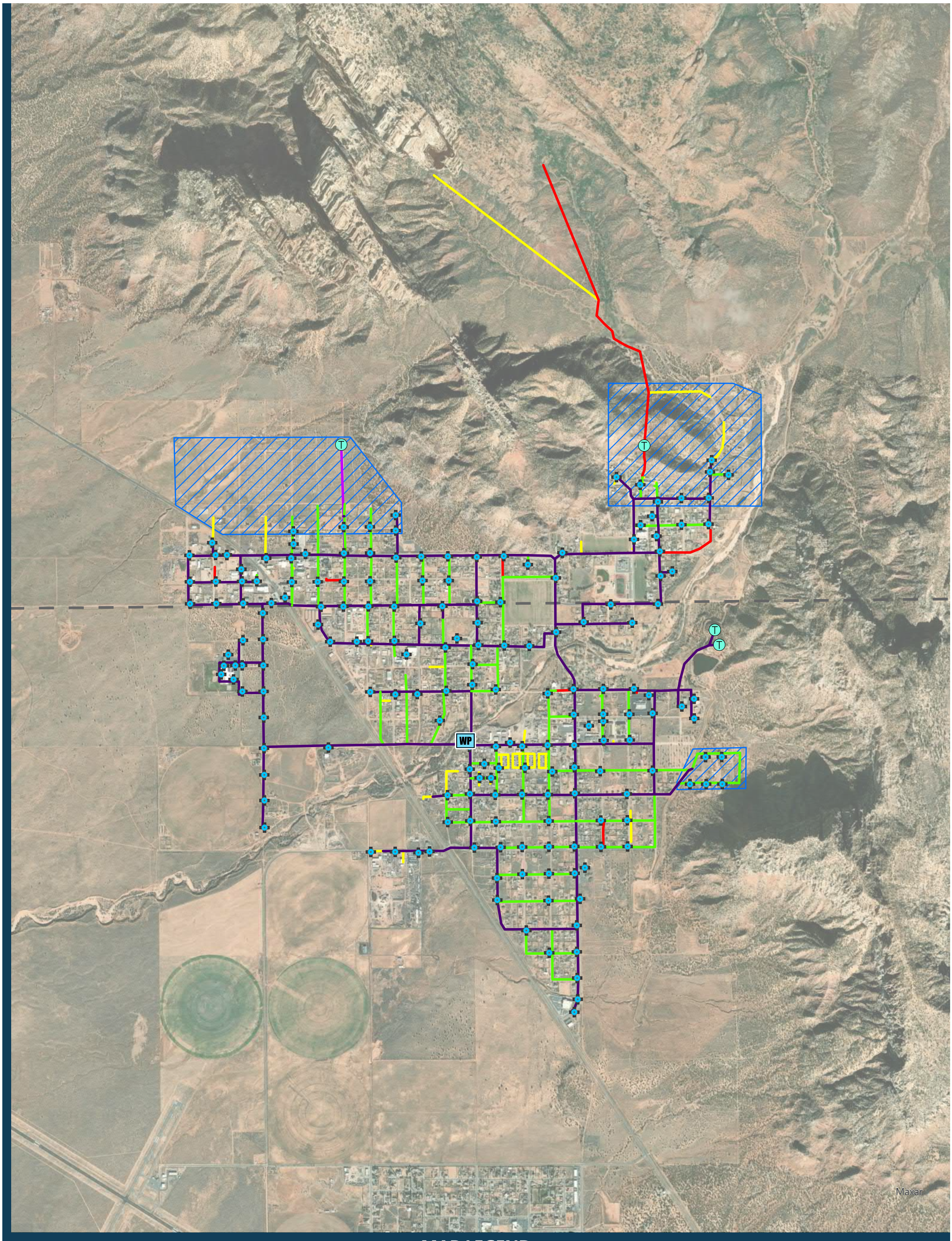
State Boundary

Hildale City
WELCOME HOME

Map Date: 10.27.2023

SUNRISE ENGINEERING

LOW FIRE FLOW AREA



MAP LEGEND

North

0 1,125 2,250

1 In = 2,250 Feet

Water Mains
- 2"
- 4"
- 6"
- 8"
- 12"

Water Hydrants

Water Tank

WP Treatment Plant

Pressure Zones

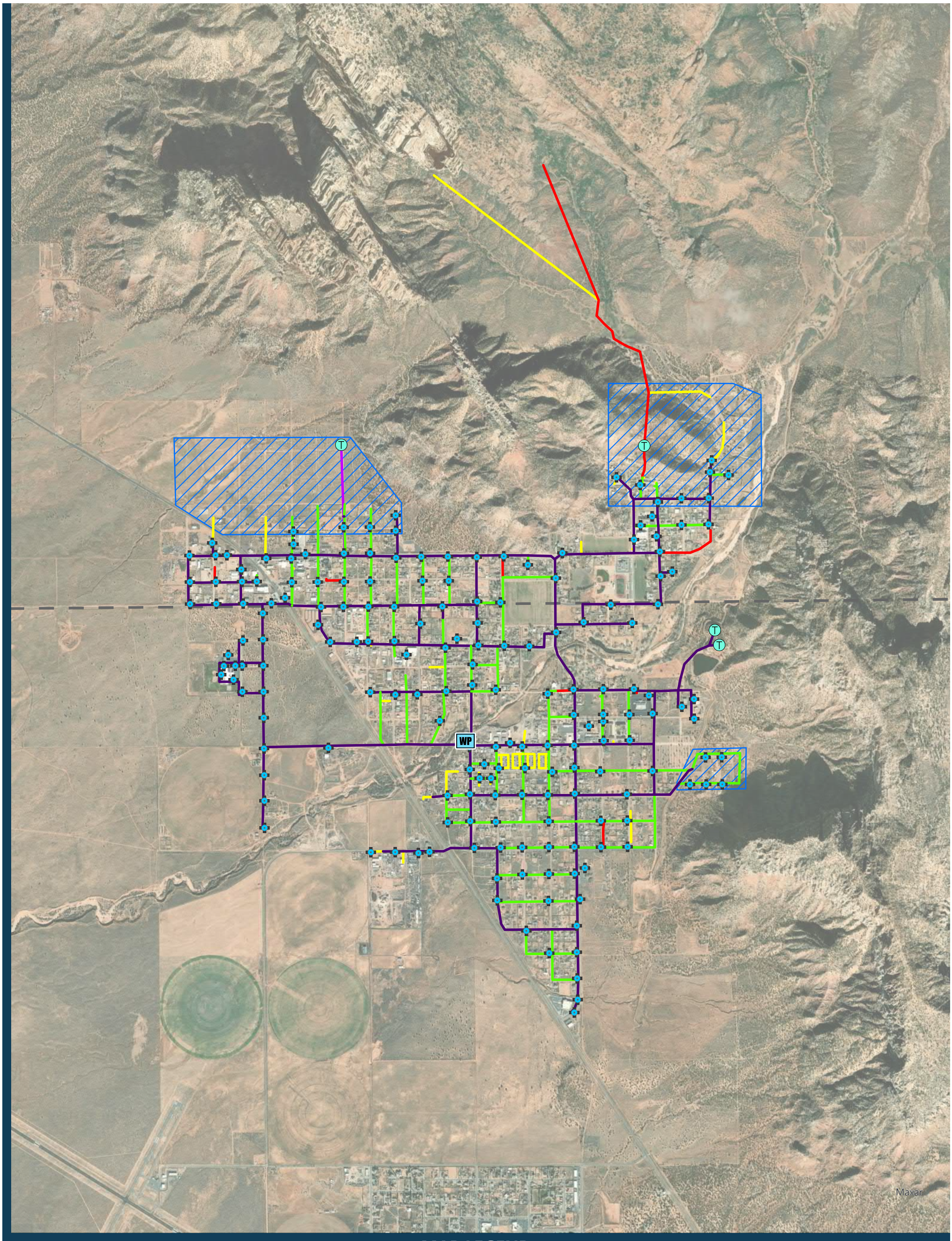
State Boundary

Hildale City
WELCOME HOME

Map Date: 10.27.2023

SUNRISE ENGINEERING

LOW PRESSURE DURING PDD SCENARIO



MAP LEGEND

North

0 1,125 2,250

1 In = 2,250 Feet

Water Mains
- 2"
- 4"
- 6"
- 8"
- 12"

Water Hydrants

Water Tank

WP Treatment Plant

Pressure Zones

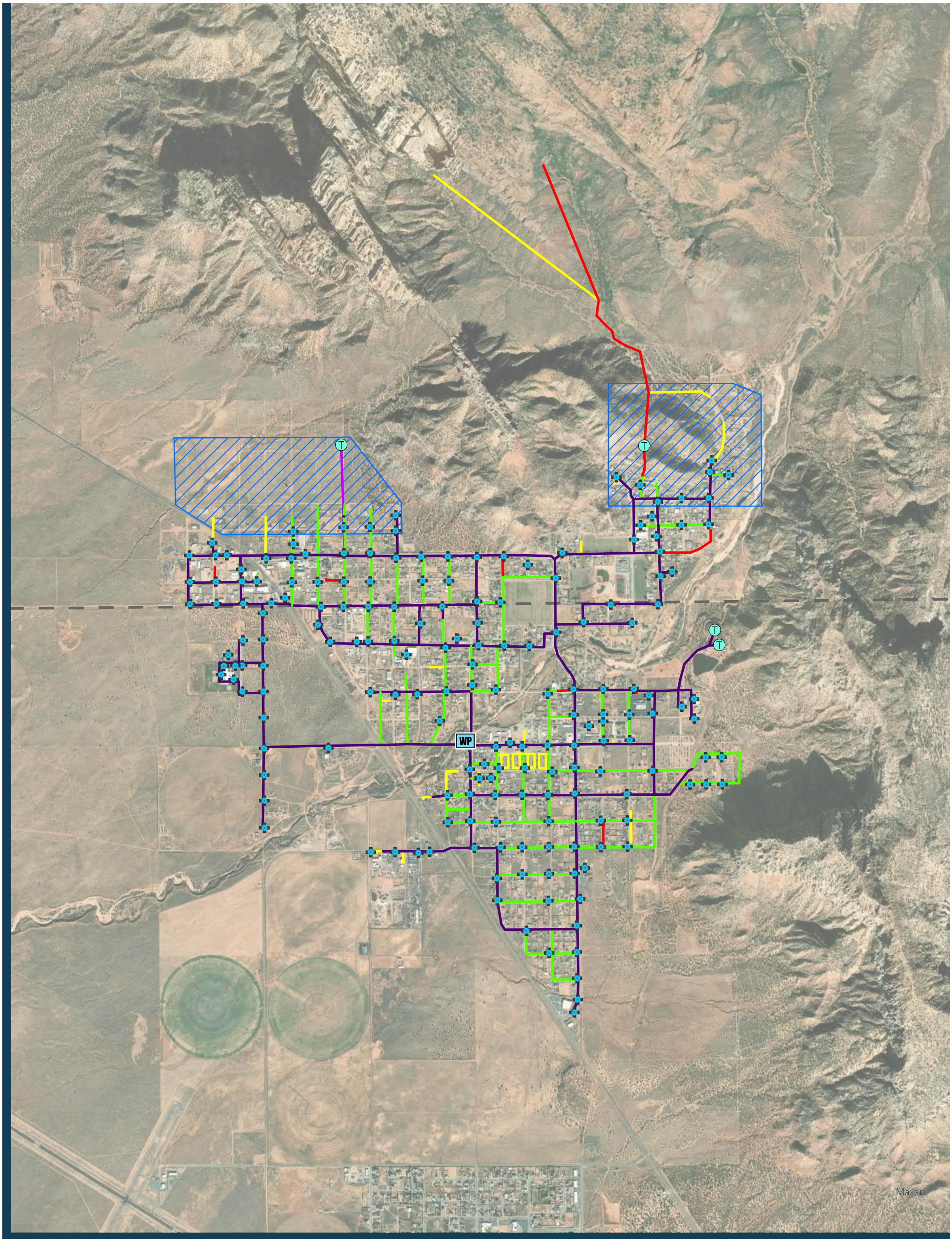
State Boundary

Hildale City
WELCOME HOME

Map Date: 10.27.2023

SUNRISE ENGINEERING

LOW PRESSURE DURING PID SCENARIO



MAP LEGEND

North

0 1,125 2,250

1 In = 2,250 Feet

Water Mains
- 2"
- 4"
- 6"
- 8"
- 12"

Water Hydrants

Water Tank

Treatment Plant

Pressure Zones

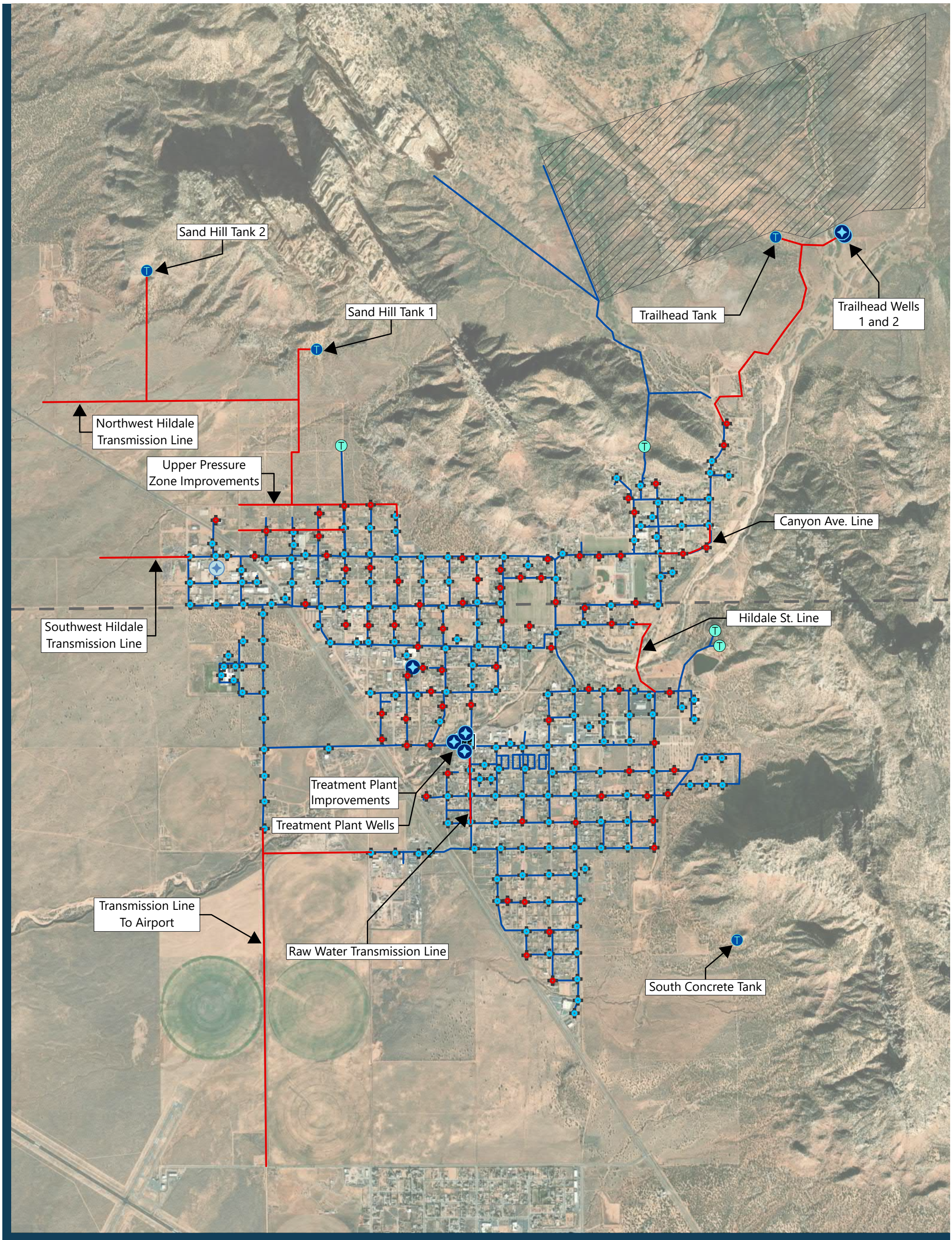
State Boundary

Hildale City
WELCOME HOME

Map Date: 10.27.2023

SUNRISE ENGINEERING

RECOMMENDED IMPROVEMENTS



MAP LEGEND

0 1,125 2,250

1 In = 2,250 Feet

Recommended Improvements
- Water Mains
- Water Hydrants
- Water Tank
- Production Well
- Hildale Ground Water Project Area

Existing Water System
- Water Mains
- Water Hydrants
- Water Tank
- Production Well
- WP Treatment Plant

