REQUEST FOR PROPOSALS (RFP)

Water Master Plan Update

Union Public Utility District
339 Main Street
Murphys, CA 95247
(209) 728-3651

Proposals Due Before:

10:00 a.m. on April 7, 2025

February 28, 2025

I. Introduction

Union Public Utility District (UPUD) is seeking Proposals from qualified consultants to conduct a Master Plan Update for both the domestic and irrigation systems (Study). The District's Master Plan (domestic system only) was last updated in February 2004. The selected consultant shall provide a full range of services to develop the Study that addresses the Scope of Work described below. The primary goals identified for this project are:

- Review the existing Water Master Plan and identify and complete the necessary updates to the plan.
- Review water demands and supply and provide recommendations for meeting existing and buildout water demands, including during drought and emergency scenarios.
- Evaluate the capacity of the existing domestic water system such as raw water storage, raw water conveyance, water treatment plant, distribution piping, and storage facilities with respect to meeting existing and buildout water demands, including current and future fire flow capabilities.
- Evaluate the capacity of the existing irrigation system such as water conveyance, distribution piping, and storage facilities with respect to meeting existing and buildout water demands. Also address the possibility of implementing scheduled irrigation usage for the ag customers.
- Update/Calibrate the District's current domestic hydraulic model.
- Create a calibrated hydraulic model for the irrigation system.
- Provide detailed recommendations for Water Treatment Plant Improvements that consider capacity, regulations, and maintenance costs.
- Determine the most cost-effective improvements for the water treatment plant, raw water storage, raw water conveyance, distribution system including the pipelines, and storage facilities.
- Review the vulnerability of the infrastructure and provide recommendations to assist the District with any updates to the risk and resilience assessment and emergency response planning.

II. Background

UPUD (Murphys) is located approximately 60 miles east of Stockton on Highway 4. The District provides domestic and irrigation water services to the residential community of Murphys, California and the surrounding areas. Murphys has a population of roughly 2,188 people, as well as its commercial businesses.

The purpose of the RFP is to facilitate the selection of a qualified Engineering Firm to build a Master Planning Document and update the current Domestic hydraulic water model, and create a new one for the irrigation system both for the entire District's Service Area. The existing domestic water model has not been calibrated.

III. Scope of Services

The following are the types of services that the consultant may need to perform; however, if additional services are needed, the consultant needs to indicate them in the proposal:

Task #1 – Project Management:

A. Provide overall project management activities to keep the project on schedule and within budget. Tasks include meetings, QA/QC, monthly invoicing and progress reporting, schedule updates, and budget management.

Task #2 – Water Master Plan Update:

A. Review existing system documents and define design criteria

Review system maps, improvement plans, and the District's current domestic hydraulic model. Review the District's current water master plan and other reports regarding the District's water system. Review the District's improvement standards and water system design requirements including fire flow requirements. Review existing water demands. Identify water quality, water age, and tank turnover requirements. Meet with the District's operators to discuss possible improvements and system deficiencies. Review the condition of the District's existing water infrastructure. Review permitting and compliance requirements.

Deliverable: Memo including descriptions of the above tasks

B. Hydraulic Modeling

Update the current domestic hydraulic model to reflect the District's existing water system, and create a new model for the irrigation system. Water models shall be WaterCAD or compatible format. Perform steady-state calibration testing per "Calibration Guidelines for Water Distribution System Modeling, Table 2: Minimum Criteria for Hydraulic Network Model Calibration, AWWA, 1999". Calibration for "Long-Range Planning" is summarized here:

- Number of Pressure Readings: 10% of Nodes
- Accuracy of Pressure Readings: +/- 5 PSI for 100% of Readings
- Number of Flow Readings: 1% of Pipes
- Accuracy of Flow Readings: +/- 10% of Readings

Other methods of calibration may be acceptable with approval from the District Engineer. Coordinate and perform field hydrant testing with the District's operators. Gather system data during hydrant testing. Confirm

calibration of model by comparing measured hydrant tests to modeled tests. Re-calibrate the model if needed. The model must be on the California NAD 83 Zone 3 coordinate system.

Deliverables:
1) Memo including calculations, tests, maps, and results of model calibration for each model (domestic and irrigation).
2) Calibrated models in WaterCAD format.

C. Existing System Analysis

Create model scenarios for average day demand, maximum day demand, and fire flow demands. Identify hydraulic deficiencies and/or areas of improvement in the District's water supply and existing system and identify improvements based on the District's design criteria.

D. Future System Analysis

Identify possible future developments based on current County planning forecasts and General Plan Buildout. Identify demands and future infrastructure locations based on forecasted developments. Create model scenarios for average day demand, maximum day demand, and fire flow demands. Evaluate future system alternatives and costs for buildout scenario and select recommended alternative based on the District's design criteria. Describe future improvements to the District's water supply, if needed.

E. 5-Year and 20-Year Capital Improvement Plan

Prepare 5-year and 20-Year CIP including estimated costs escalated to the year of implementation along with recommended projects and costs for each year of the CIP. The recommended improvements shall be scheduled annually and based on priority.

F. Administrative Draft Water Master Plan

Develop Administrative Draft Water Master Plan which incorporates all the prior tasks. Include figures, maps, flowcharts, and/or diagrams as needed. Include CIP as an appendix.

Deliverable:
1) Administrative Draft Water Master Plan with appendices
2) Hydraulic models in WaterCAD format

G. Final Water Master Plan

Prepare Final Water Master Plan after review of the Draft Water Master Plan

by District staff. The Final Water Master Plan shall incorporate District comments to the satisfaction of the District Engineer and be stamped by a registered Civil Engineer for submission to the District.

Deliverable:
1) Final Water Master Plan with appendices
2) Hydraulic models in WaterCAD format

All inquiries regarding the proposal should be directed to Matt Ospital, District Engineer by telephone at (209) 754-1824, or preferably by email at m.ospital@wgainc.net

IV. Proposal Format and Content

The proposal shall be brief, precise, and shall not include unnecessary promotional material. The proposal shall not exceed 25 single sided pages, excluding resumes. The proposal should contain the following elements in the exact order and segmentation listed below:

1. *Cover Letter* – Describe your firm or team's interest and commitment in providing Consultant Services to the District. The letter shall be signed by a person authorized to negotiate a contract with the District.

2. S*taffing, Team Experience and Understanding of Project & Objectives* - Describe the qualifications and experience of the team members expected to be assigned to this project. The description shall include previous experience with similar projects. A discussion demonstrating the proposer's understanding of the project, the goals, the services to be provided, and their significance to the overall District goals.

3. *Work Plan Approach* – Discuss your firm's understanding of the scope of work to be performed and level of effort expected to be performed by each resource. Describe the method that will be used for scheduling, coordination, management of overall project costs, quality assurance/quality control, and list key or potential issues/risk you may deem critical to this project.

4. *Project Schedule* – A project schedule for the project shall be submitted with the proposal. All major outputs and meetings shall be included in the schedule. Time shall be allocated for District review, typically three weeks for each deliverable.

5. *Staff Labor Estimate* – Include an itemized table of estimated person hours by professional classification and hourly rate to quantify the level of effort.

6. *References* – Provide at least three references (name, agency, title, address and telephone number) for recent similar or related work.

7. *Other Relevant Information & Exceptions* – Provide any additional relevant information that may be helpful in the selection process including any exceptions taken to the District's standard agreement.

8. *Resumes* – Include single page resumes of the key personnel and sub-consultants (if any) to be assigned to the project. It is expected that designated key staff will remain for the duration of the project. Key staff substitution will be allowed only after an interview and concurrence with the District.

V. Evaluation and Selection Process

Qualifications will be screened, and the top candidates will be reviewed by District staff. The qualifications for the top candidates will be verified and references will be checked. The following evaluation criteria and ranking schedule will be used to determine the most highly qualified firm(s).

Evaluation Criteria	Maximum Points Possible
A. Project Team & Staff Qualifications	25
B. Understanding and Approach	25
C. Related Project Experience	25
D. Project Schedule	15
E. Staff Labor Estimate/Cost Proposal	10
Total Points	**100**

The District reserves the right to make a selection after review of the proposals without oral interviews therefore, the proposal should be submitted initially on the most favorable terms that the Consultant might propose.