State Boundary

Map Date: 10.27.2023

Hildale City
WELCOME HOME

SUNRISE ENGINEERING

APPENDIX E
Impact Fee Analysis

Impact Fee Projects & Impact Fee Eligibility

Source Projects	Current Costs	Year	Costs w/ Inflation*	Financed Costs**	% IF El.	IF El. Cost	% Hildale	Hildale IF EL. Cost	% Colorado City	Colorado City IF EL. Cost
Treatment Plant Wells	$ 1,288,700.00	2024	$ 1,327,361	$ 976,695	0.0%	$ -	50%	$ -	50%	$ -
5 Year AZ Well Field	$ 3,333,400.00	2026	$ 3,642,496	$ 2,680,212	84.3%	$ 2,259,419	50%	$ 1,129,709.00	50%	$ 1,129,709.55
5 Year UT Well Field	$ 6,923,700.00	2026	$ 7,565,714	$ 5,566,985	84.3%	$ 4,692,968	50%	$ 2,346,484.00	50%	$ 2,346,484.07
10 Year AZ Well Field	$ 3,809,600.00	2032	$ 4,970,664	$ 3,657,502	100.0%	$ 3,657,502	50%	$ 1,828,750.00	50%	$ 1,828,750.76
10 Year UT Well Field	$ 7,912,800.00	2032	$ 10,324,409	$ 7,596,881	100.0%	$ 7,596,881	50%	$ 3,798,440.00	50%	$ 3,798,440.52
			Sub total	**$ 20,478,275**		**$ 18,206,770**		**$ 9,103,383**		**$ 9,103,385**
Storage Projects										
Sandhill Tank 1	$ 5,938,100.00	2025	$ 6,299,730	$ 4,635,452	100.0%	$ 4,635,452	70%	$ 3,244,816.00	30%	$ 1,390,635.54
			Sub total	**$ 4,635,452**		**$ 4,635,452**		**$ 3,244,816**		**$ 1,390,636**
Water Treatment Projects										
Raw Water Transmission Line	$ 1,092,500.00	2024	$ 1,125,275	$ 827,997	0.0%	$ -	50%	$ -	50%	$ -
Small Treatment Plant (1,600 gpm)	$ 5,904,800.00	2025	$ 6,264,402	$ 4,609,457	100.0%	$ 4,609,457	50%	$ 2,304,728.00	50%	$ 2,304,728.44
			Sub total	**$ 5,437,454**		**$ 4,609,457**		**$ 2,304,728**		**$ 2,304,728**
Distribution System Projects										
Fire Hydrant Project	$ 1,733,500.00	2024	$ 1,785,505	$ 1,313,806	0.0%	$ -	50%	$ -	50%	$ -
Upper Pressure Zone Improvements	$ 846,500.00	2026	$ 924,993	$ 680,626	50.0%	$ 340,313	100%	$ 340,313.00	0%	$ -
Canyon St. Line	$ 388,900.00	2028	$ 450,842	$ 331,737	0.0%	$ -	50%	$ -	50%	$ -
Northwest Hildale Transmission Line	$ 1,977,400.00	2028	$ 2,292,349	$ 1,686,750	100.0%	$ 1,686,750	100%	$ 1,686,750.00	0%	$ -
Hildale St. Line	$ 454,390.00	2030	$ 558,842	$ 411,206	0.0%	$ -	50%	$ -	50%	$ -
			Sub total	**$ 4,424,126**		**$ 2,027,063**		**$ 2,027,063**		**$ -**
Future Planning Projects										
Capital Facilities Plan and IFFP & IFA Updat	$ 60,000	2028	$ 69,556	$ 79,474	100.0%	$ 79,474	50%	$ 39,737.00	50%	$ 39,737.17
			Sub total	**$ 79,474**		**$ 79,474**		**$ 39,737**		**$ 39,737**
			Total	**$ 35,054,781**		**$ 29,558,216**	**Impact Fee Amount**	**$ 16,719,727**	**Impact Fee Amount**	**$ 12,838,486**
							Number ERU Start 2024	468	Number ERU Start 2024	847
							Number ERU End 2033	1,797	Number ERU End 2033	1,934
							Number New ERU	1,329	Number New ERU	1,087
							Impact Fee per ERU	**$ 12,580.00**	**Impact Fee per ERU**	**$ 11,807.00**

* Inflation is assumed at 3%

**Financed costs assume a 20-year 4% interest loan

Fwd: Mountain Valley Estates LUWD Feasibility Report

Brant Tuttle <btuttle@neiutah.com>

Mon 11/27/2023 4:58 PM

To:City Manager <manager@hildalecity.com>;Lawrence Barlow <lawrence@uppermesa.com>

1 attachments (6 MB)

MOUNTAIN VALLEY ESTATES LUWD FEASLIBILITY REPORT Rev 11-3-23 (email).pdf;

Eric & Lawrence,

I am forwarding you an email document that I have received from Ask Creek Special Service District requesting the Mountain Valley Estates project to look at a lift station and connection to the Hildale Lagoons instead of the mechanical plant wastewater system. I have had several verbal discussion with Mike Chandler, the district superintendent, regarding the district preference for Mountain Valley Estates to connect sewer to the Hildale Lagoons.

thanks,

Brant

-------- Forwarded Message --------
Subject:RE: Mountain Valley Estates LUWD Feasibility Report
Date: Tue, 14 Nov 2023 12:02:18 -0700
From:amber@ashcreekssd.com
To:'Brant Tuttle' <btuttle@neiutah.com>
CC:mike@ashcreekssd.com, 'Robert Beers' <rbeers@utah.gov>

Brant,

Based on our conversation yesterday, Ash Creek would like you to provide additional information on the cost/feasibility of a lift station and use of the Hildale Lagoons. This may be a better alternative to a LUWD system and should be further explored. Please see attached for additional redline comments on the feasibility report.

Regarding your questions below, Richard Jex should be able to sign the construction permit application for this project. The construction drawings should be submitted to Ash Creek. We will review construction drawings and submit them to Robert after our review.

Please let us know if you have any questions.

Thanks,

ASH CREEK SPECIAL SERVICE DISTRICT

Amber Gillette, P.E.
Engineer

435-635-2348 Ext. 110
amber@ashcreekssd.com

Fw: Registration Confirmation - 500204

Jerry Postema <jerryp@hildalecity.com>
Wed 9/20/2023 4:26 PM

To:Shawn Guzman <ShawnG@hildalecity.com>;Eric Duthie <EricD@hildalecity.com>
Cc:Vance Barlow <VanceB@tocc.us>

Here is the on lie registration for the PFAS Class Action Settlement.

Thanks
Jerry

From: PWS Settlement Claims Administrator <notice@pnclassaction.com>
Sent: Wednesday, September 20, 2023 3:18 PM
To: Jerry Postema <jerryp@hildalecity.com>
Subject: Registration Confirmation - 500204

Dear Jerald Postema,

Thank you for your submission. Please note that this is the first step in the claims process and understand that you have not yet submitted a Claims Form and there is no guarantee of payment at this time. Once your information has been reviewed, you will receive a notification via email at the contact email address that you provided which includes information on how to continue with submission of your Claims Form(s).

Registration Confirmation Number: 500204

The next step in the claims process is for each Class Member (Public Water System) to perform "Baseline Testing" – that is, Settlement Class Members must test every Water Source (groundwater well or surface water system) they own for PFAS. Baseline Testing is different from what the EPA requires for UCMR 5. Under UCMR 5, a Public Water System is required to test for PFAS only at the entry points to its distribution system, but Baseline Testing requires Settlement Class Members to test every Water Source.

By performing Baseline Testing to determine which Water Sources have current PFAS detections, each Settlement Class Member will be able to submit Claims Forms, have its Water Sources scored, and receive Allocated Awards based on those scores.

Below is important information regarding how settlement class members will be categorized as *Phase One* or *Phase Two* class members and additional details related to Baseline Testing requirements which are necessary to complete the claims process.
Please read this information carefully.

CLASS MEMBER CATEGORIZATION
Based on the information provided in your submission, the Public Water System(s) identified may be preliminarily categorized as either a Phase One or a Phase Two class member for each settlement program. The preliminary categorization will determine the relevant information and/or Claims Form(s) that the Public Water System (PWS) is required to submit to complete the claims process.

Phase One Qualifying Class Member definitions are included below for each settlement program:

- Phase One Qualifying Class Member – 3M Settlement: A Phase One Qualifying Class Member is an Active Public Water System in the United States that has one or more Impacted Water Source as of **June 22, 2023.**

- Phase One Qualifying Class Member – DuPont Settlement: A Phase One Qualifying Settlement Class Member is a Public Water System in the United States of America that draws or otherwise collects from any Water Source that, on or before **June 30, 2023** was tested or otherwise analyzed for PFAS and found to contain any PFAS at any level.

Phase Two Qualifying Class Member definitions are included below for each settlement program:

- Phase Two Qualifying Class Member – 3M Settlement: A Phase Two Qualifying Class Member is an Active Public Water System in the United States that does not have one or more Impacted Water Sources as of the **June 22, 2023** and (i) is required to test for certain PFAS under UCMR-5 or (ii) serves more than 3,300 people.

- Phase Two Qualifying Class Member – DuPont Settlement: A Phase Two Qualifying Settlement Class Member is a Public Water System in the United States of America that:
  - a) is not a Phase One Qualifying Settlement Class Member and
  - b) is subject to the monitoring rules set forth in UCMR 5 or is required under applicable state or federal law to test or otherwise analyze any of their Water Sources or the water they provide for PFAS before the UCMR 5 deadline.

For more information on Phase One and Phase Two class member categories, please refer to the Settlement Agreements and related exhibits at www.PFASWaterSettlement.com .

BASELINE TESTING

Each Class Member must perform Baseline Testing. Baseline Testing requires each Class Member to test *each of its Water Sources* for PFAS; request from the laboratory that performs the analyses all analytical results, including the actual numeric values of all analytical results; and submit the detailed PFAS test results to the Claims Administrator on a Claims Form(s) by the relevant Claims Form deadline.

Baseline Testing requires that each Water Source be analyzed for at least the 29 PFAS chemicals required under UCMR 5, using a methodology consistent with the requirements of UCMR 5 or applicable State requirements (if stricter). Baseline Testing may be performed by any laboratory accredited by a state government or federal regulatory agency for PFAS analysis that uses any state- or federal agency-approved PFAS analytical method that is consistent with (or stricter) than the requirements of UCMR 5.

Requirements related to prior testing of Water Sources are included below for each settlement program:

- 3M Settlement:
  - Any Water System tested on or before **June 22, 2023**, using a state- or federal-approved methodology and found to contain a Measurable Concentration of PFAS, does not need to be tested again for purposes of Baseline Testing.
  - Any Water Source tested **prior to January 1, 2019**, that did not result in a Measurable Concentration of PFAS, must retest to meet Baseline Testing requirements.
  - If a Water Source tested **January 1, 2019, or later,** and it did not result in a Measurable Concentration of PFAS, no further testing of that Water Source is required.

- DuPont Settlement:

- Any Water Source tested on or before **June 30, 2023** and found to contain a detection of PFAS, does **NOT** need to test that Water Source again for purposes of Baseline Testing.
- Any Water Source tested **before December 7, 2021** that did not result in a PFAS detection must retest.
- If a Water Source tested **December 7, 2021, or later,** and it did not result in a detection of PFAS, no further testing is required.

Failure to test and submit Qualifying Test Results for Water Sources will disqualify Water Sources from consideration for present and future payments.

Class Counsel has arranged for discounted testing with the following laboratory to assist Class Members with Baseline Testing. There is no requirement to use the listed laboratory.

Eurofins Environmental Testing
Telephone Number: (916) - 374 - 4499
https://www.eurofinsus.com/environment-testing/pfas-testing/pfas-water-provider-settlement/ .

For more information, please refer to the Settlement Agreements and related exhibits at www.PFASWaterSettlement.com . You may also contact the Claims Administrator at info@pfaswatersettlement.com .

Athena Cawley

Subject: FW: Creekside Park Subdivision / Preliminary Plat Comments
Attachments: Creekside Park Subdivision_12062023.pdf

From: Justin Jones <jjones@civilscience.com>
Sent: Tuesday, December 5, 2023 3:22 PM
To: Jerry Postema <jerryp@hildalecity.com>; Nathan Fischer <NathanF@hildalecity.com>
Cc: Anthony Hammon <concretekid1@gmail.com>; Robert Burkhill <rburkhill@civilscience.com>
Subject: Re: Creekside Park Subdivision / Preliminary Plat Comments

Jerry & Nathan,

I apologize for the delayed response, see responses in red below. When are you available to meet? We're trying to resubmit for Town Council tomorrow morning, but I know that's short notice for a meeting.

Justin

Preliminary Water Demand & Fire Flow Calculations		
Description	Value	Unit
Person Per Household	4	person
Demand Per Person Per Day	100	gpd
Average Demand Per Household	400	gpd
Peak Factor	1.7	
Peak Demand Per Household	680	gpd
	0.47	gpm
Number of Lots	55	lots
Subdivision Household Average Demand	22,000	gpd
	15	gpm
Subdivision Household Peak Demand	37,400	gpd
	26	gpm
Square Footage of Landscaping	68,263	sf
Plant Canopy Percentage	20	percent
Plant Canopy Area	13,653	sf
Peak Monthly(June) Plant Water Demand	2.75	in
Peak Monthly (June) Landscaping Water Demand	23,404	gal
Peak Landscaping Demand	780	gpd
	0.54	gpm
Total Peak Demand	27	gpm
Fire Flow	1,000	gpm
Total Peak Demand + Fire Flow	1,027	gpm

Preliminary Sewer Demand		
Description	Value	Unit
Person Per Household	4	person
Demand Per Person Per Day	80	gpd
Average Demand Per Household	320	gpd
	0.22	gpm
Peak Factor	2.9	
Peak Demand Per Household	928	gpd
	0.64	gpm
Number of Lots	55	lots
Total Subdivision Average Demand	17,600	gpd
	12	gpm
Total Subdivision Peak Demand	51,040	gpd
	35	gpm

From: Jerry Postema <jerryp@hildalecity.com>
Sent: Tuesday, November 21, 2023 9:44 AM
To: Justin Jones <jjones@civilscience.com>; Nathan Fischer <NathanF@hildalecity.com>
Cc: Anthony Hammon <concretekid1@gmail.com>; Robert Burkhill <rburkhill@civilscience.com>
Subject: Re: Creekside Park Subdivision / Preliminary Plat Comments

Hi Justin! We can meet virtually and discuss the questions you received from the review of the plat.

For the meeting, please include myself and Nathan Fischer.

Prior to the meeting we will need some additional information from you on the proposed plat;

1. What is the calculated flow (water and sewer) for each unit in the subdivision? See tables above.
2. What is the calculated outdoor use for the subdivision? The landscaping is planned to be low water/xeriscaping with trees. Expected water use is low, see table above.
3. Have you completed any hydraulic modeling of the subdivision? No, is this needed? If so, how do we get a fire hydrant flow test to provide needed modeling information?
4. Will the individual units have interior fire suppression? No they will not.
5. The plan shows ROW and Easements, will these be roads and what is the proposed cross sections of the roads and the utility corridors? Yes, the roadways will be 50' public ROW with 15' public utility & drainage easements adjacent to the ROW.
6. Is the intent to feed the units farthest off the main "road"/drive with a main water and sewer line? Who will own and maintain the water and sewer lines outside of the road? The shared driveways/cross access easements will also be public utility & drainage easements, so the mains

that extend through these are planned to be public, owned by HCCU. We assume the individual services would be privately owned, past a location determined by the HCCU (water meter, ROW, PUE, etc.)

7. Have you provided, or will you provide, a draft development agreement to receive water from the City by bringing water for your development? The project developer can enter into a development agreement, what are the requirements of the agreement?

As to the Utilities, HCC has natural gas in the area for connections. For all communications with HCC Utilities, please contact myself and Nathan Fischer.

Thanks
Jerry

From: Justin Jones <jjones@civilscience.com>
Sent: Monday, November 20, 2023 9:14 PM
To: Jerry Postema <jerryp@hildalecity.com>; Nathan Fischer <NathanF@hildalecity.com>
Cc: Anthony Hammon <concretekid1@gmail.com>; Robert Burkhill <rburkhill@civilscience.com>
Subject: Creekside Park Subdivision / Preliminary Plat Comments

Jerry & Nathan,

We have received 1st comments from Sunrise Engineering on the preliminary plat submittal for a new residential subdivision in Colorado City. We've attached the plans for your reference.

A few of the comments we need help resolving are below:

- Section 153.038 of the CCMC requires that a statement as to the type of water facilities proposed appears on the preliminary plat. It shall be the responsibility of the subdivider to furnish the town such evidence as the town may require for satisfaction regarding facilities for supplying domestic water. A statement of water adequacy is required from the Arizona Department of Water Resources either for the proposed subdivision or for the water company (private or public) which will serve the subdivision pursuant to A.R.S. §45-108. The construction plans indicate that water will be provided to the subdivision. A will serve letter was not provided for review, so the town will need to verify that capacity exists to serve this subdivision. In addition, no documentation from the Arizona Department of Water Resources was provided for review.
    - **What is required from the Utilities Department to satisfy the requirements?**
    - **Is a water model needed? If so, how do we get the required fire hydrant flow testing to provide static & residual pressures?**
    - **What do we need from ADWR?**
- CCMC Section 153.039 states that it shall be the responsibility of the subdivider to furnish the town water and sewer department such evidence as that department may require for its satisfaction as to the design and connection to the town sanitary sewage system. No documentation was provided for review verifying that capacity exists to serve this development.
    - **What is required from the Utilities Department to satisfy the requirements?**
- Utility location and placement should comply with CCMC Section 156.24.
    - **On the proposed east-west through street there are only homes on the south side of the street. To shorten proposed service laterals, we propose to shift utility mains toward the south side of the road, which does not match the city standards for utility locations. As long as we maintain the required separations, is this acceptable?**

Please confirm the utility providers for the project:
Power: Garkane Energy (Do you have a contact for Garkane?)
Water: HCC Utility Dept.
Sewer: HCC Utility Dept.

Gas: HCC Utility Dept. (is natural gas or propane available?)
Solid Waste: Arizona Strip Landfill Corporation
Communications: ?? (Contact info?)

Can you verify the existing utility sizes adjacent to the project in Hammon Street and Barlow Street?
If you'd prefer to have a Zoom meeting to discuss, please let me know.
Thanks for your help.

Justin

CivilScience
Engineers Surveyors Solutions
3160 W Club House Drive
Lehi, UT 84043

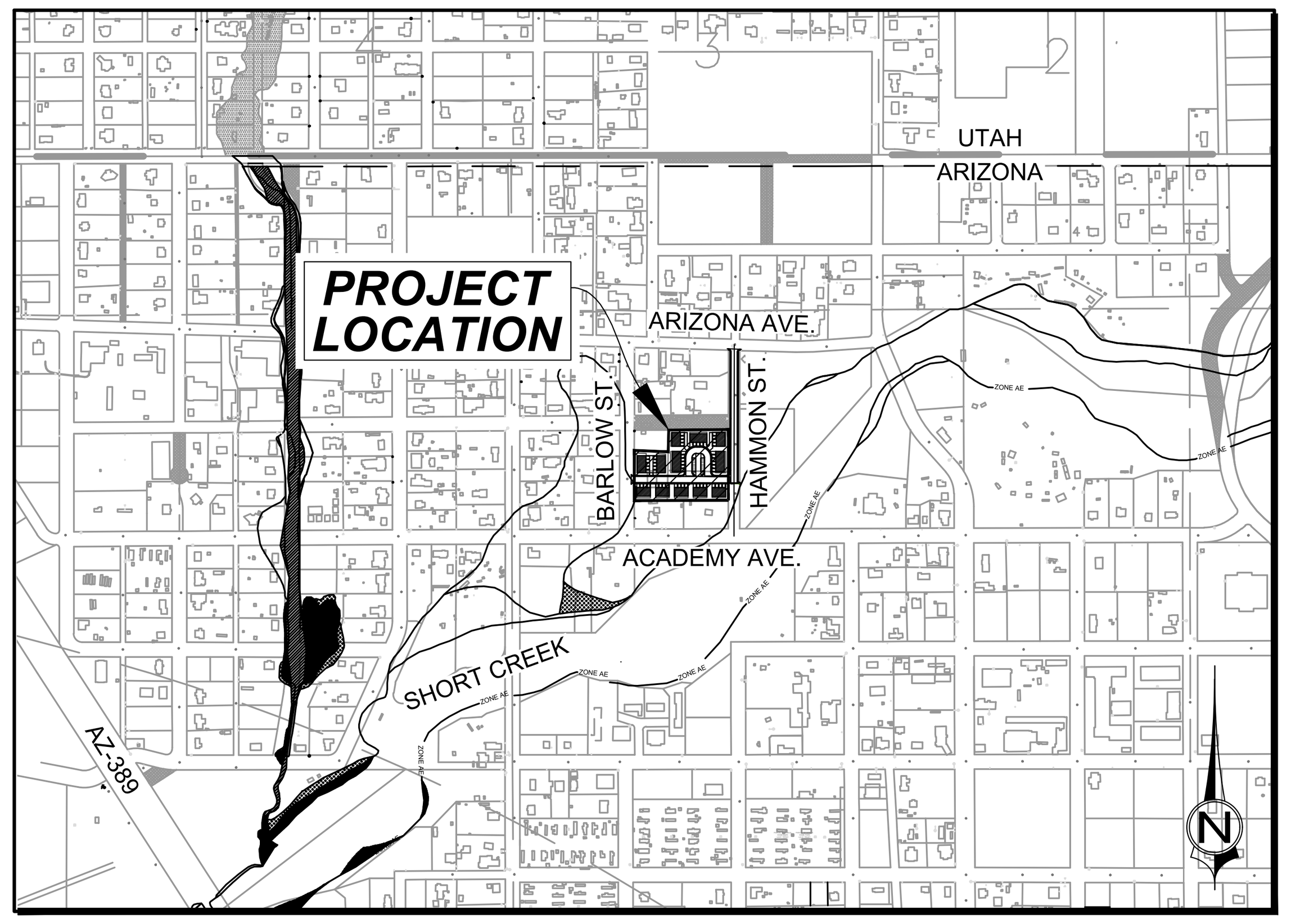
Justin Jones, P.E.
Senior Design Engineer
801 889 8201 c
801 768 7200 x157 w

CREEKSIDE PARK SUBDIVISION

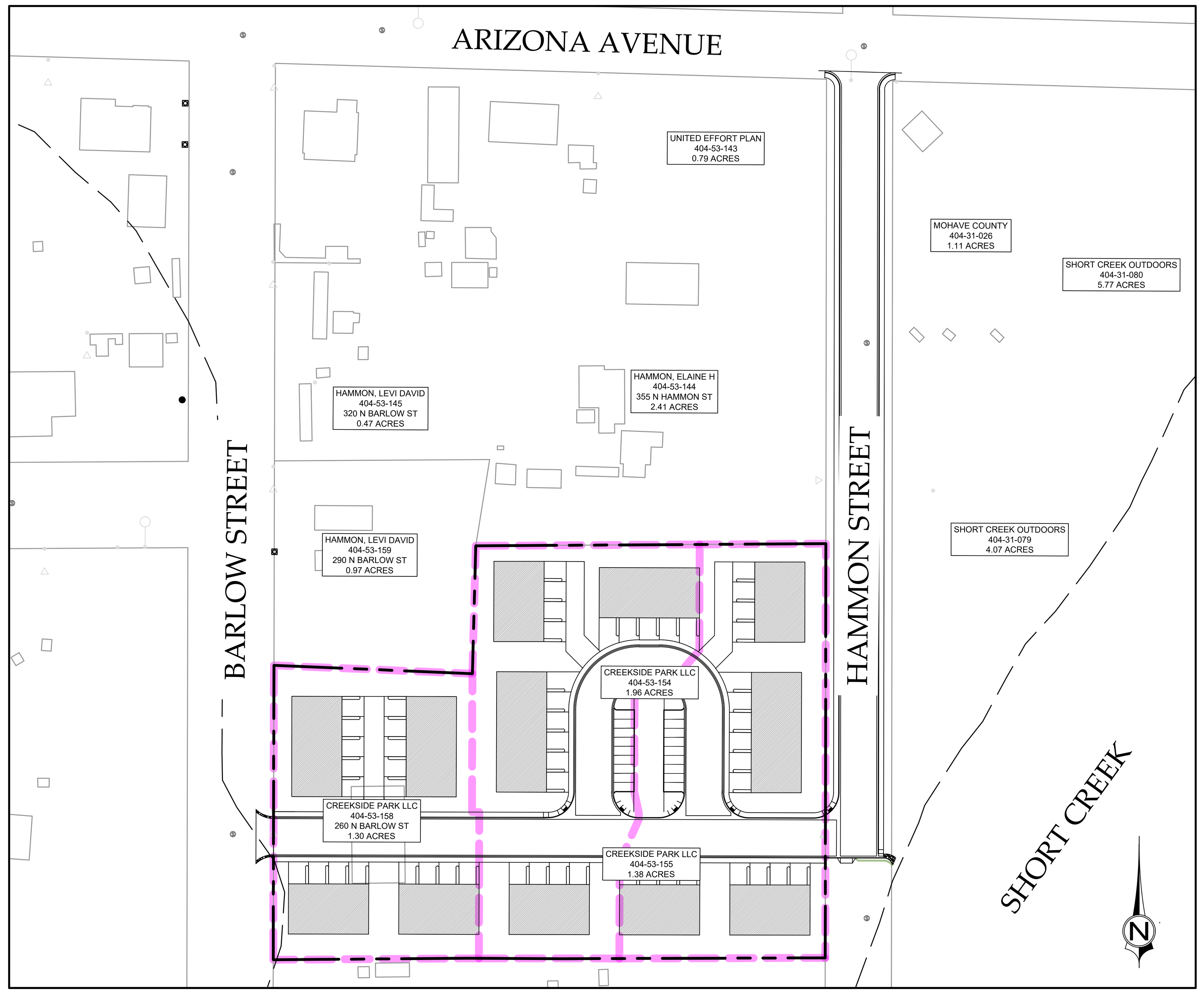
LOCATED IN THE SOUTHEAST CORNER OF SECTION 31, TOWNSHIP 42 NORTH, RANGE 6 WEST, GILA-SALT RIVER PRINCIPAL MERIDIAN

COLORADO CITY, ARIZONA

DECEMBER, 2023



VICINITY MAP (N.T.S.)



PROJECT MAP (N.T.S.)

SHEET INDEX

SHEET NO.	SHEET	SHEET TITLE
1	CV	COVER
2	GN01	GENERAL NOTES
3	GN02	LEGEND & ABBREVIATIONS
4	TS01	TYPICAL SECTIONS
5	SP01	SITE PLAN
6	GP01	GRADING PLAN
7	UP01	UTILITY PLAN
8	PP01	PLAN & PROFILE
9	DT01	DETAILS

OWNER

ANTHONY HAMMON
PO BOX 178
HURRICANE, UT 84737
435.691.4064

CIVIL ENGINEER

CivilScience
3160 WEST CLUBHOUSE DRIVE
LEHI, UT 84043
801.768.7200

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	BY	APR	DATE

REVISION

COVER

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #: FF 22301.00
DATE: DEC. 2023
DESIGN BY: RBIII
CHECKED BY: JGJ
SHEET CV
1 OF 9

PLOT: 2023-12-06 03:06 PM
PATH: L:\UTAH\PROJECTS\ACTIVE 2022\FF22301.00 - HAMMON SUBDIVISION\700 - CAD\SHEET FILES\22301_SHEETS.DWG

GENERAL PROJECT NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE CURRENT COLORADO CITY STANDARDS AND SPECIFICATIONS AND WITH ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL ORDINANCES AND LAWS.
2. THE CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE CONSTRUCTION.
3. THE CONTRACTOR SHALL COORDINATE SITE CONSTRUCTION WITH ALL UTILITY CONSTRUCTION (POWER, TELEPHONE, GAS, CABLE, ETC.) AND OTHER WHICH MAY BE SPECIFIC TO THE PROJECT.
4. DEVELOPER AND THEIR CONTRACTOR(S) TO ATTEND A PRE-CONSTRUCTION MEETING WITH COLORADO CITY ENGINEERING AND PUBLIC WORKS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION
5. DEVIATION FROM THESE PLANS WITHOUT THE PRIOR WRITTEN CONSENT OF THE ENGINEER MAY CAUSE THE WORK TO BE UNACCEPTABLE.
6. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS AND LIAISON WITH UTILITY COMPANIES IN THE PROCESS OF LOCATING, RELOCATION, AND TIE-IN TO UTILITIES. ALSO, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL INSPECTORS, INCLUDING COLORADO CITY INSPECTORS PRIOR TO BEGINNING SITE CONSTRUCTION.
7. IN THE CASE OF UNFORESEEN CONSTRUCTION COMPLICATIONS OR DISCREPANCIES, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY.
8. THE PLANS WERE PREPARED IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING DESIGN. THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE PLANS AS CONSTRUCTED EXCEPT WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

CONSTRUCTION SITE SAFETY

1. THE CONTRACTOR IS REQUIRED TO MEET ALL APPLICABLE REGULATIONS CONCERNING PROJECT SAFETY AND ASSUMES FULL RESPONSIBILITY FOR SAFETY ON THE PROJECT.
2. WORKMEN AND THE PUBLIC SHALL BE PROTECTED BY THE CONTRACTOR FROM ANY AND ALL HAZARDS CONNECTED WITH THE CONSTRUCTION WORK.
3. OPEN TRENCHES, MATERIALS, OR EQUIPMENT WITHIN THE WORKING LIMITS ARE TO BE PROTECTED BY THE USE OF ADEQUATE BARRICADES.
4. ALL WORK SHALL BE IN CONFORMANCE WITH CURRENT OSHA REGULATIONS FOR PROJECTS OF THIS TYPE.
5. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S WORK IS NOT INTENDED TO INCLUDE THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES EITHER, ON, OR NEAR THE CONSTRUCTION SITE.

CONCRETE

1. CONCRETE SHALL BE FURNISHED BY A CONCRETE MIXING PLANT, AND SHALL MEET INDUSTRY STANDARDS FOR PORTLAND CEMENT, AGGREGATE, COMPRESSIVE STRENGTH, AND SLUMP.
2. RUB, CURE, AND PROTECT CONCRETE STRUCTURES, CURBS, AND/OR CURB AND GUTTER. PROVIDE EXPANSION AND CONTRACTION JOINTS AT A MAXIMUM OF 20' O.C.

EARTHWORK

1. CONTRACTOR SHALL BE PROVIDED WITH A GEOTECHNICAL EXPLORATION REPORT BY OWNER. REPORT COMPLETED BY LANDMARK TESTING & ENGINEERING, DATED DECEMBER 5, 2023.

TRAFFIC CONTROL AND SIGNAGE

1. THE CONTRACTOR SHALL MAINTAIN INGRESS/EGRESS ACCESS TO INDIVIDUAL PROPERTY OWNERS AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE DETOURS AND ANY TEMPORARY CLOSURES WITH EACH PROPERTY OWNER AND THE COLORADO CITY ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL KEEP DURATION OF ALL CLOSURES AND DETOURS TO A MINIMUM.
2. THE CONTRACTOR SHALL MAINTAIN TEMPORARY DETOUR ROADS UNTIL A DETOUR IS NO LONGER NECESSARY.
3. THE CONTRACTOR SHALL FOLLOW THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION.
4. THE CONTRACTOR SHALL FOLLOW ADOT STANDARD DRAWINGS WHEN SETTING UP THE TRAFFIC CONTROL DEVICES WITHIN ADOT RIGHT-OF-WAYS.

REMOVALS

1. ANY EXISTING STRUCTURES DISTURBED BY CONSTRUCTION NOT EXPLICITLY SHOWN TO BE DISTURBED WITHIN THESE PLANS ARE TO BE RESTORED TO THEIR ORIGINAL LOCATION AND CONDITION. ALL STRUCTURES SUCH AS CURB AND GUTTER, CONCRETE AND BITUMINOUS SIDEWALKS, PAVING BRICKS, FENCING, RETAINING WALLS, ETC., IMPACTED BY THE PROPOSED IMPROVEMENTS MAY NOT BE INDICATED.
2. EXCESS EXCAVATED MATERIALS INCLUDING PIPE, STUMPS, ROOTS, SOIL MATERIALS OR ANY OTHER ITEMS THE OWNER DOES NOT WISH TO SALVAGE SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY, INCIDENTAL TO THE CONTRACT. ASPHALT AND CONCRETE SHALL BE DISPOSED OF OFFSITE AT A LICENSED LANDFILL, INCIDENTAL TO THE CONTRACT.

UTILITY NOTES

1. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES EITHER DIRECT OR THROUGH BLUE STAKE TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION.
2. CONTRACTOR TO VERIFY BY POTHOLING BOTH THE VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO INSTALLING ANY NEW LINES. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE.
3. CONTRACTOR MUST START AT LOW END OF ALL NEW GRAVITY UTILITY LINES. MECHANICAL SUB-CONTRACTOR MUST BE PROVIDED CIVIL SITE DRAWINGS FOR COORDINATION AND TO CHECK THE FLOW FROM THE LOWEST POINT IN BUILDING TO THE FIELD VERIFIED CONNECTION AT THE EXISTING MAIN. NO EXTRA COMPENSATION IS TO BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO FAILURE TO COMPLY WITH THESE REQUIREMENTS.
4. CONTRACTOR IS TO VERIFY LOCATION, DEPTH, SIZE, TYPE, AND OUTSIDE DIAMETERS OF UTILITIES IN THE FIELD BY POTHOLING A MINIMUM OF 300 FEET AHEAD, PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. EXISTING UTILITY INFORMATION SHOWN ON PLANS OR OBTAINED FROM UTILITY COMPANIES OR BLUE STAKED MUST BE ASSUMED AS APPROXIMATE, REQUIRING FIELD VERIFICATION.
5. CULINARY WATER AND FIRE SERVICE LINES TO BE CONSTRUCTED IN ACCORDANCE WITH LOCAL GOVERNING MUNICIPALITY STANDARDS AND SPECIFICATIONS.
6. SANITARY SEWER MAINS AND LATERALS TO BE CONSTRUCTED IN ACCORDANCE WITH LOCAL GOVERNING MUNICIPALITY SEWER DISTRICT STANDARDS AND SPECIFICATIONS.
7. STORM DRAIN TO BE CONSTRUCTED IN ACCORDANCE WITH THE GOVERNING MUNICIPALITY STANDARDS AND SPECIFICATIONS.
8. ALL STORM DRAIN PIPE PENETRATIONS INTO BOXES SHALL BE CONSTRUCTED WITH WATER TIGHT SEALS ON THE OUTSIDE AND GROUTED SMOOTH WITH A NON-SHRINK GROUT ON THE INSIDE. CONDUITS SHALL BE CUT OFF FLUSH WITH THE INSIDE OF THE BOX.
9. NO CHANGE IN THE DESIGN OF UTILITIES AS SHOWN WILL BE MADE BY THE CONTRACTOR WITHOUT THE WRITTEN APPROVAL OF THE GOVERNING MUNICIPALITY, OR OTHER AUTHORITY HAVING JURISDICTION OVER THAT UTILITY.
10. THE DESIGN AND CONSTRUCTION OF WATER, WASTEWATER, ELECTRIC AND GAS UTILITIES SHALL BE IN ACCORDANCE WITH THE APWA (AMERICAN PUBLIC WORKS ASSOCIATION), UTAH CHAPTER, MANUAL OF STANDARD SPECIFICATIONS AND MANUAL OF STANDARD PLANS, EXCEPT AS AMENDED BY THE CCMC.