A contract will be negotiated with the Consultant considered whose proposal conforms to the RFP and is deemed most advantageous to the District's needs. In the event a mutually satisfactory contract cannot be negotiated with the District's first choice, negotiations may be terminated and commenced with the Consultant considered next best in meeting the District's needs for this particular project.

The selected Consultant will be required to execute a District prepared contract. The contract may further refine the scope of services and will provide for the terms and conditions of employment.

VI. Submittal Requirements

Proposals shall be submitted electronically to UPUD no later than 10:00 am April 7, 2025. The proposal shall be a single Adobe pdf file. No hard copy submissions will be accepted.

Email proposal or link for file download to:

Matt Ospital, PE
District Engineer
m.ospital@wgainc.net

Any changes made by the District to the requirements in this RFP will be made by written addenda. Any written addenda issued to this RFP shall be incorporated into the terms and conditions of any resulting Agreement. The District will not be bound by any modifications to or deviations from the requirements set forth in this RFP as the result of oral instructions. The District reserves the right to revise or withdraw this RFP at any time and for any reason.

Proposals received after the above date and time will be considered late and will not be accepted. Any late proposals will be returned unopened to the firm. Responses will be evaluated objectively based on the firm's responses to the RFP.

The District will not pay costs incurred in the proposal preparation including the costs for printing, mailing, etc. All costs for the preparation of the proposal shall be borne by the proposing firm.

VII. Right to Reject Proposals

The District reserves the right to reject any and all proposals or any part of any proposals, to waive minor defects or technicalities, or to solicit new proposals on the same project or on a modified project that may include portions of the originally proposed project as the District may deem necessary in its best interest. The District also reserves the right to negotiate with any firm, all or part of any proposal that is in the best interest of the District.

VIII. Proposed Project Schedule

Issue Request for Proposal	February 28, 2025
Last Day for RFP Questions	March 28, 2025
Proposals Deadline	April 7, 2025 by 10:00 a.m.
Consultant Selection (Board Meeting)	April 23, 2025

IX. Attachments

The following is a list of attachments included with this RFP.

Attachment 1 – 2004 Water Master Plan
Attachment 2 – CIP
Attachment 3 – Domestic System Map
Attachment 4 – Irrigation System Map
Attachment 5 – Domestic System WaterCAD model

ATTACHMENT 1

UNION PUBLIC UTILITY DISTRICT

WATER MASTER PLAN

2002-2032

FEBRUARY 2004

Prepared By:

Weber, Ghio & Associates, Inc.
P.O. Box 251
San Andreas, CA 95249

Table of Contents

1.0 Introduction

A Water Master Plan as defined in Section 10631 of the California Water Code was prepared, as directed by the Union Public Utility District (UPUD) Board of Directors, to identify priority improvements and probable costs to ensure the Union Public Utility District's water treatment plant and distribution system will have capacity to handle projected growth. System growth projections, consistent with past history and recent growth rates, are presented in Section 2.0. Section 3.0 provides information on existing and future water demand utilizing the growth rates in Section 2.0. Sections 4.0 and 5.0 provide cost estimates for water system improvement projects identified to ensure reliable service for the projected increased flows placed on the system. Section 6.0 presents a financial analysis of the proposed projects as well as options for acquiring sufficient revenue to fund said projects.

2.0 System Growth Projections

Tables 1 and 2 present a summary of the number of users and growth rates respectively from 1995 through 2002 for the UPUD water system. The average annual growth rate for the domestic water system during this time period was 1.3%.

Selection of growth rates for the thirty year time period covered by this Master Plan is a difficult task. Assumption of too high a growth rate will result in projected residential and commercial growth in the District which would not meet planned expectations, and the District's ability to repay any major debt could be impacted. Conversely, assumption of too low of a growth rate will result in planned improvements being required earlier with corresponding increases in costs related to financing.

Based upon historical growth and discussions with the District's Master Plan committee, the State of California Department of Finance (DOF) growth projections for Calaveras County were selected for future growth projections.

Table 3 presents the selected DOF growth rates for the 30 year Master Plan period as well as projected growth in the number of domestic water system users. For purposes of this Master Plan, no growth is assumed in irrigation.

3.0 Existing/Future Water Demand

Tables 4 through 8 present the following information on District flow rates to the domestic water system for the time period 1995 through 2002.

Table 4:	July/August (Peak Months) Monthly Flows
Table 5:	July/August (Peak Months) Average Daily Use
Table 6:	Water Loss History
Table 7:	Maximum Daily Domestic Water Use
Table 8:	Maximum Two Week Domestic Water Use

Utilizing the growth rates shown in Table 3, Tables 9 and 10 present the following information for the time period 2002 through 2032:

Table 9:	Maximum Two Week Domestic Water Use Projections
Table 10:	UPA Water Delivery History and Projections

It should be noted that all projections contained within this Master Plan assume no increase in irrigation system flows above the year 2002 levels. The District currently has a moratorium on new connections to the existing irrigation system which is projected to remain in place.

Although this Master Plan assumes no growth in the District's irrigation system, the District remains committed to maintaining the viability of the existing irrigation system. The benefits the irrigation system provides to quality of life and the importance of agriculture are fully recognized by the District.

4.0 Water Treatment Plant Projects

Table 11 presents a projection of water demand and storage requirements through the year 2032 utilizing the growth rates contained in Table 3. Based upon projected demands at the treatment plant, additional storage or addition of a fourth filter is required by the year 2006.

State Revolving Loan Fund (SRLF) Project:

Based upon the water demand projected in Table 11, the Union Public Utility District is proceeding with a Department of Health Services (DHS) State Revolving Loan Fund application to construct a 2.0 million gallon storage tank at the existing

treatment plant. The project includes the following components which are required either by projected water demand or DHS regulations:

A. 2.0 MG Welded Steel Storage Tank
B. Surface Wash Pump and Backflow Preventor
C. Modifications to Plant Bypass Piping
D. Modifications to Individual Filter Cell Monitoring
E. Chlorine Feed System at Vallecito Tank
F. Modifications to Plant Rate of Flow Control Valve

Estimated project costs for the SRLF project are presented in Table 13. Total project cost is estimated at $1,925,325 with $1,725,325 in SRLF funds.

Filter Cell #4:

Table 12 presents a projection of water demand and storage requirements through the year 2032 utilizing the growth rates contained in Table 3 and assuming a 2.0 million gallon storage tank is added to the treatment plant by the year 2006. Based upon the water demand projected in Table 12, addition of a fourth filter at the treatment plant will be required by the year 2010.

Installation of the fourth filter cell will require extension of the existing filter building and piping, electrical, and pneumatic modifications. Estimated costs for construction of Filter Cell #4 are presented in Table 14. Total project cost is estimated at $486,750.

Conventional Contact Clarification:

The District recently completed a study of future requirements at the water treatment plant. (See Water Treatment Study prepared by Gilmore Engineering, Inc. dated September 2003.) This study presents the following information regarding performance of the filter cells at the treatment plant:

A. The filter media has required frequent (annual) cleaning due to media clogging. In addition, replacement of media is required every five (5) years. This results from the filters being the only portion of the treatment plant to remove organics and suspended solids from the raw water. Future growth will require increased demand through the filters requiring more frequent cleaning and media replacement. This will in turn require increased costs and operation difficulties which are not feasible for adequate operation of the filter cells.

To mitigate the required cleaning and replacement of the filter media posed by increasing water demands, the Water Treatment Study recommends installation of conventional contact clarification at the treatment plant. Four contact clarifiers are anticipated, each 11 feet 6 inches in diameter. The clarifiers would be located outside, adjacent to a new building to house the control valves and instrumentation. As delineated in the Water Treatment Study, total project cost for the addition of clarification is $1,265,000.