GRADING NOTES

1. ALL IMPORTED STRUCTURAL FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO DELIVERY TO THE SITE. ALL IMPORTED STRUCTURAL FILL SHALL BE PLACED IN 8-INCH LOOSE HORIZONTAL LIFTS AND COMPACTED TO A MINIMUM OF 95 PERCENT OF MAXIMUM DRY DENSITY (ASTM D-1557).
2. ALL EXCAVATION, GRADING AND FILL OPERATIONS WITHIN THE BUILDING AREA SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER TO VERIFY SUB-SOIL CONDITIONS AND DETERMINE ADEQUACY OF SITE PREPARATION, SUITABILITY OF FILL MATERIALS AND COMPLIANCE WITH COMPACTION REQUIREMENTS.
3. THE CONTRACTOR SHALL PROVIDE SUITABLE EQUIPMENT TO CONTROL DUST AND AIR POLLUTION CAUSED BY CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL ALSO PROVIDE SUITABLE MUD AND DIRT CONTAINMENT TO MAINTAIN THE WORK SITE, ACCESS ROADWAYS AND ADJACENT PROPERTIES IN A CLEAN CONDITION.
4. ALL EXCAVATION AND GRADING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF COLORADO CITY AND APPENDIX K OF THE UNIFORM BUILDING CODE, AND THE SPECIFICATIONS AND REQUIREMENTS INCLUDED IN THE GEOTECHNICAL REPORT.
5. CONTRACTOR IS RESPONSIBLE FOR ALL ON-SITE INTERIM DRAINAGE AND DETENTION DURING CONSTRUCTION.

EROSION CONTROL NOTES

1. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN AN AZPDES PERMIT. CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS OF THE AZPDES PERMIT AND SWPPP.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. ADDITIONAL CONTROL DEVISES MAY BE REQUIRED UPON INSPECTION OF PROPOSED FACILITIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE STREETS CLEAN AND FREE FROM DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL STORM DRAIN FACILITIES ON SITE AND ADJACENT TO THE SITE NEED TO BE PROTECTED FROM SITE RUNOFF. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLETS BECOMING FUNCTIONAL.
6. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION, OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
7. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING ARE IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVEMENT AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLES WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
11. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF BITUMINOUS PAVING FOR ROAD CONSTRUCTION.
12. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT. ANY NEEDED CLEANING AND REPAIRS NEED TO BE DONE IMMEDIATELY UPON DISCOVERY. ALL UTILITY LINES SHALL BE CLEANED OF DIRT AND DEBRIS PRIOR TO BEING PUT INTO SERVICE DOWN-GRADE LINES MUST BE PROTECTED FROM WASH-WATER DURING THE CLEANING TO AVOID CONTAMINATION AND COMPROMISING OUTFALL CLEANLINESS.

DUST CONTROL NOTES

TEMPORARY MODIFICATION MEASURES

1. BLOWING DUST MUST BE CONTROLLED AT ALL TIMES. INSTALLATION OF A SILT SCREEN AND SITE WATERING SHALL BE USED TO CONTROL DUST. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
2. VEGETATIVE COVERINGS: TEMPORARY SEEING AND MULCHING MAY BE APPLIED TO COVER BARE SOIL AND TO PREVENT WIND EROSION. THE SOIL MUST BE KEPT MOIST TO ESTABLISH COVER.
3. BARRIERS: SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND BLOWN SOIL. BARRIERS PLACES AT RIGHT ANGLES TO PREVAILING WIND CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.
4. CALCIUM CHLORIDE: THIS MATERIAL IS APPLIED AT A RATE THAT WILL KEEP THE SURFACE MOIST. PRETREATMENT MAY BE NECESSARY DUE TO VARYING SITE AND CLIMATIC CONDITIONS.
5. IRRIGATION: THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. THE SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS WET AND REPEATED AS NECESSARY. IF THIS METHOD IS TO BE EMPLOYED AT A CONSTRUCTION SITE, IT IS RECOMMENDED THAT A TEMPORARY GRAVEL ROCK ENTRANCE BE CREATED TO PREVENT MUD FROM SPREADING ONTO LOCAL STREETS.
6. TILLAGE: THIS PRACTICE ROUGHENS THE SOIL AND BRINGS CLODS TO THE SURFACE. IT IS AN EMERGENCY MEASURE THAT SHOULD BE USED BEFORE WIND EROSION STARTS. PLOWING SHOULD BEGIN ON THE WINDWARD SIDE OF THE SITE USING CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTH HARROWS, OR SIMILAR PLOWS.
7. ADHESIVES: USE SPRAY-ON ADHESIVES ACCORDING TO CITY STANDARDS. THESE ADHESIVES FORM FAIRLY IMPENETRABLE SURFACES, AND SHOULD BE USED ONLY IF OTHER METHODS PROVE TO BE DIFFICULT TO WORK WITH.

PERMANENT SITE MODIFICATION MEASURES

1. PERMANENT VEGETATION: SEEDING AND SODDING SHOULD BE DONE TO PERMANENTLY STABILIZE EXPOSED AREAS AGAINST WIND EROSION. IT IS RECOMMENDED THAT EXISTING TREES AND LARGE SHRUBS BE ALLOWED TO REMAIN IN PLACE TO THE GREATEST EXTENT POSSIBLE DURING SITE GRADING PROCESSES.
2. COARSE GRAVEL OR CRUSHED STONE MAY BE PLACED OVER HIGHLY ERODIBLE SOILS.
3. TOPSOILING: THIS METHOD IS RECOMMENDED WHEN PERMANENT VEGETATION CANNOT BE ESTABLISHED ON A SITE. TOPSOILING IS A PROCESS IN WHICH LESS EROSIVE MATERIAL IS PLACED ON TOP OF HIGHLY ERODIBLE SOILS.

GENERAL SIDEWALK RAMP NOTES

1. THE STANDARD CURB-RAMP LAYOUT SHALL BE USED WHENEVER POSSIBLE. ANY DEVIATION FROM THE STANDARD CURB RAMP PLANS SHALL BE APPROVED BY THE CITY ENGINEER OR DESIGNEE ON A CASE BY CASE BASIS.
2. THE STANDARD CURB RAMP DRAWINGS SUPERSEDE ALL PREVIOUS DRAWINGS AND SHALL BE PART OF THE NEW CURB RAMP STANDARD DRAWINGS.
3. ALL ALTERNATE RAMPS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.
4. SEAL ALL JOINTS ON SIDEWALK AND RAMPS. MAXIMUM WIDTH OF EXPANSION JOINT IS 1/2"

CURB RAMP NOTES

1. A CURB RAMP IS DEFINED AS THE ENTIRE CONCRETE SURFACE WHICH INCLUDES THE RAMP & FLARED SIDES. THE MINIMUM 4' WIDE CENTER PORTION, INCLUDING THE DETECTABLE SURFACE, SHALL HAVE A SLOPED PLANE OF 8.33% (1:12) MAXIMUM, AND CROSS SLOPE, NOT TO EXCEED 2%. THE "FLARED SIDE" OF THE RAMP SHALL LIE ON A SLOPE OF 10% (1:10) MAXIMUM MEASURED ALONG THE CURB. THE CURB RAMP SHALL HAVE A SURFACE TOLERANCE OF 1/4" PER 10 FOOT STRAIGHT EDGE MAXIMUM.
2. THE RAMP CENTER LINE AND PATH OF TRAVEL SHOULD BE PARALLEL TO THE SIDEWALK WHENEVER POSSIBLE. THE FULL WIDTH OF THE RAMP SHALL LIE WITHIN THE CROSSWALK AREA. IT IS DESIRABLE THAT THE LOCATION OF THE RAMP BE AS CLOSE AS POSSIBLE TO THE CENTER OF THE CROSSWALK.
3. THE 4'-0" MIN. DISTANCE BETWEEN FLARED SIDES OF THE TWO ADJACENT CURB RAMPS MAY BE REDUCED TO 3'-0" WITH DOCUMENTATION OF HARDSHIP INDICATING LEGAL AND OR PHYSICAL CONSTRAINTS PROVIDED TO THE CITY ENGINEER.
4. EXISTING UTILITY BOXES AND COVERS SHALL BE ADJUSTED FLUSH WITH THE CURB RAMP SURFACE AND SHALL NOT STRADDLE ANY CHANGE IN PLANE OR MATERIAL. EXISTING UTILITY BOX FRAMES AND COVERS SHALL HAVE MATCHING SURFACE FINISH ON THE ENTIRE FRAME AND COVER. NEW UTILITY BOXES SHALL NOT BE PLACED WITHIN THE DETECTABLE BORDER.
5. THE SURFACE OF THE CURB RAMP AND DETECTABLE SURFACE MATERIAL SHALL BE STABLE, FIRM AND SLIP RESISTANT. THE CONCRETE CURB RAMP SURFACE SHALL BE BROOM FINISHED TRANSVERSE TO THE AXIS OF THE RAMP AND SHALL BE SLIGHTLY ROUGHER THAN THE FINISH OF THE ADJACENT SIDEWALK SURFACE.
6. A LEVEL LANDING 5'-0" DEEP, WITH A 2% MAXIMUM SLOPE IN EACH DIRECTION SHALL BE PROVIDED AT THE UPPER END OF EACH CURB RAMP TO ALLOW SAFE EGRESS FROM THE RAMP SURFACES. THE WIDTH OF THE LEVEL LANDING SHALL BE AT LEAST AS WIDE AS THE WIDTH OF THE RAMP. A LEVEL LANDING 4' DEEP SHALL BE PROVIDED AT ALL PEDESTRIAN PUSH BUTTONS AT SIGNALIZED CROSSINGS.
7. EXISTING VERTICAL UTILITY POLES OR STREET LIGHT POLES MAY BE INCORPORATED INTO THE FLARED SIDES, IF NECESSARY. THE VERTICAL OBSTRUCTION SHALL BE A MINIMUM OF 6 INCHES AWAY FROM EDGE OF THE RAMP. PEDESTRIAN CROSSWALKS PUSH BUTTON POLES, FIRE DEPARTMENT CALL BOXES AND OTHER POLES WITH ACTIVATED DEVICES, MAY NOT BE PLACED IN THE CURB-RAMP AT ANY TIME. NO NEW VERTICAL OBSTRUCTIONS MAY BE LOCATED IN THE CURB RAMP OR THE GROOVED BORDER.
8. RAMP OPENING SHALL BE THE SAME WIDTH AS THE SIDEWALK, UP TO 6'-0" WIDE
9. CURB RAMP SHALL BE CONSTRUCTED WITH CONCRETE AND BASE THICKNESS PER COLORADO CITY STANDARD DRAWINGS.
10. FOR NEW CONSTRUCTION -- ALL DETECTABLE WARNINGS ARE TO BE SET IN CONCRETE. SURFACE APPLIED DOMES REQUIRE SPECIAL WRITTEN APPROVAL BY THE CITY ENGINEER.
11. PLACE TRUNCATED DOME DETECTABLE WARNING SURFACE IN THE LOWER 2' OF THE THROAT OF RAMP ONLY. ARRANGE DOMES USING IN-LINE PATTERN ONLY AS SHOWN IN DETAIL. COLOR OF TEXTURE TO BE SAFETY YELLOW, OR AS DIRECTED BY ENGINEER.
12. SIDEWALK CURB RAMP SLOPES SHOWN RELATIVE TO TRUE LEVEL HORIZON (ZERO BUBBLE.) TOOLED JOINTS ARE REQUIRED AT ALL SIDEWALK RAMP SLOPE BREAK-LINES.

SIDEWALK NOTES

1. SIDEWALK WIDTH SHALL MATCH CITY STANDARDS OR SITE PLAN AS APPROVED.
2. SIDEWALK SLOPE SHALL BE A MAXIMUM OF 2% AND A MINIMUM OF 1/2% CROSS SLOPE.
3. WHENEVER THE WIDTH OF THE SIDEWALK IS LESS THAN 5'-0", A 5' X 5' PASSING AREA WITH A MAXIMUM 2% SLOPE AND MINIMUM 1/2% SLOPE IN ANY DIRECTION AT INTERVALS OF 200' SHALL BE INSTALLED.
4. WHENEVER CHANGING DIRECTION IN A SIDEWALK, INSTALL A 5' X 5' PASSING AREA WITH MAXIMUM 2% SLOPE AND MINIMUM 1/2% SLOPE IN ANY DIRECTION.
5. OBJECTS SUCH AS TREE BRANCHES, SIGNS, WATER FOUNTAINS, ETC. SHALL NOT PROTRUDE INTO THE SIDEWALK MORE THAN 4" AT THE HEIGHTS BETWEEN 27" AND 80".
6. SIDEWALK SHALL BE CONSTRUCTED WITH CONCRETE AND BASE THICKNESS PER COLORADO CITY STANDARD DRAWINGS.
7. ALL OBSTRUCTIONS INTO THE WALK, SUCH AS POWER POLES, HYDRANTS, SIGN POSTS, ETC. MUST HAVE AT LEAST 48" OF CLEAR TRAVEL SPACE AROUND THE OBSTRUCTION.
8. PROVIDE CONTRACTION JOINTS IN SIDEWALK AT MAXIMUM 5' SPACING. MATCH JOINTS IN CURB AND GUTTER.
9. PROVIDE EXPANSION JOINTS IN SIDEWALK AT MAXIMUM 50' SPACING. MATCH JOINTS IN CURB AND GUTTER.

AMERICANS WITH DISABILITIES ACT

1. ADA PARKING STALLS AND ADJACENT ROUTES SHALL HAVE A 2.00% MAXIMUM SURFACE SLOPE IN ANY DIRECTION.
2. THE CONTRACTOR SHALL ADHERE TO THE ABOVE SPECIFICATIONS. IN THE EVENT OF A DISCREPANCY IN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO ANY CONSTRUCTION.
3. PEDESTRIAN / ADA ROUTES SHALL MEET THE FOLLOWING SPECIFICATIONS:
   - 3.a. *ROUTES SHALL HAVE A 2.00% (1:50) MAXIMUM CROSS SLOPE.
   - 3.b. *ROUTES SHALL HAVE A 5.00% (1:20) MAXIMUM RUNNING SLOPE.
   - 3.c. *RAMPS SHALL HAVE A 8.33% (1:12) MAXIMUM RUNNING SLOPE.

WATER SYSTEM AMENDMENTS TO APWA STANDARD SPECIFICATIONS (ORD. 2017-02, PASSED 11-13-2017; AM. ORD. 2021-22, PASSED 12-13-2021)

1. ALL NEW CONSTRUCTION SHALL MEET THE MINIMUM FIRE FLOW REQUIREMENTS OF THE INTERNATIONAL FIRE CODE, LATEST EDITION.
2. NO COPPER PIPE, FITTINGS OR METER SETTER YOKES AND NO PVC PIPE AND FITTINGS SHALL BE ALLOWED FOR USE IN WATER SERVICE LINES TWO INCHES OR SMALLER.
3. 3/4 INCH AND ONE INCH DIAMETER WATER SERVICE LINES SHALL BE BLUE HIGH-DENSITY POLYETHYLENE (HDPE), 200 PSI PRESSURE RATED, IPS-ID PIPE MEETING THE REQUIREMENTS OF AWWA C901 AND ASTM D2239. 1-1/2 INCH AND TWO INCH DIAMETER WATER SERVICE LINES SHALL BE BLUE HIGH-DENSITY POLYETHYLENE (HDPE), 200 PSI PRESSURE RATED, CTS-OD TUBING MEETING THE REQUIREMENT OF AWWA C901 AND ASTM D2737. FITTINGS SHALL BE COMPRESSION TYPE WITH STAINLESS STEEL INSERTS.
4. WATER SERVICE LINES SHALL BE CONTINUOUS TO THE WATER METER WITHOUT A METER YOKE.
5. A CORP STOP IS REQUIRED ON THE SERVICE LINE AT THE WATER MAIN CONNECTION WITH A POLYETHYLENE MARKER (HDPE PIPE) PLACED BY AND EXTENDED TWO FEET ABOVE THE CORP STOP.
6. A VERTICAL DUAL CHECK VALVE IS REQUIRED ON THE SERVICE SIDE OF THE METER.
7. NO DUAL WATER METERS AND SERVICE LATERALS ARE ALLOWED ON ONE MAIN LINE CONNECTION.
8. MINIMUM 18 INCH AND 21 INCH DIAMETER METER BOXES SHALL BE USED FOR 5/8" X 3/4" AND 1" METERS, RESPECTIVELY. BOXES FOR LARGER METERS SHALL BE AS APPROVED BY THE TOWN. ALL METER BOXES SHALL HAVE A WHITE INTERIOR. RINGS AND COVERS FOR METER BOXES SHALL BE CAST IRON EQUAL TO D & L SUPPLY, MODEL L-2240 FOR 18 INCH DIAMETER METER BOXES AND MODEL L-2244 FOR 21 INCH DIAMETER.
9. FIRE HYDRANTS SHALL BE KENNEDY MODEL K81D OR APPROVED EQUAL.
10. UNLESS OTHERWISE APPROVED BY THE TOWN, LOCKING JOINT RESTRAINT DEVICES, EQUAL TO MEGALUG®, SHALL BE USED WHEREVER POURED-IN-PLACE CONCRETE THRUST BLOCKS ARE REQUIRED, AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
11. OTHER TOWN ORDINANCES AND REGULATIONS.
   - A. THE COLORADO CITY WATER SERVICE REGULATIONS SHALL APPLY, AS APPLICABLE, AND TAKE PRECEDENCE OVER THESE STANDARD SPECIFICATIONS.
   - B. THE COLORADO CITY ORDINANCES FOR THE CONTROL OF BACK-FLOW AND CROSS CONNECTIONS SHALL APPLY, AS APPLICABLE, AND TAKE PRECEDENCE OVER THESE STANDARD SPECIFICATIONS.
   - C. ARIZONA STATE REGULATIONS - TITLE 18, CHAPTER 4, ARTICLES 2, 3 AND 5 OF THE ARIZONA ADMINISTRATIVE CODE SHALL APPLY, AS APPLICABLE, TO THE DESIGN OF MUNICIPAL WATER SYSTEMS.
   - D. INTERNATIONAL FIRE CODE - THE LATEST EDITION OF THE INTERNATIONAL FIRE CODE, APPENDICES B (FIRE FLOW REQUIREMENTS), C (FIRE HYDRANT LOCATIONS), AND D (FIRE APPARATUS ACCESS ROADS) SHALL APPLY, AS APPLICABLE, TO THE DESIGN OF MUNICIPAL WATER SYSTEMS.