5.0 Distribution System Projects

The distribution system projects consist of replacing existing mains which are undersized in order to increase fire flow to accommodate new connections (future growth) to the existing system. These projects and associated construction costs are identified below:

1.) Algiers Street - Church Street to Gold Street, Murphys

Replace 500 l.f. of 2" diameter steel/galvanized main with 6" diameter PVC. The improvement costs are estimated as follows:

500 l.f. of 6" diameter PVC at $50/l.f.	$25,000
Three (3) 6" diameter gate valves at $600/each	$ 1,800
Three (3) connections to existing main at $1,500/each	$ 4,500
Service connections and miscellaneous items	$ 6,000
Subtotal	$37,300

2.) Golden Creek Drive, Vallecito

Replace 1,100 l.f. of 4" diameter PVC with 6" diameter PVC. The improvement costs are estimated as follows:

1000 l.f. of 6" diameter PVC at $50/l.f.	$50,000
100 l.f. of 6" diameter PVC at $200/l.f. (S.H. 4 Crossing)	$20,000
Three (3) 6" diameter gate valves at $600/each	$ 1,800
Two (2) connections to existing main at $1,500/each	$ 3,000
Service connections and miscellaneous items	$12,000
Subtotal	$86,800

3.) Canepa Lane, Vallecito

Replace 950 l.f. of 4" diameter A.C.P. with 6" diameter PVC. The improvement costs are estimated as follows:

950 l.f. of 6" diameter PVC at $50/l.f.	$47,500
Two (2) 6" diameter gate valves at $600/each	$ 1,200
Two (2) connections to existing main at $1,500/each	$ 3,000
Service connections and miscellaneous items	$10,500
Subtotal	$62,200

4.) Parrots Ferry Road, Vallecito

Construct 2,250 l.f. of 6" diameter PVC to create looped system. The improvement costs are estimated as follows:

2100 l.f. of 6" diameter PVC at $50/l.f.	$105,000
150 l.f. of 6" diameter D.I. at $200/l.f. (Bridge)	$ 30,000
Three (3) 6" diameter gate valves at $600/each	$ 1,800
Two (2) connections to existing main at $1,500/each	$ 3,000
Service connections and miscellaneous items	$ 5,000
Bore and jack at State Highway 4	$ 50,000
Subtotal	$194,800

5.) Vallecito Tank to Carson Hill

Replace 20,000 l.f. of 6" diameter PVC with 10" diameter PVC. The improvement costs are estimated as follows:

20,000 l.f. of 10" diameter PVC at $60/l.f.	$1,200,000
Eight (8) 10" diameter gate valves at $900/each	$ 7,200
One (1) connection to existing main at $1,500/each	$ 1,500
One (1) pressure reducing station at $20,000/each	$ 20,000
Service connections and miscellaneous items	$ 75,000
Subtotal	$1,303,700

In addition to the projects identified above, substandard fire flows exist along Sugar Pine Way in Douglas Flat and in Six Mile Village in Vallecito. No additional growth is projected in these areas as all parcels serviced by District water mains have been built out. Therefore, modification to these water mains is not included in this Master Plan.

Total project cost for the various distribution system projects is summarized as follows:

1.	Algiers Street	$ 37,300
2.	Golden Creek Drive	$ 86,800
3.	Canepa Lane	$ 62,200
4.	Parrots Ferry Road	$ 194,800
5.	Vallecito Tank to Carson Hill	$1,303,700
	Subtotal	$1,684,800
	20% Construction Contingency	$ 336,960
	Subtotal	$2,021,760
	25% Engineering/Administration	$ 505,440
	Total Project Cost	$2,527,200

6.0 Financial Analysis

Table 15 presents a project cost summary in 2004 dollars for all proposed water treatment plant and distribution system projects. In addition, Table 15 presents proposed construction year schedules based upon water demand projections. The total cost for all projects is $6,004,275.

Table 16 presents a projection of project costs into proposed construction year dollars assuming an annual five percent (5%) increase in construction costs. The total construction year cost for all projects is projected to be $7,991,043.00.

Table 17 presents a projection of project costs, including financing costs, based upon construction year dollars (Table 16) and assumes financing rates and amortization schedules as shown. The total cost of all projects is projected to be $12,248,187.00.

Table 18 presents a financing plan for funding the various projects contained in this Master Plan and is based upon the following assumptions:

1. Connection fee of $8,765.00 per equivalent single family dwelling.

2. District funds in the amount of $150,000/year will be available to finance a portion of the projects commencing in the year 2011. The $150,000/year will become available upon completion of repayment of existing District debt incurred to fund previous capital projects.

3. The financing plan projects shortfalls in the capital improvement fund in the years 2026 through 2031. District reserves will be utilized to fund this shortfall.

TABLE 1
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
USER HISTORY

NO. OF USERS										
	MURPHYS		DOUGLAS FLAT		VALLECITO		CARSON HILL		TOTAL NO. OF USERS	
YEAR	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION
1995	883	24	207	31	230	24	121	15	1441	94
1996	923	25	209	31	230	24	127	15	1489	95
1997	930	26	211	32	232	23	131	15	1504	96
1998	932	28	211	32	231	23	136	15	1510	98
1999	948	28	211	32	236	23	142	16	1537	99
2000	950	29	213	32	238	23	141	17	1542	101
2001	967	27	212	33	242	21	141	17	1562	98
2002	970	26	218	34	244	20	145	17	1577	97

TABLE 2
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
GROWTH HISTORY

GROWTH RATE										
	MURPHYS		DOUGLAS FLAT		VALLECITO		CARSON HILL		TOTAL NO. OF USERS	
YEAR	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION
1995	------	------	------	------	------	------	------	------	------	------
1996	4.53%	4.17%	0.97%	0.00%	0.00%	0.00%	4.96%	0.00%	3.33%	1.06%
1997	0.76%	4.00%	0.96%	3.23%	0.87%	-4.17%	3.15%	0.00%	1.01%	1.05%
1998	0.22%	7.69%	0.00%	0.00%	-0.43%	0.00%	3.82%	0.00%	0.40%	2.00%
1999	1.72%	0.00%	0.00%	0.00%	2.16%	0.00%	4.41%	6.67%	1.79%	1.02%
2000	0.21%	3.57%	0.95%	0.00%	0.85%	0.00%	-0.70%	6.25%	0.33%	2.02%
2001	1.79%	-6.90%	-0.47%	3.13%	1.68%	-8.70%	0.00%	0.00%	1.30%	-2.97%
2002	1.34%	-3.70%	2.83%	3.03%	0.83%	-4.76%	2.84%	0.00%	0.96%	-1.02%
AVERAGE	1.51%	1.26%	0.75%	1.34%	0.85%	-2.52%	2.64%	1.85%	1.30%	0.45%

TABLE 3
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
PROJECTED USER GROWTH

NO. OF USERS[1]											
		MURPHYS		DOUGLAS FLAT		VALLECITO		CARSON HILL		TOTAL NO. OF USERS	
YEAR	GROWTH RATE[2]	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION
2002	2.53%	970	26	218	34	244	20	145	17	1577	97
2010	1.51%	1185	26	266	34	298	20	177	17	1926	97
2020	1.29%	1376	26	309	34	346	20	206	17	2237	97
2030	1.20%	1564	26	352	34	394	20	234	17	2543	97
2032	-------	1602	26	360	34	403	20	239	17	2605	97

[1] ASSUMES IRRIGATION CUSTOMERS CONSTANT AT YEAR 2002 NUMBER OF CONNECTIONS

[2] GROWTH RATES ARE FOR EACH SUCCEEDING PERIOD BASED UPON STATE OF CALIFORNIA DEPARTMENT OF FINANCE GROWTH PROJECTIONS FOR CALAVERAS COUNTY

TABLE 4
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
WATER USAGE HISTORY
JULY/AUGUST (PEAK MONTHS)

MONTHLY FLOWS

JULY WATER USAGE (CUBIC FEET)										
	MURPHYS		DOUGLAS FLAT		VALLECITO		CARSON HILL		TOTAL	
YEAR	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION
1995	2694000	1286200	583200	1559400	779000	1725000	894400	2693700	4950600	7264300
1996	3047600	2727700	620400	1300300	983400	2460700	1123700	2894400	5775100	9383100
1997	3401500	2309100	722500	1802600	1140900	2276600	1000700	3067700	6265600	9456000
1998	3162500	2041900	716200	1651100	1048500	2005800	1227500	3011500	6154700	8710300
1999	3531000	2721200	778700	2314100	1190600	1813900	1365300	3325100	6865600	10174300
2000	3700400	2432600	622400	1562700	1038900	1959900	909700	3706400	6271400	9661600
2001	3186800	4170300	594300	1526700	950600	1654400	811800	3422100	5543500	10773500
2002	3335600	3637400	622900	1848700	1011200	1830900	1017000	3718100	5986700	11035100

AUGUST WATER USAGE (CUBIC FEET)										
	MURPHYS		DOUGLAS FLAT		VALLECITO		CARSON HILL		TOTAL	
YEAR	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION	DOMESTIC	IRRIGATION
1995	3178900	1519600	678300	1719900	943800	2346300	1044000	2883600	5845000	8469400
1996	2813600	2386200	762900	1616800	1015600	2107400	1079800	3484000	5671900	9594400
1997	2859500	2127700	635200	1592300	681000	1642900	962200	2795700	5137900	8158600
1998	3120400	2003500	650500	1560500	971400	1666100	1154800	2703500	5897100	7933600
1999	3268100	2479700	662100	1500400	972900	1628400	1129000	2921200	6032100	8529700
2000	3316100	2309300	702900	1919200	933200	1925500	899000	3565000	5851200	9719000
2001	3749650	4170000	699600	1814300	1018900	1872600	961800	3904700	6429950	11761600
2002	3011400	3406100	505000	1981800	875000	1883600	877500	3441900	5268900	10713400

TABLE 5
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
JULY/AUGUST AVERAGE
AVERAGE DAILY USE

YEAR	TOTAL NO. OF USERS DOMESTIC	JULY TOTAL WATER USAGE DOMESTIC (GALLONS)	AUGUST TOTAL WATER USAGE DOMESTIC (GALLONS)	JULY AVERAGE DAILY USE/USER (GALLONS)	AUGUST AVERAGE DAILY USE/USER (GALLONS)
1995	1441	37033062	43723639	829.0	978.8
1996	1489	43200751	42428761	935.9	919.2
1997	1504	46869946	38434164	1005.3	824.3
1998	1510	46040356	44113374	983.6	942.4
1999	1537	51358258	45123245	1077.9	947.0
2000	1542	46913333	43770019	981.4	915.7
2001	1562	41468263	48099370	856.4	993.3
2002	1577	44783629	39414112	916.1	806.2

TABLE 6
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
WATER LOSS HISTORY

YEAR	JULY WATER PRODUCTION DOMESTIC (CUBIC FEET)	JULY WATER USAGE DOMESTIC (CUBIC FEET)	% LOSS	AUGUST WATER PRODUCTION DOMESTIC (CUBIC FEET)	AUGUST WATER USAGE DOMESTIC (CUBIC FEET)	% LOSS
1995	5445210	4950600	9%	5939828	5845000	2%
1996	6605958	5775100	13%	6776000	5671900	16%
1997	6835220	6265600	8%	6822520	5137900	25%
1998	6696994	6154700	8%	7020100	5897100	16%
1999	7145760	6865600	4%	6632828	6032100	9%
2000	6349559	6271400	1%	6257720	5851200	6%
2001	6111206	5543500	9%	6460647	6429950	0%
2002	7034404	5986700	15%	6340201	5268900	17%
AVERAGE:	6528039	5976650	8%	6531230	5766756	11%

TABLE 7
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
MAXIMUM DAILY DOMESTIC WATER USE

YEAR	1995		1996		1997		1998	
MONTH	DAY	GALLONS	DAY	GALLONS	DAY	GALLONS	DAY	GALLONS
JANUARY	Jan-3	429,000	Jan-7	537,000	Jan-20	678,000	Jan-5	705,000
FEBRUARY	Feb-25	439,000	Feb-16	579,000	Feb-26	645,000	Feb-13	726,000
MARCH	Mar-28	606,000	Mar-21	590,000	Mar-23	1,042,000	Mar-12	933,000
APRIL	Apr-10	690,000	Apr-29	1,106,000	Apr-12	1,281,000	Apr-29	1,025,000
MAY	May-31	1,022,000	May-27	1,564,000	May-17	1,646,000	May-13	976,000
JUNE	Jun-28	1,365,000	Jun-9	1,602,000	Jun-16	1,831,000	Jun-28	1,479,000
JULY	Jul-30	1,588,000	Jul-11	2,008,000	Jul-6	1,913,000	Jul-17	2,103,000
AUGUST	Aug-1	1,864,000	Aug-13	1,978,000	Aug-12	2,005,000	Aug-4	1,965,000
SEPTEMBER	Sep-10	1,460,000	Sep-3	1,591,000	Sep-1	1,810,000	Sep-1	1,894,000
OCTOBER	Oct-5	1,154,000	Oct-7	1,348,000	Oct-1	1,301,000	Oct-7	1,157,000
NOVEMBER	Nov-9	825,000	Nov-13	670,000	Nov-1	975,000	Nov-10	1,046,000
DECEMBER	Dec-14	595,000	Dec-28	1,017,000	Dec-19	657,000	Dec-22	967,000

YEAR	1999		2000		2001		2002	
MONTH	DAY	GALLONS	DAY	GALLONS	DAY	GALLONS	DAY	GALLONS
JANUARY	Jan-18	775,000	Jan-30	555,000	Jan-12	588,000	Jan-10	472,000
FEBRUARY	Feb-8	761,000	Feb-28	714,000	Feb-12	493,000	Feb-22	666,000
MARCH	Mar-12	874,000	Mar-26	795,000	Mar-14	763,000	Mar-19	927,000
APRIL	Apr-25	1,035,000	Apr-27	2,183,000[1]	Apr-30	894,000	Apr-22	1,023,000
MAY	May-28	1,711,000	May-29	1,392,000	May-22	1,693,000	May-23	1,495,000
JUNE	Jun-30	1,852,000	Jun-29	1,719,000	Jun-21	1,744,000	Jun-30	1,734,000
JULY	Jul-15	2,094,000	Jul-30	1,858,000	Jul-9	2,059,000	Jul-9	1,991,000
AUGUST	Aug-27	1,887,000	Aug-2	1,822,000	Aug-7	1,718,000	Aug-12	1,949,000
SEPTEMBER	Sep-6	1,885,000	Sep-17	1,443,000	Sep-3	1,560,000	Sep-2	1,756,000
OCTOBER	Oct-1	1,485,000	Oct-8	1,201,000	Oct-19	970,000	Oct-7	1,426,000
NOVEMBER	Nov-4	906,000	Nov-3	963,000	Nov-9	693,000	Nov-1	864,000
DECEMBER	Dec-19	644,000	Dec-7	595,000	Dec-13	547,000	Dec-1	647,000

[1] High daily flow due to filling of Eltringham tank after cleaning.

TABLE 8
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
MAXIMUM TWO WEEK DOMESTIC WATER USE

YEAR							
1995		1996		1997		1998	
DAY	GALLONS	DAY	GALLONS	DAY	GALLONS	DAY	GALLONS
Aug-1	1,864,000	Jul-18	1,516,000	Aug-3	1,709,000	Jul-17	2,103,000
Aug-2	1,728,000	Jul-19	1,339,000	Aug-4	1,846,000	Jul-18	1,818,000
Aug-3	1,721,000	Jul-20	1,545,000	Aug-5	1,945,000	Jul-19	1,705,000
Aug-4	1,565,000	Jul-21	1,877,000	Aug-6	1,827,000	Jul-20	1,906,000
Aug-5	1,543,000	Jul-22	1,747,000	Aug-7	1,952,000	Jul-21	1,490,000
Aug-6	1,484,000	Jul-23	1,967,000	Aug-8	1,488,000	Jul-22	2,016,000
Aug-7	1,451,000	Jul-24	1,777,000	Aug-9	1,557,000	Jul-23	1,553,000
Aug-8	1,499,000	Jul-25	1,813,000	Aug-10	1,487,000	Jul-24	1,766,000
Aug-9	1,468,000	Jul-26	1,757,000	Aug-11	1,875,000	Jul-25	1,683,000
Aug-10	1,423,000	Jul-27	1,836,000	Aug-12	2,005,000	Jul-26	1,777,000
Aug-11	1,480,000	Jul-28	1,234,000	Aug-13	1,763,000	Jul-27	1,767,000
Aug-12	1,472,000	Jul-29	1,844,000	Aug-14	1,690,000	Jul-28	1,798,000
Aug-13	1,609,000	Jul-30	1,999,000	Aug-15	1,748,000	Jul-29	1,639,000
Aug-14	1,475,000	Jul-31	1,687,000	Aug-16	1,869,000	Jul-30	1,575,000
TOTAL:	21,782,000	TOTAL:	23,938,000	TOTAL:	24,761,000	TOTAL:	24,596,000