WASTE WATER SYSTEM AMENDMENTS TO APWA STANDARD SPECIFICATIONS (ORD. 2017-02, PASSED 11-13-2017; AM. ORD. 2021-22, PASSED 12-13-2021)

1. MAIN SANITARY AND STORM SEWER LINE TESTING AND ACCEPTANCE, SHALL REQUIRE VIDEO INSPECTION.
2. IF APWA STANDARD PLAN AND SPECIFICATIONS CONFLICT WITH THIS DOCUMENT, THIS DOCUMENT SHALL TAKE PRECEDENCE.
3. ARIZONA STATE REGULATIONS - TITLE 18, CHAPTER 9, ARTICLE 3, PART E OF ARIZONA ADMINISTRATIVE CODE SHALL APPLY, AS APPLICABLE, TO THE DESIGN OF MUNICIPAL WASTEWATER SYSTEMS.
4. WHEN CONNECTION TO A SANITARY SEWER SYSTEM IS NOT AVAILABLE (WITHIN 300 FEET OF PROPERTY LINE), AND WITH CONCURRENCE OF THE TOWN ENGINEER, A SEPTIC DISPOSAL SYSTEM OR OTHER DISPOSAL METHOD MAY BE PERMITTED PROVIDED THAT THE SYSTEM IS APPROVED BY THE COUNTY ENVIRONMENTAL HEALTH SERVICES DEPARTMENT CERTIFYING THAT FIELD INVESTIGATION HAS DETERMINED THAT GROUND SLOPES AND SOIL CONDITIONS WILL ALLOW FOR SATISFACTORY DISPOSAL BY THIS METHOD WITH THE LOT ARRANGEMENT AND SIZE AS DEPICTED ON THE SITE PLAN.
5. MINIMUM LOT SIZE MAY NEED TO BE INCREASED DUE TO REQUIREMENTS OF THE COUNTY ENVIRONMENTAL HEALTH DEPARTMENT OR ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY, RELATING TO WATER AND SANITARY SEWAGE DISPOSAL SYSTEMS.
6. IN ADDITION, A SEWER CONNECTION SYSTEM (DRY LINES) SHALL BE REQUIRED FOR FUTURE CONNECTION TO A SANITARY SEWER SYSTEM. [SEE TOWN CODE, § 50.34(C).]
7. WITHIN ONE YEAR AFTER A PUBLIC SEWER BECOMES AVAILABLE WITHIN 300 FEET OF ANY PROPERTY SERVED BY A PRIVATE SEWAGE DISPOSAL SYSTEM, A DIRECT CONNECTION SHALL BE MADE TO THE PUBLIC SEWER IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER, AND ANY SEPTIC TANKS, CESSPOOLS AND SIMILAR PRIVATE SEWAGE FACILITIES SHALL BE ABANDONED AND FILLED WITH SUITABLE MATERIAL.

Contact Arizona 811 at least two full working days before you begin excavation
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NO.	DESCRIPTION	BY	APR.	DATE

GENERAL NOTES

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #:	FF 22301.00
DATE:	DEC. 2023
DESIGN BY:	RBIII
CHECKED BY:	JGJ
SHEET	GN01
2 OF 9	

PLOT: 2023-12-06 03:06 PM
PATH: L:\UTAH\PROJECTS\ACTIVE 2022\FX22301.00 - HAMMON SUBDIVISION\700 - CAD\SHEET_FILES\22301_SHEETS.DWG

ABBREVIATIONS

AC	ACRE
ACE	ARMY CORPS OF ENGINEERS
AGGR	AGGREGATE
ALT.	ALTERNATE
APPR.	APPROXIMATE
AR MH	AIR RELEASE MANHOLE
ARV	AIR RELEASE VALVE
ASSY.	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AVE	AVENUE
BFV	BUTTERFLY VALVE
BH	BORE HOLE
BITUM.	BITUMINOUS
BK	BACK
B.O.	BY OTHERS
BOA	BEGINNING OF ALIGNMENT
BOP	BEGINNING OF PROJECT
BSW	BACK OF SIDEWALK
BVC	BEGIN VERTICAL CURVE
BW	BOTTOM OF WALL
C&G	CURB AND GUTTER
CB	CATCH BASIN
C-C	CENTER TO CENTER
CE/L	CONSTRUCTION EASEMENT LINE
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIP	CAST IRON PIPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COMM.	COMMUNICATION
CONC.	CONCRETE
CONST.	CONSTRUCTION
CU	COPPER
CY/CU YD	CUBIC YARD
DBL	DOUBLE
DI	DUCTILE IRON
DIA/D	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DRWY	DRIVEWAY
DWG	DRAWING
E.	EAST
EA.	EACH
EG	EXISTING GRADE
EP/EOP	EDGE OF PAVEMENT
ELEC.	ELECTRICAL
EL/ELEV.	ELEVATION
EOA	END OF ALIGNMENT
ESMT	EASEMENT
EVC	END VERTICAL CURVE
EX/EXIST.	EXISTING
EXT.	EXTENSION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FES	FLARED END SECTION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIRM	FLOOD INSURANCE RATE MAP
FL	FLOWLINE
FM	FORCE MAIN
FO	FIBER OPTIC
FS	FINISHED SURFACE
FT	FOOT/FEET
GALV.	GALVANIZED
GB	GRADE BREAK
GR	GRATE
GV	GATE VALVE
HDPE	HIGH-DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HOR.	HORIZONTAL
HP	HIGH POINT
HYD.	HYDRANT
IN.	INCH
I.D.	INSIDE DIAMETER
INV.	INVERT
IRR.	IRRIGATION
INS.	INSERT
LEN.	LENGTH
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MFG.	MANUFACTURER
MH	MANHOLE
MIN.	MINIMUM
MJ	MECHANICAL JOINT
N.	NORTH
NO.	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OHE	OVERHEAD ELECTRICAL
OSHA	OCCUPATION SAFETY AND HEALTH ADMINISTRATION
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POLY	POLYETHYLENE
POT.	POTABLE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PUE	PUBLIC UTILITY EASEMENT
RAD/R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
RR	RAILROAD
RT	RIGHT
S.	SOUTH
SAN	SANITARY
SCH.	SCHEDULE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF/SQ FT	SQUARE FEET
SHT	SHEET
SIM.	SIMILAR
SS	SANITARY SEWER
ST	STREET
STA	STATION
STD	STANDARD
SW	SIDEWALK
SY/SQ YD	SQUARE YARD
TA	TOP OF ASPHALT
TBC	TOP BACK OF CURB
TBR	TO BE REMOVED
TC	TOP OF CONCRETE
TOP	TOP OF PIPE
TW	TOP OF WALL
TYP.	TYPICAL
VAR.	VARIES
VERT.	VERTICAL
WAT.	WATER
WL	WATER LINE

LEGEND

EXISTING / PROPOSED

- MAJOR CONTOUR (4250)
- MINOR CONTOUR (4248)
- CURB AND GUTTER
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- STREET CENTERLINE
- PROPERTY LINE
- LOT LINE
- SECTION LINE
- SECTION CORNER
- RIGHT-OF-WAY LINE
- EASEMENT LINE
- FENCE
- SANITARY SEWER MAIN
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEAN OUT
- CULINARY WATER LINE
- PRESSURIZED IRRIGATION
- GRAVITY IRRIGATION
- TEE
- GATE VALVE
- BEND (ANGLE NOTED)
- STUB / CAP
- HYDRANT
- WATER METER
- WATER MANHOLE
- SECONDARY WATER SERVICE/VALVE
- GRAVITY IRRIGATION MANHOLE
- GRAVITY IRRIGATION BOX
- STORM DRAIN PIPE
- CULVERT WITH FLARED END SECTION
- STORM DRAIN MANHOLE
- STORM DRAIN COMBO BOX
- STORM DRAIN CURB INLET
- JUNCTION STRUCTURE
- BURIED ELECTRIC LINE
- OVERHEAD ELECTRIC LINE
- ABANDONED COMM. LINE
- BURIED FIBER OPTIC LINE
- ABANDONED GAS LINE
- GAS LINE
- GAS VALVE / GAS METER
- BURIED TELEPHONE
- POWER POLE
- GUY WIRE ANCHOR
- ELECTRICAL EQUIPMENT
- ELECTRICAL TRANSFORMER
- FIBER OPTIC PEDESTAL

LEGEND *(cont.)*

EXISTING / PROPOSED

- GRADE TO DRAIN
- EXTENTS OF GRADING
- TELEPHONE PEDESTAL
- HANDHOLE BOX
- FIRE DEPARTMENT CONNECTION (FDC)
- FIRE SPRINKLER RISER (FSR)
- STREET LIGHT
- SIGN (SINGLE POLE, 2 OR MORE POLES)
- MAILBOX
- ASPHALT PAVEMENT
- CONCRETE FLATWORK
- UNTREATED BASE COURSE
- LANDSCAPE
- RIP-RAP
- SPOT ELEVATION (XXXX.XX TBC)
- SECTION / DETAIL CALL-OUT SYMBOL (SECTION / DETAIL NUMBER; 4 DT1; SHEET WHERE DRAWN)
- EXISTING SHRUB
- EXISTING TREE
- OVERHEAD COMMUNICATIONS LINE
- BURIED COMMUNICATIONS LINE
- OVERHEAD CABLE TV
- BURIED CABLE TV

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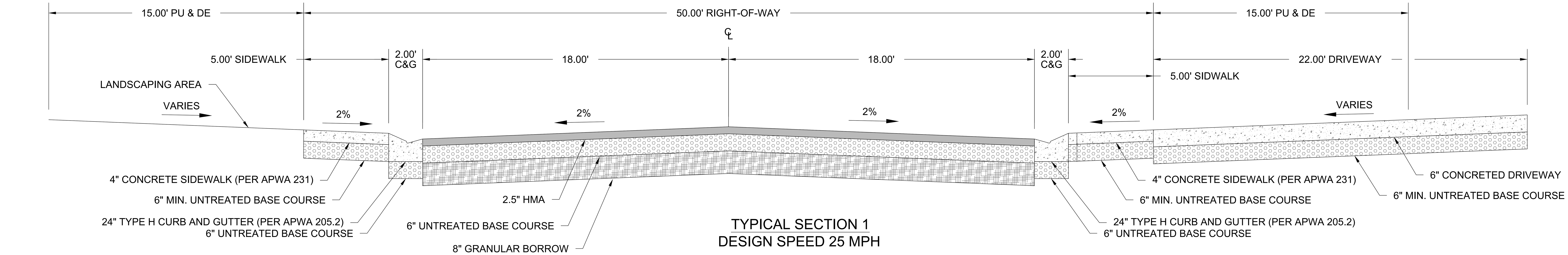
NO.	DESCRIPTION	BY	APP.	DATE
REVISION				

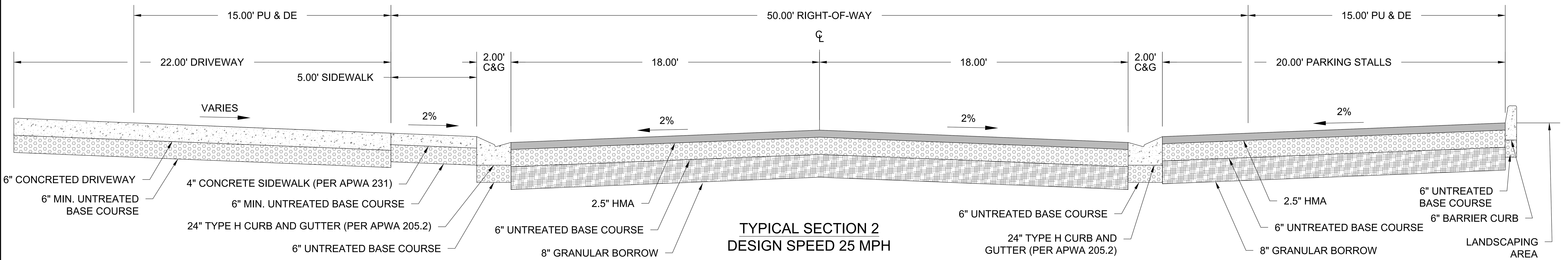
LEGEND & ABBREVIATIONS

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

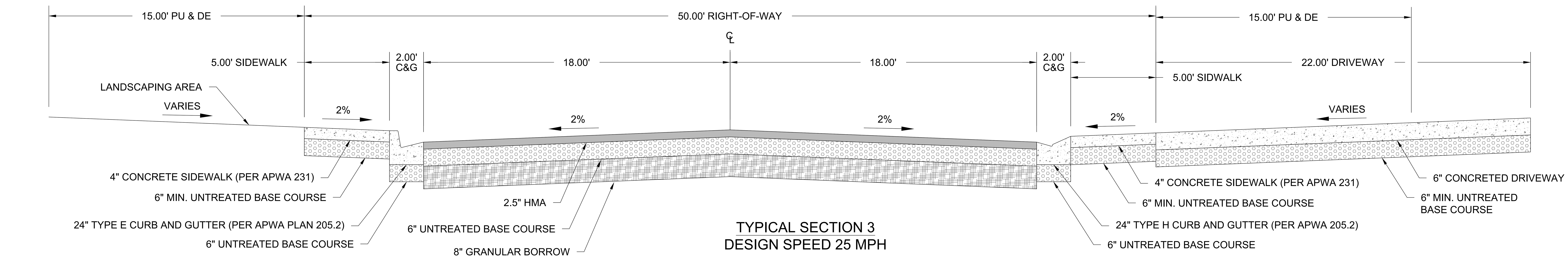
PROJ. #: FF 22301.00
DATE: DEC. 2023
DESIGN BY: RBIII
CHECKED BY: JGJ
SHEET GN02
3 OF 9


15.00' PU & DE
50.00' RIGHT-OF-WAY
15.00' PU & DE
CL
5.00' SIDEWALK
2.00' C&G
18.00'
18.00'
2.00' C&G
22.00' DRIVEWAY
5.00' SIDWALK
LANDSCAPING AREA
VARIES
2%
2%
2%
2%
VARIES
4" CONCRETE SIDEWALK (PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE H CURB AND GUTTER (PER APWA 205.2)
6" UNTREATED BASE COURSE
2.5" HMA
6" UNTREATED BASE COURSE
8" GRANULAR BORROW
4" CONCRETE SIDEWALK (PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE H CURB AND GUTTER (PER APWA 205.2)
6" UNTREATED BASE COURSE
6" CONCRETED DRIVEWAY
6" MIN. UNTREATED BASE COURSE