YEAR							
1999		2000		2001		2002	
DAY	GALLONS	DAY	GALLONS	DAY	GALLONS	DAY	GALLONS
Jul-8	1,975,000	Jul-27	1,613,000	Jul-1	1,704,000	Jul-9	1,991,000
Jul-9	1,838,000	Jul-28	1,691,000	Jul-2	1,727,000	Jul-10	1,800,000
Jul-10	2,018,000	Jul-29	1,620,000	Jul-3	1,738,000	Jul-11	1,909,000
Jul-11	1,855,000	Jul-30	1,858,000	Jul-4	1,684,000	Jul-12	1,552,000
Jul-12	1,853,000	Jul-31	1,762,000	Jul-5	1,595,000	Jul-13	1,975,000
Jul-13	1,950,000	Aug-1	1,643,000	Jul-6	1,216,000	Jul-14	1,711,000
Jul-14	1,933,000	Aug-2	1,822,000	Jul-7	1,392,000	Jul-15	1,754,000
Jul-15	2,094,000	Aug-3	1,805,000	Jul-8	1,387,000	Jul-16	1,625,000
Jul-16	1,615,000	Aug-4	1,639,000	Jul-9	2,059,000	Jul-17	1,739,000
Jul-17	1,680,000	Aug-5	1,779,000	Jul-10	1,424,000	Jul-18	1,816,000
Jul-18	1,742,000	Aug-6	1,642,000	Jul-11	1,461,000	Jul-19	1,606,000
Jul-19	1,658,000	Aug-7	1,615,000	Jul-12	1,461,000	Jul-20	1,669,000
Jul-20	1,758,000	Aug-8	1,487,000	Jul-13	1,511,000	Jul-21	1,549,000
Jul-21	2,025,000	Aug-9	1,666,000	Jul-14	1,514,000	Jul-22	1,684,000
TOTAL:	25,994,000	TOTAL:	23,642,000	TOTAL:	21,873,000	TOTAL:	24,380,000

TABLE 9
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
MAXIMUM TWO WEEK DOMESTIC WATER USE PROJECTIONS

	YEAR								
	2002	2005	2006	2007	2008	2010	2020	2030	2032
	GALLONS	GALLONS	GALLONS	GALLONS	GALLONS	GALLONS	GALLONS	GALLONS	GALLONS
	1,991,000	2,112,865	2,155,122	2,198,225	2,242,189	2,332,774	2,709,948	3,080,538	3,154,915
	1,800,000	1,910,174	1,948,378	1,987,345	2,027,092	2,108,987	2,449,978	2,785,017	2,852,259
	1,909,000	2,025,846	2,066,363	2,107,690	2,149,844	2,236,698	2,598,338	2,953,665	3,024,979
	1,552,000	1,646,995	1,679,935	1,713,533	1,747,804	1,818,415	2,112,425	2,401,304	2,459,281
	1,975,000	2,095,886	2,137,804	2,180,560	2,224,171	2,314,027	2,688,170	3,055,783	3,129,561
	1,711,000	1,815,727	1,852,041	1,889,082	1,926,864	2,004,709	2,328,840	2,647,313	2,711,230
	1,754,000	1,861,359	1,898,586	1,936,558	1,975,289	2,055,091	2,387,367	2,713,844	2,779,368
	1,625,000	1,724,463	1,758,952	1,794,131	1,830,014	1,903,946	2,211,786	2,514,252	2,574,956
	1,739,000	1,845,441	1,882,350	1,919,997	1,958,396	2,037,516	2,366,951	2,690,636	2,755,599
	1,816,000	1,927,154	1,965,697	2,005,011	2,045,111	2,127,733	2,471,755	2,809,773	2,877,612
	1,606,000	1,704,300	1,738,386	1,773,154	1,808,617	1,881,685	2,185,925	2,484,854	2,544,848
	1,669,000	1,771,156	1,806,579	1,842,711	1,879,565	1,955,500	2,271,674	2,582,330	2,644,678
	1,549,000	1,643,811	1,676,687	1,710,221	1,744,426	1,814,900	2,108,342	2,396,662	2,454,527
	1,684,000	1,787,074	1,822,816	1,859,272	1,896,458	1,973,074	2,292,090	2,605,538	2,668,446
TOTAL:	24,380,000	25,872,251	26,389,696	26,917,490	27,455,840	28,565,056	33,183,589	37,721,510	38,632,258

TABLE 10
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
UPA WATER DELIVERY HISTORY AND PROJECTIONS

YEAR	MAXIMUM DRAW (MINERS INCH)	MAXIMUM DRAW (CFS)	NO. OF DAYS EXCEEDING 270 MINERS INCH	YEARLY WATER DRAW - NORTH DITCH (MINERS INCH)	YEARLY WATER DRAW - SOUTH DITCH (MINERS INCH)	YEARLY WATER DRAW - DOMESTIC WATER (MINERS INCH)	TOTAL YEARLY WATER DRAW (MINERS INCH)	ACRE-FEET OVER 270 MINERS INCH	WATER COST[2]
ACTUAL:									
1995	259	6.5	0	7110	20210	17571	44891	0.0	$2,244.55
1996	301	7.5	71	11390	20400	19905	51695	63.9	$3,478.67
1997	302	7.5	76	16980	26050	23432	66462	66.2	$4,249.56
1998	305	7.6	12	4355	23760	19596	47711	13.4	$2,572.50
1999	308	7.7	75	9510	18610	23250	51370	61.3	$3,425.72
2000	340	8.5	77	9390	23400	23272	56062	130.4	$4,627.64
2001	313	7.8	101	9660	16780	19899	46339	119.9	$3,994.69
2002	335	8.4	60	9120	17870	20332	47322	73.2	$3,389.50
PROJECTED:[1]									
2010	358	8.9	81	9120	17870	24831	51821	147.0	$4,647.29
2020	379	9.5	89	9120	17870	28845	55835	226.3	$5,957.19
2030	399	10.0	89	9120	17870	32790	59780	305.5	$7,263.40
2032	403	10.1	89	9120	17870	33582	60572	321.5	$7,525.55

[1] PROJECTIONS BASED UPON YEAR 2002 ACTUAL FLOWS WITH GROWTH RATES SHOWN IN TABLE 3 APPLIED TO DOMESTIC USAGE ONLY (ASSUMES IRRIGATION USAGE CONSTANT AT YEAR 2002 LEVELS)

[2] YEAR 2000,2001,2002,2010,2020,2030,AND 2032 WATER COSTS DO NOT INCLUDE COMPONENT OF WATER COST (POWER COSTS) ASSOCIATED WITH FLOWS >325 M.I.

PER AGREEMENT WITH UPA:

DRAW[3]	WATER COST
270 M.I.	$.05/M.I.
270 M.I.-325 M.I.	$15.00/ACRE-FOOT (1000 ACRE FOOT MAXIMUM)
>325 M.I. OR >1000 ACRE-FOOT ABOVE 270 M.I.	POWER COSTS

[3] MAXIMUM DRAW RATE PER AGREEMENT IS 11.5 CFS

TABLE 11
UNION PUBLIC UTILITY DISTRICT
WATER STORAGE ANALYSIS
EXISTING SYSTEM W/3 FILTER CELLS AND .250MG TANK

DATE	FLOWRATE (MGD)	2003 (MGD)	DELTA (MGD)	2004 (MGD)	DELTA (MGD)	2005 (MGD)	DELTA (MGD)	2006 (MGD)	DELTA (MGD)	2007 (MGD)	DELTA (MGD)	2008 (MGD)	DELTA (MGD)	2009 (MGD)	DELTA (MGD)	2010 (MGD)	DELTA (MGD)	2020 (MGD)	DELTA (MGD)	2030 (MGD)	DELTA (MGD)	2032 (MGD)	DELTA (MGD)
09-Jul-02	1.99	2.04	-0.05	2.09	-0.10	2.15	-0.16	2.20	-0.21	2.26	-0.27	2.31	-0.32	2.37	-0.38	2.43	-0.44	2.82	-0.83	3.21	-1.22	3.29	-1.30
10-Jul-02	1.80	1.85	0.14	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.09	-0.10	2.14	-0.15	2.20	-0.21	2.55	-0.56	2.90	-0.91	2.97	-0.98
11-Jul-02	1.91	1.96	0.03	2.01	-0.02	2.06	-0.07	2.11	-0.12	2.16	-0.17	2.22	-0.23	2.27	-0.28	2.33	-0.34	2.71	-0.72	3.08	-1.09	3.15	-1.16
12-Jul-02	1.55	1.59	0.40	1.63	0.36	1.67	0.32	1.72	0.27	1.76	0.23	1.80	0.19	1.85	0.14	1.90	0.09	2.20	-0.21	2.50	-0.51	2.56	-0.57
13-Jul-02	1.98	2.02	-0.03	2.08	-0.09	2.13	-0.14	2.18	-0.19	2.24	-0.25	2.29	-0.30	2.35	-0.36	2.41	-0.42	2.80	-0.81	3.19	-1.20	3.26	-1.27
14-Jul-02	1.71	1.75	0.24	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.09	-0.10	2.43	-0.44	2.76	-0.77	2.83	-0.84
15-Jul-02	1.75	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.09	-0.10	2.14	-0.15	2.49	-0.50	2.83	-0.84	2.90	-0.91
16-Jul-02	1.63	1.67	0.32	1.71	0.28	1.75	0.24	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.98	0.01	2.31	-0.32	2.62	-0.63	2.68	-0.69
17-Jul-02	1.74	1.78	0.21	1.83	0.16	1.87	0.12	1.92	0.07	1.97	0.02	2.02	-0.03	2.07	-0.08	2.12	-0.13	2.47	-0.48	2.80	-0.81	2.87	-0.88
18-Jul-02	1.82	1.86	0.13	1.91	0.08	1.96	0.03	2.01	-0.02	2.06	-0.07	2.11	-0.12	2.16	-0.17	2.22	-0.23	2.58	-0.59	2.93	-0.94	3.00	-1.01
19-Jul-02	1.61	1.65	0.34	1.69	0.30	1.73	0.26	1.77	0.22	1.82	0.17	1.87	0.12	1.91	0.08	1.96	0.03	2.28	-0.29	2.59	-0.60	2.65	-0.66
20-Jul-02	1.67	1.71	0.28	1.75	0.24	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.37	-0.38	2.69	-0.70	2.76	-0.77
21-Jul-02	1.55	1.59	0.40	1.63	0.36	1.67	0.32	1.71	0.28	1.76	0.23	1.80	0.19	1.85	0.14	1.89	0.10	2.20	-0.21	2.50	-0.51	2.56	-0.57
22-Jul-02	1.68	1.73	0.26	1.77	0.22	1.82	0.17	1.86	0.13	1.91	0.08	1.96	0.03	2.01	-0.02	2.06	-0.07	2.39	-0.40	2.72	-0.73	2.78	-0.79
STORAGE REQ'D: (MIL. GALLONS)			0.05		0.10		0.18		0.33		0.51		0.86		1.38		1.94		6.73		11.46		12.41

4TH FILTER OR LARGER TANK REQUIRED

FLOWRATE PROJECTIONS ARE BASED UPON AN ANNUAL GROWTH RATES SHOWN IN TABLE 3

DELTA IS BASED UPON PLANT MAXIMUM DAILY FLOW OF 1.99MGD ASSUMING 2 FILTERS ARE IN OPERATION (DHS REDUNDANCY REQUIREMENTS) AND 1 HOUR PER DAY IS LOST DUE TO BACKWASHING AND OPERATIONAL PROCEDURES MINUS PROJECTED FLOWRATE

TABLE 12
UNION PUBLIC UTILITY DISTRICT
WATER STORAGE ANALYSIS
PROPOSED SYSTEM W/3 FILTER CELLS AND 2.0 MG TANK

DATE	FLOWRATE (MGD)	2003 (MGD)	DELTA (MGD)	2004 (MGD)	DELTA (MGD)	2005 (MGD)	DELTA (MGD)	2006 (MGD)	DELTA (MGD)	2007 (MGD)	DELTA (MGD)	2008 (MGD)	DELTA (MGD)	2009 (MGD)	DELTA (MGD)	2010 (MGD)	DELTA (MGD)	2020 (MGD)	DELTA (MGD)	2030 (MGD)	DELTA (MGD)	2032 (MGD)	DELTA (MGD)
09-Jul-02	1.99	2.04	-0.05	2.09	-0.10	2.15	-0.16	2.20	-0.21	2.26	-0.27	2.31	-0.32	2.37	-0.38	2.43	-0.44	2.82	0.09	3.21	-0.29	3.29	-0.37
10-Jul-02	1.80	1.85	0.14	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.09	-0.10	2.14	-0.15	2.20	-0.21	2.55	0.36	2.90	0.01	2.97	-0.06
11-Jul-02	1.91	1.96	0.03	2.01	-0.02	2.06	-0.07	2.11	-0.12	2.16	-0.17	2.22	-0.23	2.27	-0.28	2.33	-0.34	2.71	0.21	3.08	-0.16	3.15	-0.24
12-Jul-02	1.55	1.59	0.40	1.63	0.36	1.67	0.32	1.72	0.27	1.76	0.23	1.80	0.19	1.85	0.14	1.90	0.09	2.20	0.71	2.50	0.41	2.56	0.35
13-Jul-02	1.98	2.02	-0.03	2.08	-0.09	2.13	-0.14	2.18	-0.19	2.24	-0.25	2.29	-0.30	2.35	-0.36	2.41	-0.42	2.80	0.11	3.19	-0.27	3.26	-0.35
14-Jul-02	1.71	1.75	0.24	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.09	-0.10	2.43	0.49	2.76	0.16	2.83	0.09
15-Jul-02	1.75	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.09	-0.10	2.14	-0.15	2.49	0.43	2.83	0.09	2.90	0.02
16-Jul-02	1.63	1.67	0.32	1.71	0.28	1.75	0.24	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.98	0.01	2.31	0.61	2.62	0.30	2.68	0.23
17-Jul-02	1.74	1.78	0.21	1.83	0.16	1.87	0.12	1.92	0.07	1.97	0.02	2.02	-0.03	2.07	-0.08	2.12	-0.13	2.47	0.45	2.80	0.11	2.87	0.04
18-Jul-02	1.82	1.86	0.13	1.91	0.08	1.96	0.03	2.01	-0.02	2.06	-0.07	2.11	-0.12	2.16	-0.17	2.22	-0.23	2.58	0.34	2.93	-0.01	3.00	-0.08
19-Jul-02	1.61	1.65	0.34	1.69	0.30	1.73	0.26	1.77	0.22	1.82	0.17	1.87	0.12	1.91	0.08	1.96	0.03	2.28	0.64	2.59	0.33	2.65	0.26
20-Jul-02	1.67	1.71	0.28	1.75	0.24	1.80	0.19	1.84	0.15	1.89	0.10	1.94	0.05	1.99	0.00	2.04	-0.05	2.37	0.55	2.69	0.22	2.76	0.16
21-Jul-02	1.55	1.59	0.40	1.63	0.36	1.67	0.32	1.71	0.28	1.76	0.23	1.80	0.19	1.85	0.14	1.89	0.10	2.20	0.72	2.50	0.42	2.56	0.36
22-Jul-02	1.68	1.73	0.26	1.77	0.22	1.82	0.17	1.86	0.13	1.91	0.08	1.96	0.03	2.01	-0.02	2.06	-0.07	2.39	0.53	2.72	0.20	2.78	0.13
STORAGE REQ'D: (MIL. GALLONS)			0.05		0.10		0.18		0.33		0.51		0.86		1.38		1.94		0.00		0.16		0.29

ADD 2.0 MG TANK

ADD 4TH FILTER

FLOWRATE PROJECTIONS ARE BASED UPON AN ANNUAL GROWTH RATES SHOWN IN TABLE 3

2002-2010 DELTA IS BASED UPON PLANT MAXIMUM DAILY FLOW OF 1.99MGD ASSUMING 2 FILTERS ARE IN OPERATION (DHS REDUNDANCY REQUIREMENTS) AND 1 HOUR PER DAY IS LOST DUE TO BACKWASHING AND OPERATIONAL PROCEDURES MINUS PROJECTED FLOWRATE