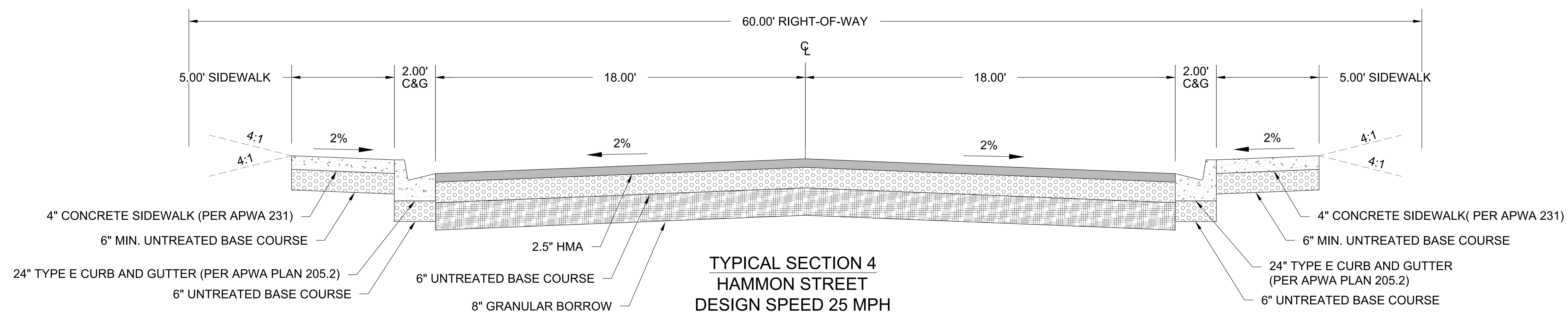
TYPICAL SECTION 1
DESIGN SPEED 25 MPH


15.00' PU & DE
50.00' RIGHT-OF-WAY
15.00' PU & DE
CL
22.00' DRIVEWAY
5.00' SIDEWALK
2.00' C&G
18.00'
18.00'
2.00' C&G
20.00' PARKING STALLS
VARIES
2%
2%
2%
2%
6" CONCRETED DRIVEWAY
6" MIN. UNTREATED BASE COURSE
4" CONCRETE SIDEWALK (PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE H CURB AND GUTTER (PER APWA 205.2)
6" UNTREATED BASE COURSE
2.5" HMA
6" UNTREATED BASE COURSE
8" GRANULAR BORROW
6" UNTREATED BASE COURSE
24" TYPE H CURB AND GUTTER (PER APWA 205.2)
2.5" HMA
6" UNTREATED BASE COURSE
8" GRANULAR BORROW
6" UNTREATED BASE COURSE
6" BARRIER CURB
LANDSCAPING AREA

TYPICAL SECTION 2
DESIGN SPEED 25 MPH


15.00' PU & DE
50.00' RIGHT-OF-WAY
15.00' PU & DE
CL
5.00' SIDEWALK
2.00' C&G
18.00'
18.00'
2.00' C&G
22.00' DRIVEWAY
5.00' SIDWALK
LANDSCAPING AREA
VARIES
2%
2%
2%
2%
VARIES
4" CONCRETE SIDEWALK (PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE E CURB AND GUTTER (PER APWA PLAN 205.2)
6" UNTREATED BASE COURSE
2.5" HMA
6" UNTREATED BASE COURSE
8" GRANULAR BORROW
4" CONCRETE SIDEWALK (PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE H CURB AND GUTTER (PER APWA 205.2)
6" UNTREATED BASE COURSE
6" CONCRETED DRIVEWAY
6" MIN. UNTREATED BASE COURSE

TYPICAL SECTION 3
DESIGN SPEED 25 MPH


60.00' RIGHT-OF-WAY
CL
5.00' SIDEWALK
2.00' C&G
18.00'
18.00'
2.00' C&G
5.00' SIDEWALK
4:1
4:1
2%
2%
2%
2%
4:1
4:1
4" CONCRETE SIDEWALK (PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE E CURB AND GUTTER (PER APWA PLAN 205.2)
6" UNTREATED BASE COURSE
2.5" HMA
6" UNTREATED BASE COURSE
8" GRANULAR BORROW
4" CONCRETE SIDEWALK(PER APWA 231)
6" MIN. UNTREATED BASE COURSE
24" TYPE E CURB AND GUTTER (PER APWA PLAN 205.2)
6" UNTREATED BASE COURSE

TYPICAL SECTION 4
HAMMON STREET
DESIGN SPEED 25 MPH

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NO.	DESCRIPTION	BY	APR.	DATE

TYPICAL SECTIONS

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #: FF 22301.00
DATE: DEC. 2023
DESIGN BY: RBIII
CHECKED BY: JGJ
SHEET TS01
4 OF 9

PLOT: 2023-12-06 03:06 PM
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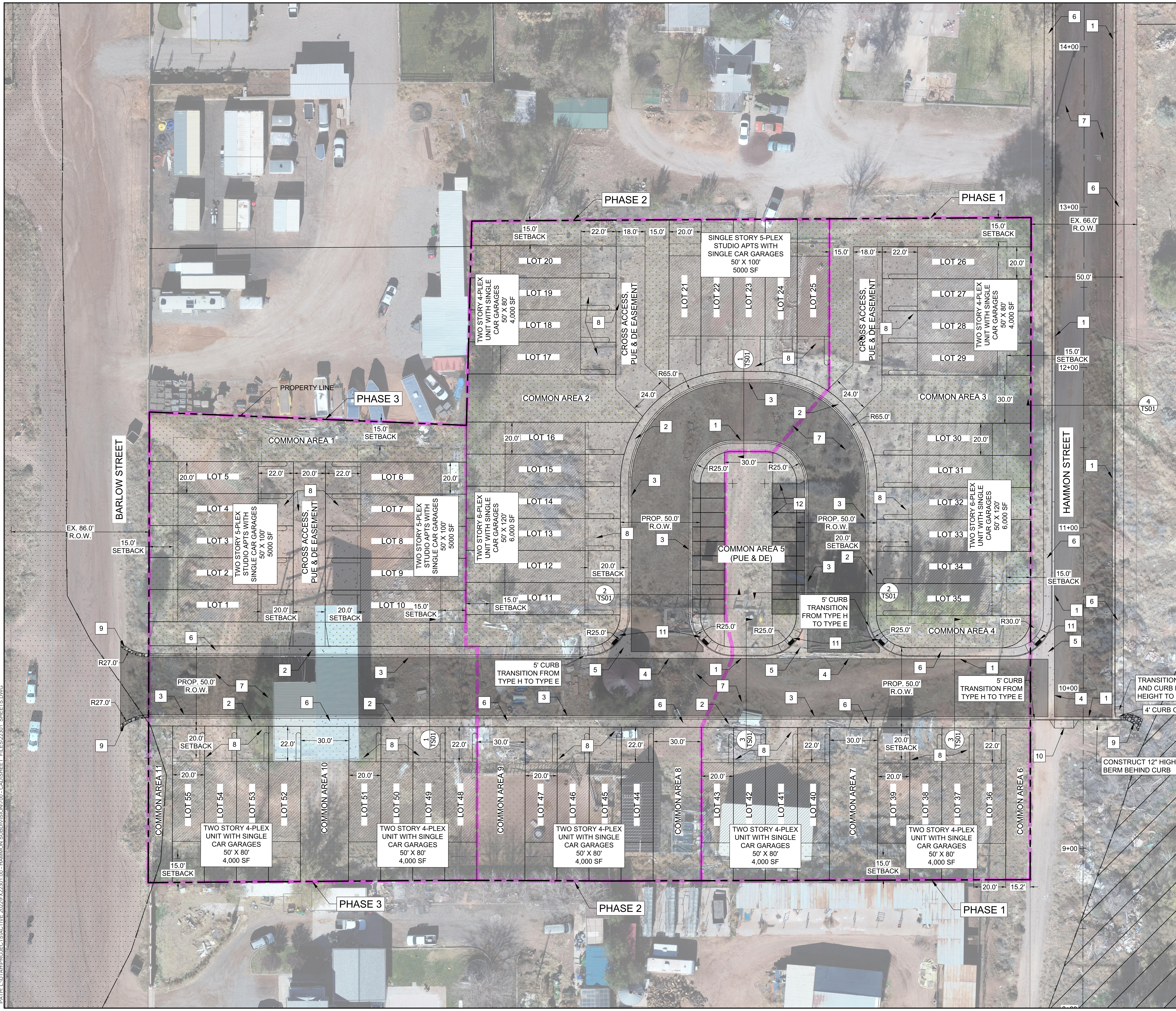

SCALE: 1" = 30'

(SCALE ONLY VALID FOR 24" x 36" PAPER)

LEGEND:

- ASPHALT PAVEMENT (SEE TS SHEET) AREA: 34,199 SF (ONSITE ONLY)
- CONCRETE SIDEWALK, CURB & GUTTER, APRON, OR DRIVEWAY APPROACH AREA: 37,253 SF (ONSITE ONLY)
- OPEN SPACE - LANDSCAPED PER CITY ORDINANCE AREA: 70,627 SF (ONSITE ONLY)
- PHASE LINE

SITE CONSTRUCTION KEYNOTES:

PER APWA AND COLORADO CITY STANDARDS

1. 24" TYPE E CURB AND GUTTER W/ BASE (PER APWA PLAN 205.2)
2. CONCRETE MOUNTABLE CURB DRIVE APPROACH (PER APWA PLAN 216)
3. 24" TYPE H CURB AND GUTTER W/ BASE (PER APWA PLAN 205.2)
4. 4' CONCRETE WATERWAY W/ BASE (PER APWA PLAN 211)
5. CONCRETE WATERWAY TRANSITION (PER APWA PLAN 213)
6. 4" CONCRETE SIDEWALK W/ BASE (PER APWA PLAN 231)
7. 2.5" HOT MIX ASPHALT ROADWAY
8. 4" THICK CONCRETE DRIVEWAY W/ BASE
9. RIP-RAP LINED DITCH, D50=12", 24" THICK OVER GEOTEXTILE
10. CONCRETE FLARE DRIVE APPROACH (PER APWA PLAN 221.1)
11. CORNER CURB CUT ASSEMBLY (PER APWA PLAN 235.1, 235.2, 235.3)
12. 6-INCH BARRIER CURB (SEE DETAIL SHEETS)

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SITE PLAN

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #: FF 22301.00
DATE: DEC. 2023
DESIGN BY: RBIII
CHECKED BY: JGJ
SHEET SP01

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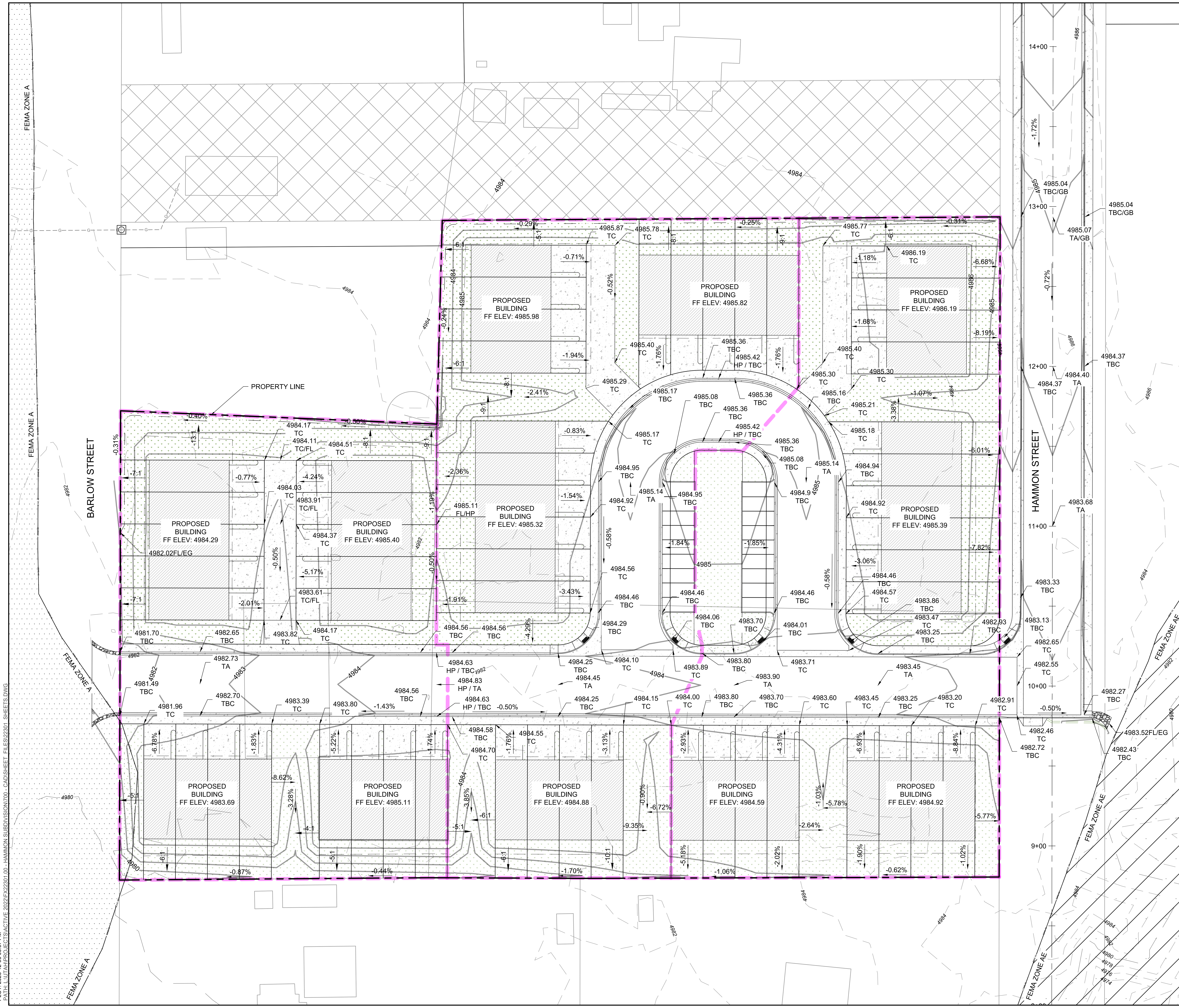

0 30
15 60

SCALE: 1" = 30'

(SCALE ONLY VALID FOR 24" x 36" PAPER)

N

LEGEND:

- ASPHALT PAVEMENT (SEE TS SHEET)
- CONCRETE SIDEWALK, CURB & GUTTER, APRON, OR DRIVEWAY APPROACH
- OPEN SPACE - LANDSCAPED PER CITY ORDINANCE
- PHASE LINE

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GRADING PLAN

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #:	FF 22301.00
DATE:	DEC. 2023
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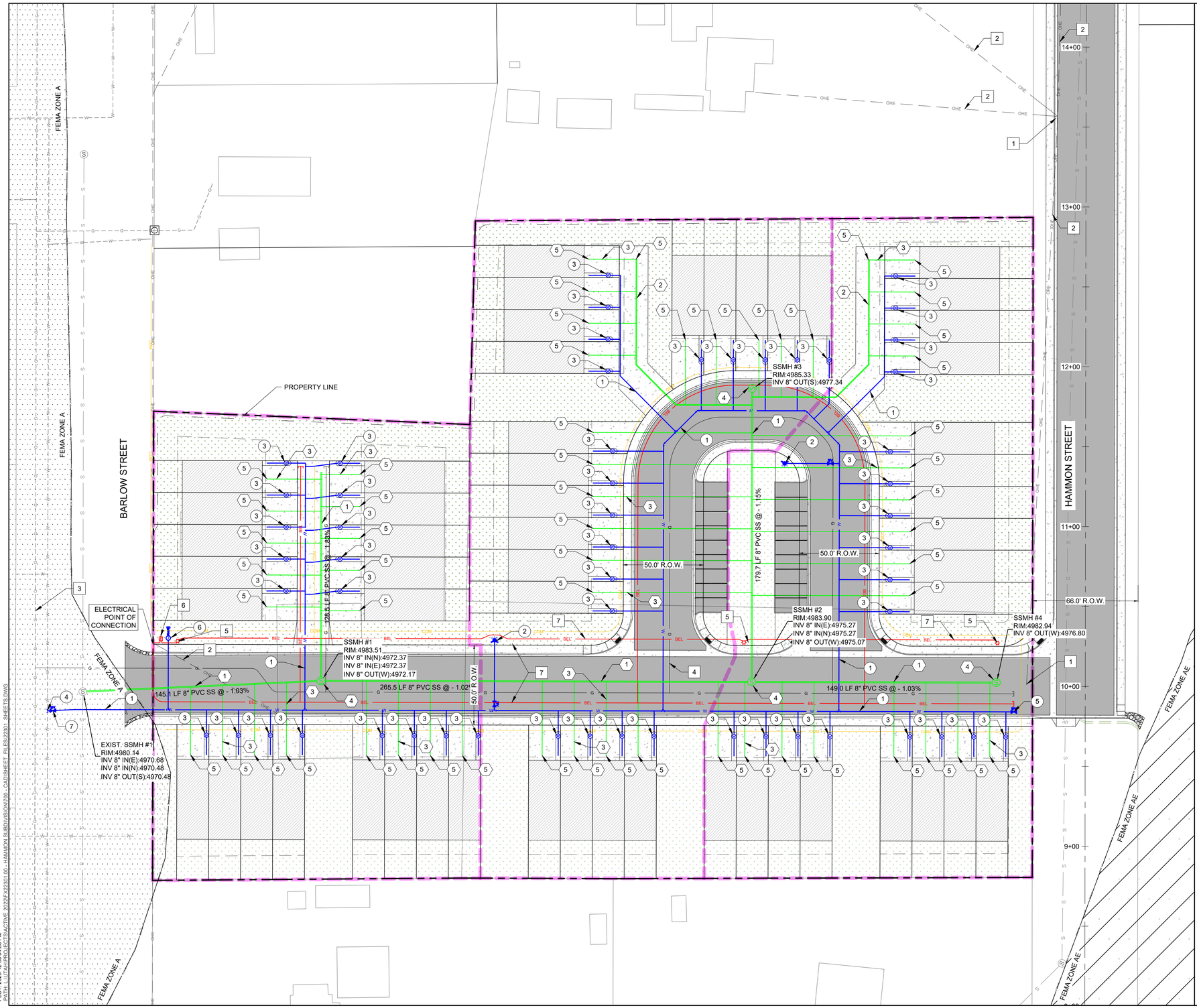