2020-2032 DELTA IS BASED UPON PLANT MAXIMUM DAILY FLOW OF 2.92 MGD ASSUMING 3 FILTERS ARE IN OPERATION (DHS REDUNDANCY REQUIREMENTS) AND 1.5 HOUR PER DAY IS LOST DUE TO BACKWASHING AND OPERATIONAL PROCEDURES MINUS PROJECTED FLOWRATE

TABLE 13
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
S.R.L.F. PROJECT
ESTIMATED CONSTRUCTION COSTS

ITEM	DESCRIPTION	UNIT	QTY.	$/UNIT	$TOTAL
A. TANK / PIPING					
1	2 MG STORAGE TANK	LS	1	$615,000.00	$615,000.00
2	SITE GRADING	CY	8500	$15.00	$127,500.00
3	14 " DIA. INLET/OUTLET PIPING	LF	350	$75.00	$26,250.00
4	14" GATE VALVE	EA	2	$1,500.00	$3,000.00
5	12" DIA. BYPASS PIPING	LF	100	$50.00	$5,000.00
6	12" GATE VALVE	EA	4	$1,200.00	$4,800.00
7	ELECTRICAL/CONTROL	LS	1	$145,000.00	$145,000.00
8	STORM DRAIN (7'-0"X5'-1" CMPA)	LF	150	$500.00	$75,000.00
9	HEADWALL	LS	1	$10,000.00	$10,000.00
10	JUNCTION BOX	LS	1	$7,500.00	$7,500.00
11	MISC. SITE PIPING	LS	1	$35,000.00	$35,000.00
12	14" DIA.FLOW METER	LS	1	$20,000.00	$20,000.00
13	12" DIA. FLOW METER	LS	1	$17,500.00	$17,500.00
14	FENCING	LS	1	$20,000.00	$20,000.00
				SUBTOTAL:	$1,111,550.00
A. FILTER BUILDING/MISC. MODIFICATIONS					
1	12" RATE OF FLOW CONTROL VALVE	LS	1	$22,000.00	$22,000.00
2	MODIFY BY-PASS PIPING	LS	1	$10,000.00	$10,000.00
3	SURFACE WASH PUMP/RPPBFP	LS	1	$15,000.00	$15,000.00
4	INDIVIDUAL FILTER CELL MONITORING	LS	1	$35,000.00	$35,000.00
5	CL_2 FEED AT VALLECITO TANK	LS	1	$50,000.00	$50,000.00
				SUBTOTAL:	$132,000.00
				CONSTRUCTION COST:	$1,243,550.00
				20% CONSTRUCTION CONTINGENCY:	$248,710.00
				TOTAL CONSTRUCTION COST:	$1,492,260.00

SOFT COSTS:

SRLF APPLICATION:	$36,885.00
ENVIRONMENTAL:	$23,115.00
DESIGN ENGINEERING:	$223,839.00
CONSTRUCTION ENGINEERING:	$149,226.00
TOTAL SOFT COST:	$433,065.00

TOTAL PROJECT COST:	**$1,925,325.00**
DISTRICT CONTRIBUTION:	**$200,000.00**
TOTAL SRLF COST:	**$1,725,325.00**

TABLE 14
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
FILTER CELL #4
ESTIMATED CONSTRUCTION COSTS

ITEM	DESCRIPTION	UNIT	QTY.	$/UNIT	$TOTAL
1	FILTER CELL	EA	1	$120,000.00	$120,000.00
2	MANIFOLD PIPING, VALVES AND ACTUATORS	LS	1	$35,000.00	$35,000.00
3	SURFACE WASH AND SAMPLE PIPING	LS	1	$7,500.00	$7,500.00
4	TURBIDIMETER	LS	1	$3,500.00	$3,500.00
5	PAINTING	LS	1	$3,500.00	$3,500.00
6	PNEUMATIC MODIFICATIONS	LS	1	$5,000.00	$5,000.00
7	ELECTRICAL AND PNEUMATIC INSTRUMENTATION	LS	1	$50,000.00	$50,000.00
8	MISC. PIPING MODIFICATIONS	LS	1	$25,000.00	$25,000.00
9	CONTROL BUILDING EXTENSION	SF	300	$250.00	$75,000.00
				SUBTOTAL:	$324,500.00
				20% CONSTRUCTION CONTINGENCY:	$64,900.00
				SUBTOTAL:	$389,400.00
				25% ENGINEERING/ADMINISTRATION:	$97,350.00
				TOTAL:	**$486,750.00**

TABLE 15
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
PROJECT COST SUMMARY - 2004 $

WATER TREATMENT PLANT PROJECTS	CONST. YEAR	2004/$
1. STATE REVOLVING LOAN FUND PROJECT	2004	$ 1,725,325.00
2. FILTER CELL #4	2010	$ 486,750.00
3. CONVENTIONAL CONTACT CLARIFICATION	2010	$ 1,265,000.00
	TOTAL COST WTP PROJECTS:	**$ 3,477,075.00**

DISTRIBUTION SYSTEM PROJECTS	CONST. YEAR	2004/$
1. ALGIERS ST.	2013	$ 55,950.00
2. GOLDEN CREEK DR.	2013	$ 130,200.00
3. CANEPA LANE	2013	$ 93,300.00
4. PARROTTS FERRY ROAD	2013	$ 292,200.00
5. VALLECITO TANK TO CARSON HILL	2013	$ 1,955,550.00
	TOTAL COST DISTRIBUTION PROJECTS:	**$ 2,527,200.00**
	TOTAL COST ALL PROJECTS:	**$ 6,004,275.00**

TABLE 16
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
PROJECT COST SUMMARY - CONSTRUCTION YEAR $[1]

WATER TREATMENT PLANT PROJECTS	CONST. YEAR	CONST. YEAR COST
1. STATE REVOLVING LOAN FUND PROJECT	2004	$ 1,725,325.00
2. FILTER CELL #4	2010	$ 652,292.00
3. CONVENTIONAL CONTACT CLARIFICATION	2010	$ 1,692,909.00
	TOTAL COST WTP PROJECTS:	**$ 4,070,526.00**

DISTRIBUTION SYSTEM PROJECTS	CONST. YEAR	CONST. YEAR COST
1. ALGIERS ST.	2013	$ 86,797.00
2. GOLDEN CREEK DR.	2013	$ 201,983.00
3. CANEPA LANE	2013	$ 144,739.00
4. PARROTTS FERRY ROAD	2013	$ 453,298.00
5. VALLECITO TANK TO CARSON HILL	2013	$ 3,033,700.00
	TOTAL COST DISTRIBUTION PROJECTS:	**$ 3,920,517.00**
	TOTAL COST ALL PROJECTS:	**$ 7,991,043.00**

[1] CONSTRUCTION YEAR COST ASSUMES 5% PER YEAR INCREASE IN PROJECT COSTS

TABLE 17
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
PROJECT COST SUMMARY - INCLUDING FINANCING COSTS[1]

WATER TREATMENT PLANT PROJECTS	CONST. YEAR	COST PER YEAR	TOTAL PROJECT COST
1. STATE REVOLVING LOAN FUND PROJECT	2004	$109,631.90	$2,192,638.00
2. FILTER CELL #4	2010	$52,341.60	$1,046,832.00
3. CONVENTIONAL CONTACT CLARIFICATION	2010	$135,843.40	$2,716,868.00
TOTAL COST WTP PROJECTS:		**$297,816.90**	**$5,956,338.00**

DISTRIBUTION SYSTEM PROJECTS	CONST. YEAR	COST PER YEAR	TOTAL PROJECT COST
1. ALGIERS ST.	2013	$6,964.80	$139,296.00
2. GOLDEN CREEK DR.	2013	$16,207.65	$324,153.00
3. CANEPA LANE	2013	$11,614.25	$232,285.00
4. PARROTTS FERRY ROAD	2013	$36,373.80	$727,476.00
5. VALLECITO TANK TO CARSON HILL	2013	$243,431.95	$4,868,639.00
TOTAL COST DISTRIBUTION PROJECTS:		**$314,592.45**	**$6,291,849.00**
TOTAL COST ALL PROJECTS:		**$612,409.35**	**$12,248,187.00**

[1] FINANCING COSTS ASSUMED AS FOLLOWS:
STATE REVOLVING LOAN FUND PROJECT: 2.4% FOR 20 YEARS
ALL OTHER PROJECTS: 5% FOR 20 YEARS