0 30
15 60

SCALE: 1" = 30'

(SCALE ONLY VALID FOR 24" x 36" PAPER)

N

LEGEND:

- ASPHALT PAVEMENT (SEE TS SHEET)
- CONCRETE SIDEWALK, CURB & GUTTER, APRON, OR DRIVEWAY APPROACH
- OPEN SPACE - LANDSCAPED PER CITY ORDINANCE
- PHASE LINE

SEWER KEYNOTES:

PER APWA AND COLORADO CITY STANDARDS

1. 8" SDR-35 PVC SEWER MAIN (PER APWA PLAN 381 & 382)
2. 6" SDR-35 PVC SEWER LATERAL (PER APWA PLAN 431)
3. 4" SDR-35 PVC SEWER LATERAL (PER APWA PLAN 431)
4. 48" DIAMETER SANITARY SEWER MANHOLE WITH 30" FRAME, COVER AND COLLAR. (PER APWA PLAN 402, 411 & 413)
5. 4" SEWER CLEANOUT (SEE DETAIL SHEETS)
6. ADJUST MANHOLE FRAME AND LID TO FINISHED GRADE REPLACE CONCRETE COLLAR AS NEEDED (SEE APWA PLAN 360.1)

WATER KEYNOTES:

PER APWA AND COLORADO CITY STANDARDS

1. 8" C900 PVC WATER MAIN (PER APWA PLAN 381 & 382)
2. 6" FIRE HYDRANT ASSEMBLY WITH 6" GATE VALVE (PER APWA PLAN 511, KENNEDY MODEL K81D OR APPROVED EQUAL)
3. 3/4" HDPE CULINARY WATER SERVICE WITH METER (PER APWA PLAN 521 & 551, MODIFIED PER CITY STANDARDS)
4. 8" TAPPING SLEEVE AND 8" GATE VALVE AT CONNECTION TO EXISTING MAIN
5. 4" WASHOUT VALVE AT END OF MAIN (PER APWA PLAN 571)
6. IRRIGATION POINT OF CONNECTION AND BACKFLOW PREVENTOR
7. 8" GATE VALVE WITH CONCRETE COLLAR (SEE DETAIL SHEET)

UTILITY KEYNOTES:

PER APWA, COLORADO CITY, AND UTILITY PROVIDER STANDARDS

1. EXISTING UTILITY POLE TO BE RELOCATED BY GARKANE ENERGY, COORDINATE WORK
2. EXISTING OVERHEAD POWER TO BE RELOCATED BY GARKANE ENERGY, COORDINATE WORK
3. EXISTING NATURAL GAS MAIN, COORDINATE WITH GAS PROVIDER
4. PROPOSED NATURAL GAS MAIN
5. INSTALL NEW STREETLIGHT PER CITY STANDARDS
6. INSTALL STREETLIGHT SERVICE PEDESTAL, COORD. WITH GARKANE ENERGY
7. INSTALL 1-1/2" PVC STREETLIGHT CONDUIT AND CONDUCTORS PER CITY STANDARDS

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UTILITY PLAN

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #: FF 22301.00
DATE: DEC. 2023
DESIGN BY: RBIII
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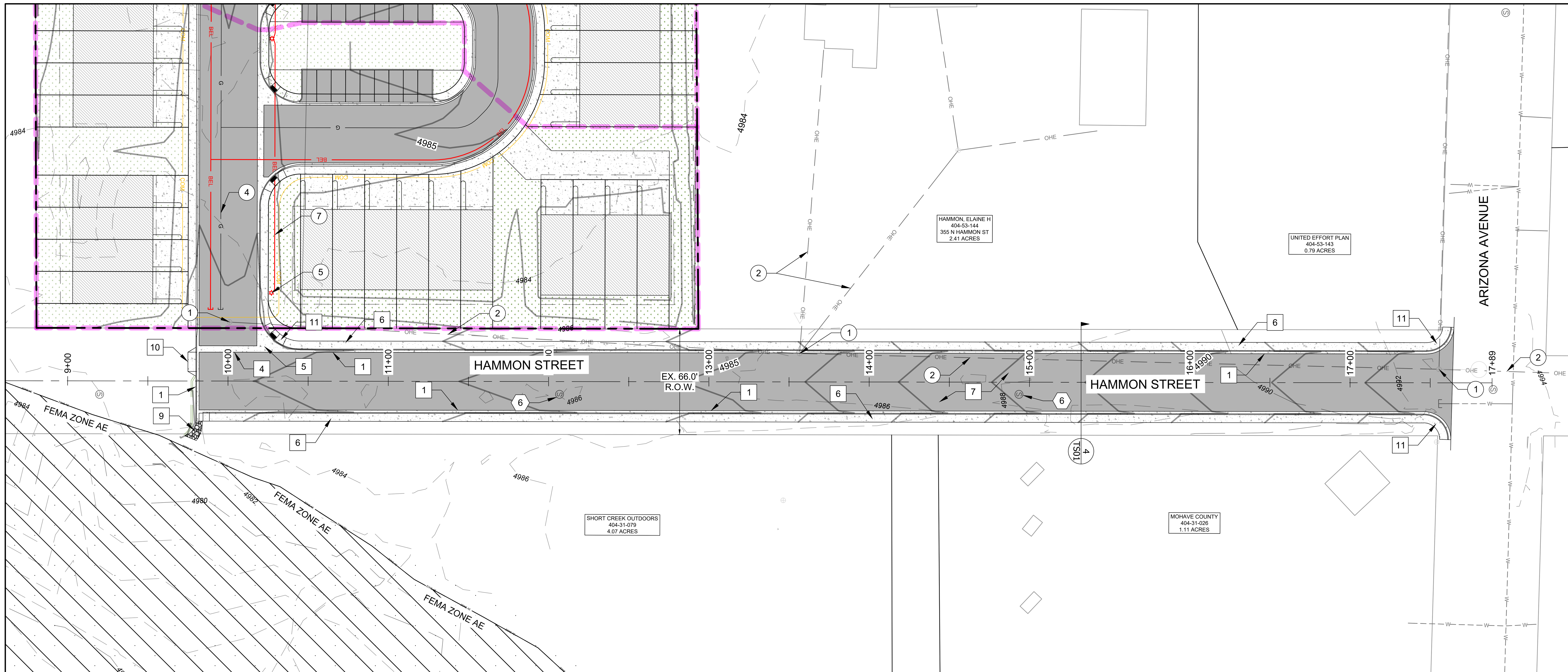
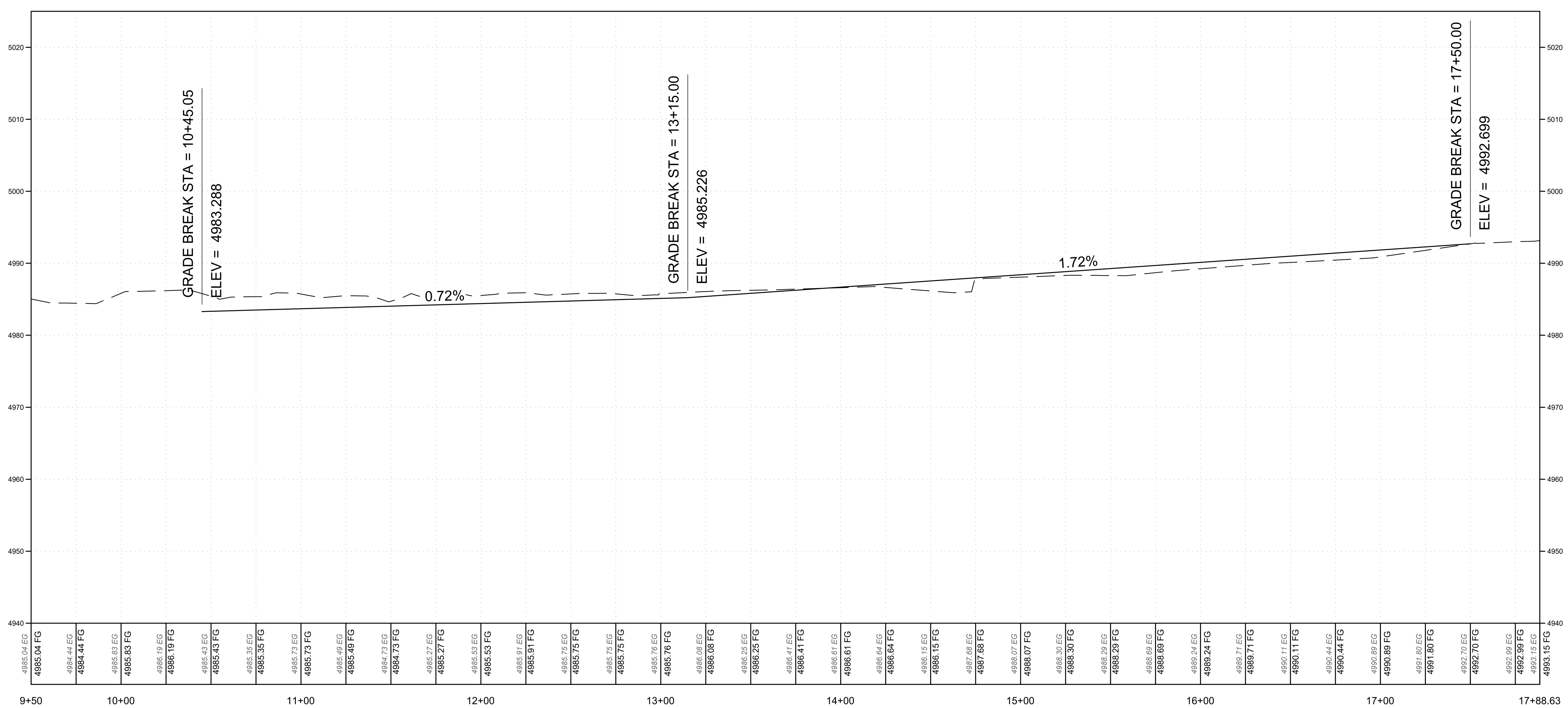
SHEET UP01
7 OF 9





SCALE: 1" = 40'

(SCALE ONLY VALID FOR 24" x 36" PAPER)

LEGEND:

- ASPHALT PAVEMENT (SEE DETAIL SHEETS)
- CONCRETE SIDEWALK, CURB & GUTTER, APRON, OR DRIVEWAY APPROACH
- OPEN SPACE - LANDSCAPED PER CITY ORDINANCE
- PHASE LINE

SITE CONSTRUCTION KEYNOTES:

PER APWA AND COLORADO CITY STANDARDS

1. 24" TYPE E CURB AND GUTTER W/ BASE (PER APWA PLAN 205.2)
2. CONCRETE MOUNTABLE CURB DRIVE APPROACH (PER APWA PLAN 216)
3. 24" TYPE H CURB AND GUTTER W/ BASE (PER APWA PLAN 205.2)
4. 4' CONCRETE WATERWAY W/ BASE (PER APWA PLAN 211)
5. CONCRETE WATERWAY TRANSITION (PER APWA PLAN 213)
6. 4" CONCRETE SIDEWALK W/ BASE (PER APWA PLAN 231)
7. 2.5" HOT MIX ASPHALT ROADWAY
8. 4" THICK CONCRETE DRIVEWAY W/ BASE
9. RIP-RAP LINED DITCH, D50=12", 24" THICK OVER GEOTEXTILE
10. CONCRETE FLARE DRIVE APPROACH (PER APWA PLAN 221.1)
11. CORNER CURB CUT ASSEMBLY (PER APWA PLAN 235.1, 235.2, 235.3)
12. CONCRETE TYPE B FLARE DRIVE APPROACH (PER APWA PLAN 221.2)
13. 6-INCH BARRIER CURB (SEE DETAIL SHEETS)

SEWER KEYNOTES:

PER APWA AND COLORADO CITY STANDARDS

6. ADJUST MANHOLE FRAME AND LID TO FINISHED GRADE REPLACE CONCRETE COLLAR AS NEEDED (SEE APWA PLAN 360.1)

UTILITY KEYNOTES:

PER APWA, COLORADO CITY, AND UTILITY PROVIDER STANDARDS

1. EXISTING UTILITY POLE TO BE RELOCATED BY GARKANE ENERGY, COORDINATE WORK
2. EXISTING OVERHEAD POWER TO BE RELOCATED BY GARKANE ENERGY, COORDINATE WORK
3. EXISTING NATURAL GAS MAIN, COORDINATE WITH GAS PROVIDER
4. PROPOSED NATURAL GAS MAIN
5. INSTALL NEW STREETLIGHT PER CITY STANDARDS
6. INSTALL STREETLIGHT SERVICE PEDESTAL, COORD. WITH GARKANE ENERGY
7. INSTALL 1-1/2" PVC STREETLIGHT CONDUIT AND CONDUCTORS PER CITY STANDARDS

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PLAN & PROFILE

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

PROJ. #:	FF 22301.00
DATE:	DEC. 2023
DESIGN BY:	RBIII
CHECKED BY:	JGJ
SHEET	PP01
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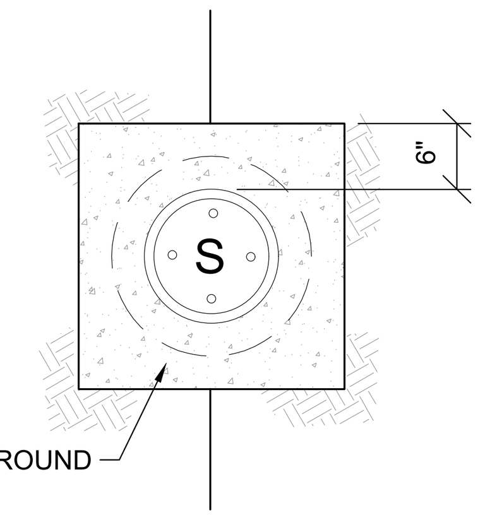
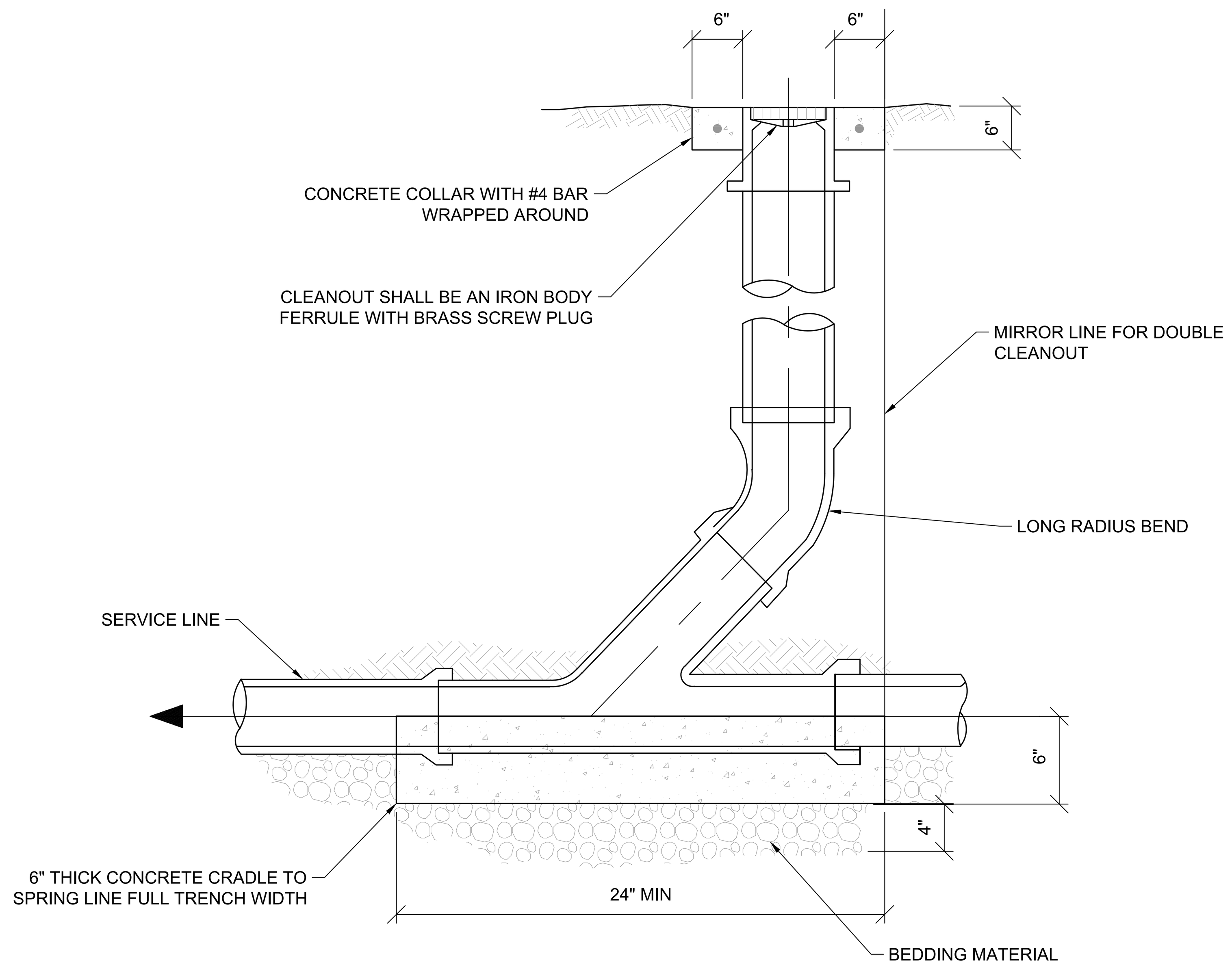
NOTES:

1. WHERE CLEANOUT IS INSTALLED IN SODDED AREAS DEPRESS CONCRETE COLLAR 2" BELOW FINISHED GRADE
2. CLEANOUT RISERS TO BE SAME DIAMETER AS SERVICE LINE (TYP)

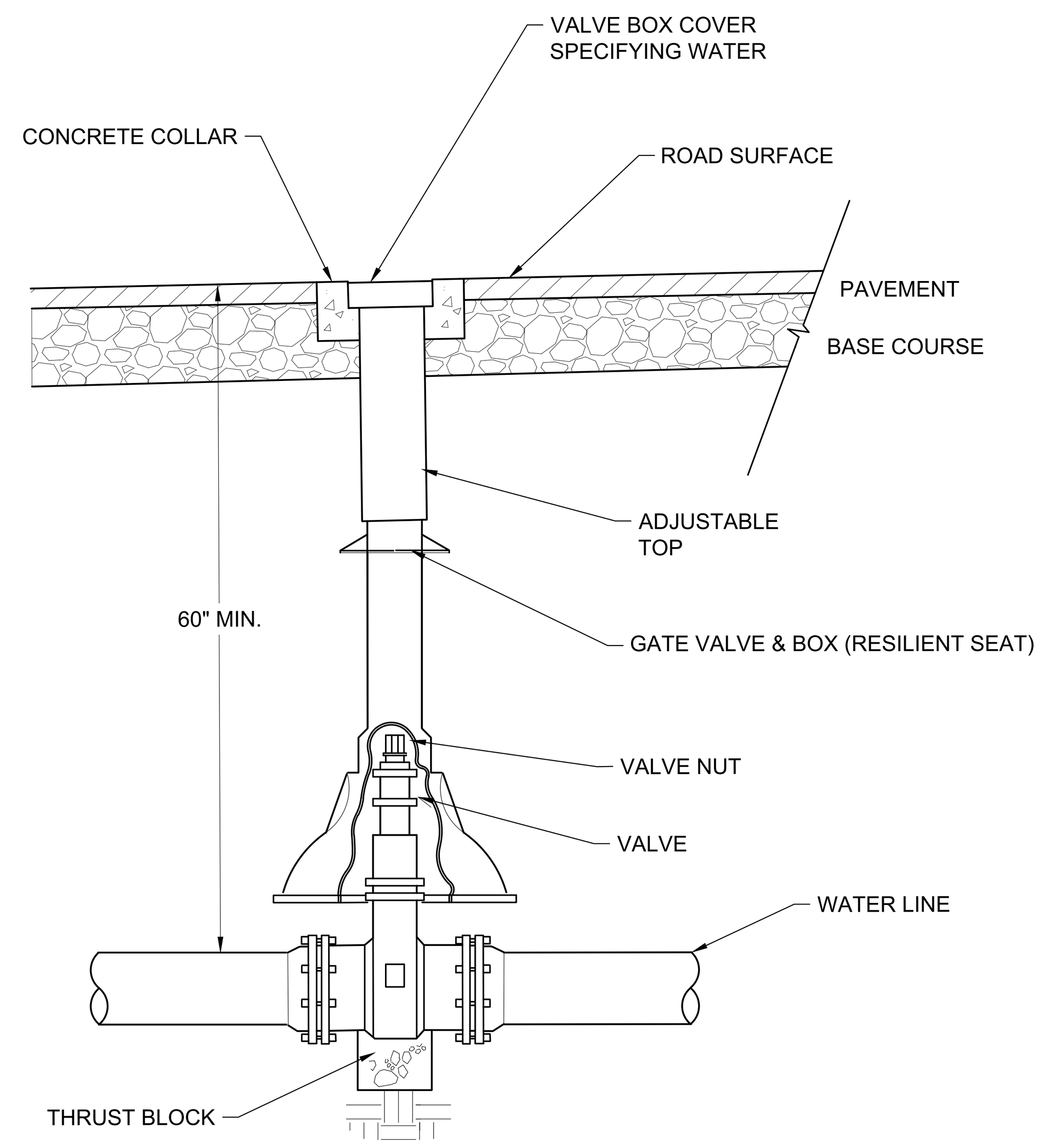


PLAN VIEW

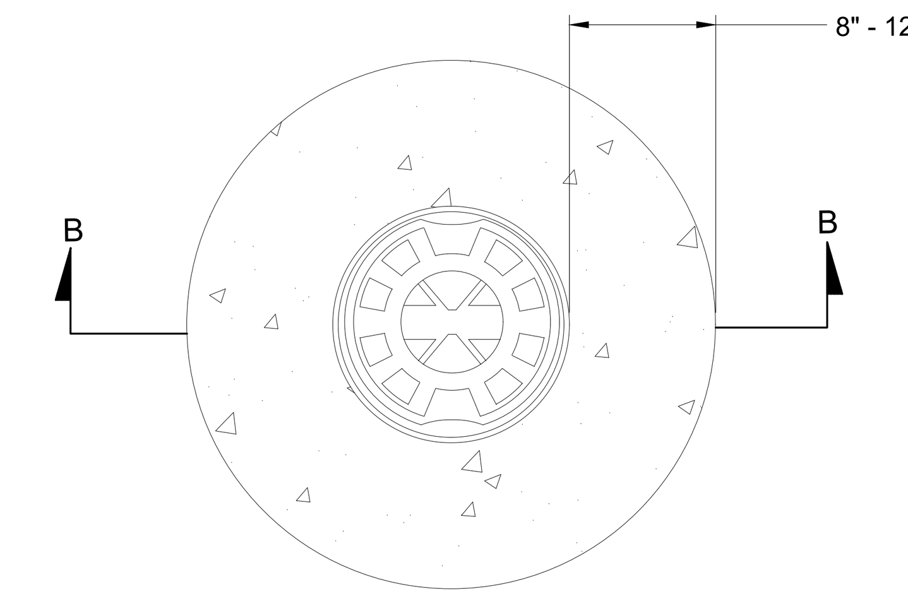

6"
6"
6"
CONCRETE COLLAR WITH #4 BAR WRAPPED AROUND
CLEANOUT SHALL BE AN IRON BODY FERRULE WITH BRASS SCREW PLUG
MIRROR LINE FOR DOUBLE CLEANOUT
LONG RADIUS BEND
SERVICE LINE
6"
4"
6" THICK CONCRETE CRADLE TO SPRING LINE FULL TRENCH WIDTH
24" MIN
BEDDING MATERIAL

ELEVATION

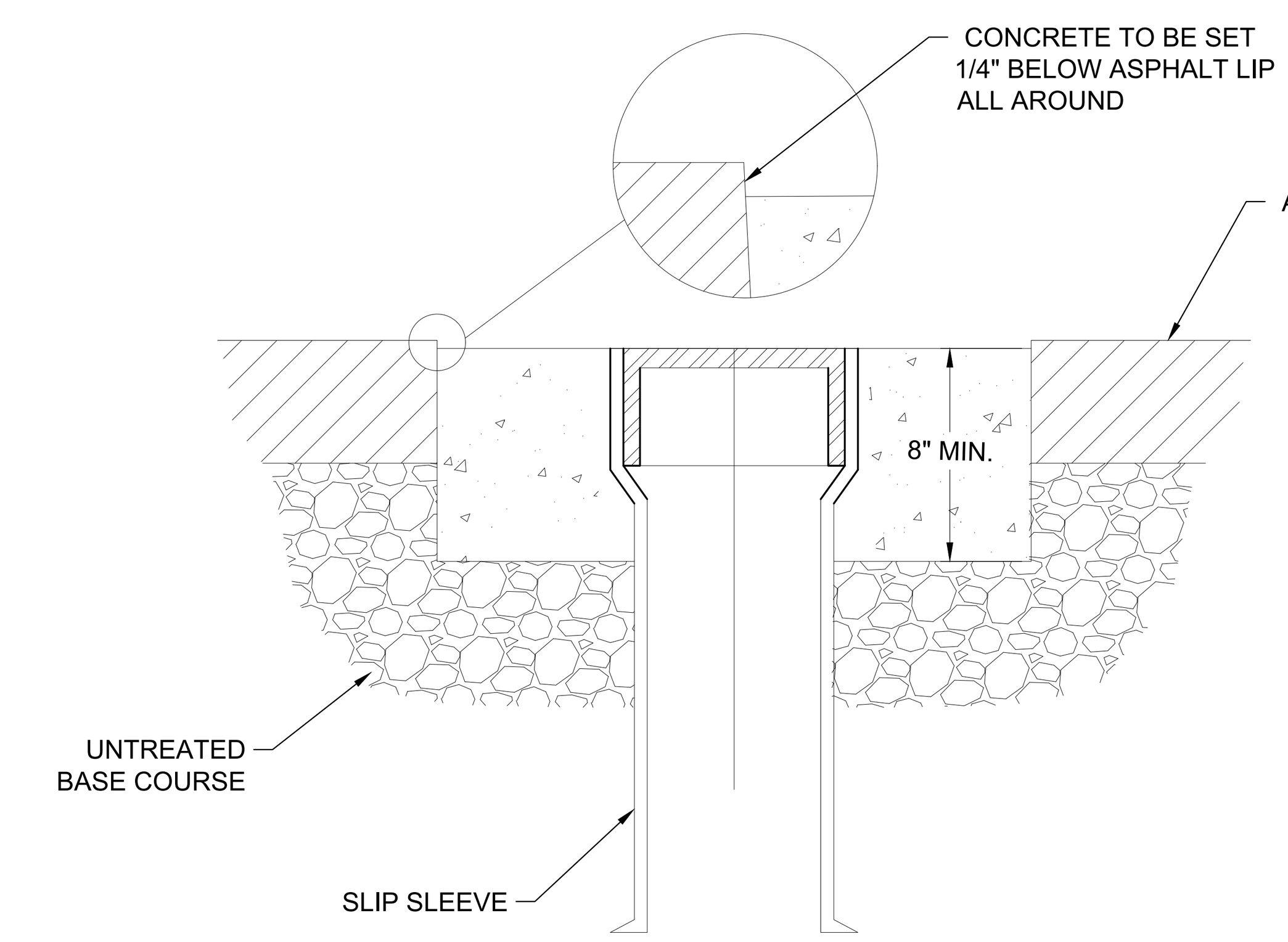
1 STANDARD CLEANOUT DETAIL
N.T.S.



2 GATE VALVE DETAIL
N.T.S.



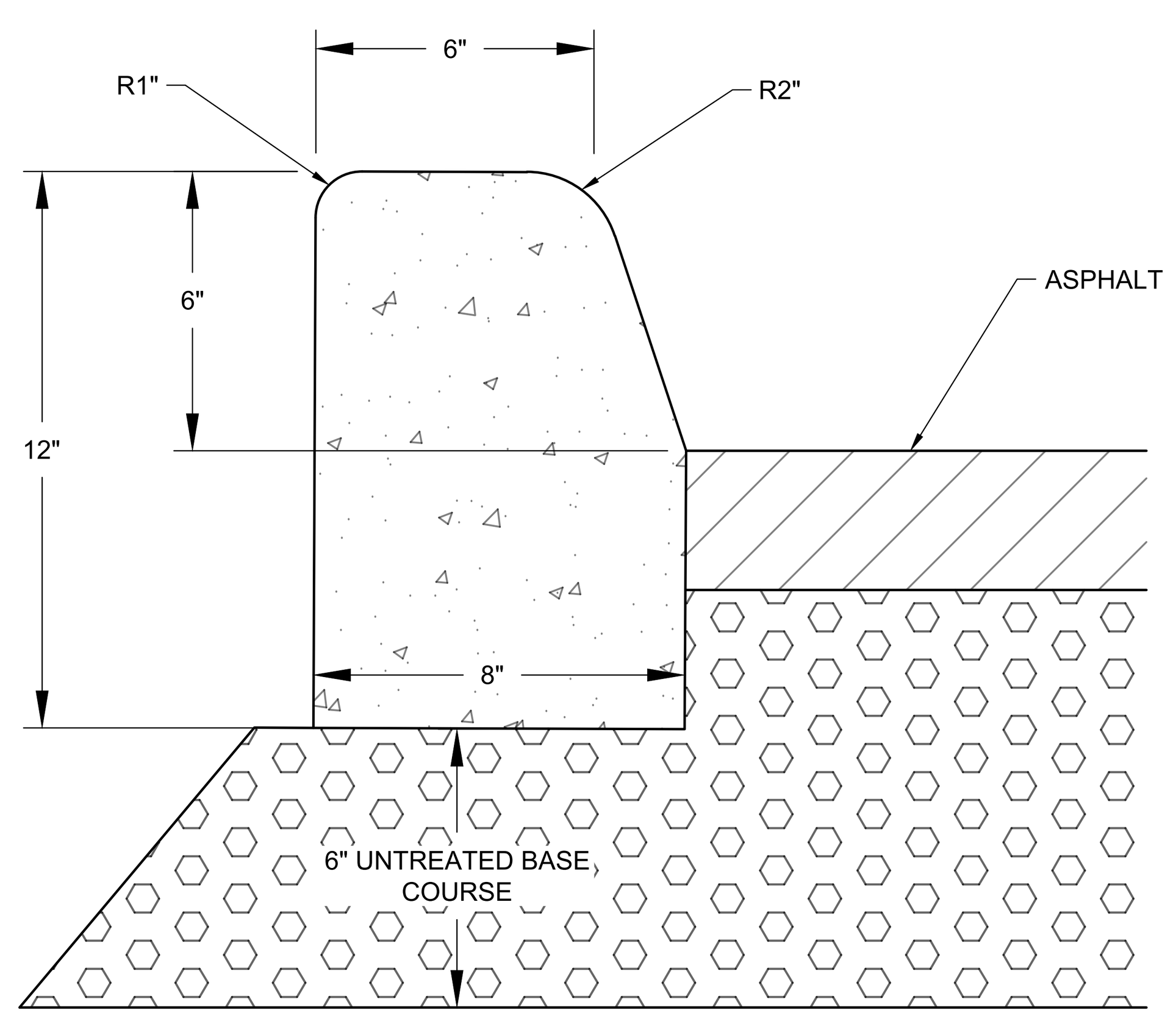
TOP VIEW



SECTION B-B

NOTES
1. FOR VALVE IN THE ROADWAY THE CONCRETE MUST SUPPORT THE FRAME UNDER TRAFFIC LOADING
2. CONCRETE USED FOR CONCRETE COLLARS SHALL BE HIGH EARLY STRENGTH MESH MIX MEETING ADOT STANDARDS.
3. USE CONCRETE CURING AGENT TYPE ID CLASS A CLEAR WITH FUGITIVE DYE, MEMBRANE FORMING COMPOUND, APWA SECTION 03 39 00
4. PROVIDED A NEAT VERTICAL AND CONCENTRIC JOINT BETWEEN CONCRETE AND EXISTING ASPHALT SURFACES. CLEAN EDGE OF ALL DIRT, OIL AND LOOSE DEBRIS.
5. PLACE CONCRETE IN ACCORDANCE WITH APWA SECTION 03 30 10. FILL THE ANNULAR SPACE AROUND THE FRAME AND COVER CASTING WITH CONCRETE, AND MECHANICALLY VIBRATE. APPLY A BROOM FINISH AND A CURING AGENT.

3 COVER COLLAR FOR WATER VALVE BOX
N.T.S.



4 BARRIER CURB
N.T.S.

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DETAILS

CREEKSIDE SUBDIVISION
COLORADO CITY, AZ

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ARIZONA811 BLUE STAKE, INC.
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DATE: DEC. 2023
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SHEET DT01
9 OF 9

Utility Board

December 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2 **Hildale City's Annual Christmas Tree Lighting 4pm**
3	4	5	6 Hildale City Council meeting 6pm	7 **Fair Housing Training 9am @ Police Department**	8	9
10	11 Town of Colorado City Council meeting 6 pm	12	13	14	15	16
17	18	19	20 **Mohave County ARPA Project Groundbreaking Ceremony 1pm** **Utility Advisory Board meeting 6pm**	21 Hildale Planning and Zoning meeting 6pm	22	23
24	25 **CHRISTMAS DAY HOLIDAY** **OFFICE CLOSED**	26	27	28	29	30
31	JAN 1 2024 **NEW YEARS DAY HOLIDAY** **OFFICE CLOSED**					

Utility Board

January 2024

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 **NEW YEARS DAY HOLIDAY** **OFFICE CLOSED**	2	3	4	5	6
7	8	9	10 Hildale City Council meeting 6 pm	11	12	13
14	15 Town of Colorado City Council meeting 6 pm	16	17 Hildale Court 4 pm	18 Hildale Planning & Zoning meeting 6 pm	19	20
21	22	23	24	25 Utility Advisory Board meeting 6 pm	26	27
28	29	30	31			