TABLE 18
UNION PUBLIC UTILITY DISTRICT
2002 MASTER PLAN
FINANCING PLAN

PROJECT	CONST. YEAR	COST PER YEAR
1. STATE REVOLVING LOAN FUND PROJECT	2004	$109,631.90
2. FILTER CELL #4	2010	$52,341.60
3. CONVENTIONAL CONTACT CLARIFICATION	2010	$135,843.40
4. ALGIERS ST.	2013	$6,964.80
5. GOLDEN CREEK DR.	2013	$16,207.65
6. CANEPA LANE	2013	$11,614.25
7. PARROTTS FERRY ROAD	2013	$36,373.80
8. VALLECITO TANK TO CARSON HILL	2013	$243,431.95

YEAR	PAYMENTS FOR PROJECTS	CONSTRUCTION COST/YEAR	DISTRICT FUNDS AVAILABLE	NUMBER OF NEW CONNECTIONS	CONNECTION FEE REVENUE[1]	EXCESS/ (SHORTFALL) IN FUNDING	CAPITOL FUND BALANCE
2003	---	0	0	44	$385,660.00	$385,660.00	$385,660.00
2004	1	$109,631.90	$0.00	44	$385,660.00	$276,028.10	$661,688.10
2005	1	$109,631.90	$0.00	44	$385,660.00	$276,028.10	$937,716.20
2006	1	$109,631.90	$0.00	44	$385,660.00	$276,028.10	$1,213,744.30
2007	1	$109,631.90	$0.00	44	$385,660.00	$276,028.10	$1,489,772.40
2008	1	$109,631.90	$0.00	44	$385,660.00	$276,028.10	$1,765,800.50
2009	1	$109,631.90	$0.00	44	$385,660.00	$276,028.10	$2,041,828.60
2010	1,2,3	$297,816.90	$0.00	31	$271,715.00	($26,101.90)	$2,015,726.70
2011	1,2,3	$297,816.90	$150,000.00	31	$271,715.00	$123,898.10	$2,139,624.80
2012	1,2,3	$297,816.90	$150,000.00	31	$271,715.00	$123,898.10	$2,263,522.90
2013	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$2,072,828.55
2014	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$1,882,134.20
2015	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$1,691,439.85
2016	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$1,500,745.50
2017	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$1,310,051.15
2018	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$1,119,356.80
2019	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$928,662.45
2020	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$737,968.10
2021	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$547,273.75
2022	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$356,579.40
2023	1,2,3,4,5,6,7,8	$612,409.35	$150,000.00	31	$271,715.00	($190,694.35)	$165,885.05
2024	2,3,4,5,6,7,8	$502,777.45	$150,000.00	31	$271,715.00	($81,062.45)	$84,822.60
2025	2,3,4,5,6,7,8	$502,777.45	$150,000.00	31	$271,715.00	($81,062.45)	$3,760.15
2026	2,3,4,5,6,7,8	$502,777.45	$150,000.00	31	$271,715.00	($81,062.45)	($77,302.30)
2027	2,3,4,5,6,7,8	$502,777.45	$150,000.00	31	$271,715.00	($81,062.45)	($158,364.75)
2028	2,3,4,5,6,7,8	$502,777.45	$150,000.00	31	$271,715.00	($81,062.45)	($239,427.20)
2029	2,3,4,5,6,7,8	$502,777.45	$150,000.00	31	$271,715.00	($81,062.45)	($320,489.65)
2030	4,5,6,7,8	$314,592.45	$150,000.00	31	$271,715.00	$107,122.55	($213,367.10)
2031	4,5,6,7,8	$314,592.45	$150,000.00	31	$271,715.00	$107,122.55	($106,244.55)
2032	4,5,6,7,8	$314,592.45	$150,000.00	31	$271,715.00	$107,122.55	$878.00
					TOTAL EXCESS/(SHORTFALL):	$878.00	

[1] ASSUMES $8765 CONNECTION FEE

ATTACHMENT 2

Agenda Item

DATE: June 26, 2024

TO: UPUD Board of Directors

FROM: Jessica Self, General Manager

SUBJECT: Approval of Updated Capital Improvement Program

RECOMMENDED ACTION:

Motion: _____ / _____ by Minute Entry to approve the updated Capital Improvement Program.

BACKGROUND:

Union Public Utility District (UPUD) approved the current Capital Improvement Program (CIP) in 2021, prior to the District's Proposition 218 Rate Study. Updates to project costs are needed due to the sustained rise in inflation. Inflation can significantly impact the cost of materials, labor, and overall project expenses. Therefore, it is imperative that we proactively reassess and revise our CIP to ensure the long-term viability of our projects and their cost-effectiveness.

CIP Review Process:

Changes in Project Costs: Weber, Ghio & Associates staff used the Engineering News-Record (ENR) index to update project costs. ENR is a widely recognized and respected publication in the construction industry. It provides comprehensive coverage of various construction projects, including their costs, timelines, and other relevant details. As a result, many professionals, including engineers, contractors, and project managers, refer to ENR for benchmarking and assessing construction costs.

Prioritization of Projects: Once project costs are updated, it is important to assess the reprioritization of projects across fiscal years. Specifically, the District must look at staff workload, costs per fiscal year, and severity of need for each project. Here is a summary of the main changes in project prioritization:

Treatment Plant Upgrades: Projects slated for FY25 are focused on treatment plant upgrades:

1. Replacement of existing power service and panel ($725,312): The current service/panel is undersized for the current water treatment plant operations. The operators have to run

the plant cautiously and pick and choose when to use certain equipment. Recently with everything running the panel caught fire. This could be considered an emergency project.

2. New Filter Media and Service Wash ($463,000): The filter media and service wash have reached the end of useful life. It is imperative to replace them within the next year.

3. Coat & Recoat Filters ($283,000): To do this efficiently, it is best to do this at the same time as filter media replacement.

Irrigation Projects: Staff recommend deferring all Irrigation CIP for five years. Currently there are not sufficient funds within the irrigation reserve or irrigation revenue to fund these projects. Staff would like to spend this time to instead work with State, Federal and other entities to secure grant funds or loans.

FINANCIAL CONSIDERATIONS:

In order to fund priority projects for FY25 and the next five years, it is vital for the District to secure outside funding such as low interest, long term loans, grants as well as incorporating these projects into our five-year rate study.

Attachments: *Updated Capital Improvement Program*

Capital Improvement Plan_2024+

	ID	Project	Total Cost	Project Category	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38
1		**UPUD Capital Improvement Plan**	**$29,996,102**		**$380,630**	**$1,603,552**	**$2,518,612**	**$1,902,93**	**$2,897,90**	**$1,278,733**	**$3,676,605**	**$2,810,98**	**$1,463,350**	**$1,855,09**	**$7,577,622**	**$1,437,417**	**$1,097,170**	**$741,866**	**$1,278,244**
2		**Water Treatment Plant**	**$5,577,152**		**$25,000**	**$1,513,552**	**$720,691**	**$775,856**	**$0**	**$47,309**	**$0**	**$49,843**	**$0**	**$0**	**$0**	**$0**			
3	1A	Tules problem Cadematori removal vegetation late fall	$42,240	Climate Resilience Fire Protection Water Quality Water Use Efficiency		**$42,240**		**$44,774**		**$47,309**		**$49,843**							
4	1B	Electrical Service Upgrade at WTP	$750,312	Climate Resilience Water Quality	$25,000	**$725,312**													
5	1C	Coat & re-coat filters (3 ea)	$283,000	Climate Resilience Fire Protection Other Water Quality Water Use Efficiency		**$283,000**													
6	1D	Replace filter media and service wash	$464,000	Climate Resilience Fire Protection Other Water Quality Water Use Efficiency		**$463,000**													
7	1E	Paint / Coat Storage Tanks	$746,000	Climate Resilience Fire Protection Other Water Quality Water Use Efficiency			**$710,391**	**$731,082**											
8		*250K Tank (exterior)*	*$345,400*	*Climate Resilience Fire Protection Water Quality Water Use Efficiency*			*$355,196*												
9		*250K Tank (interior)*	*$345,400*	*Climate Resilience Fire Protection Other Water Quality Water Use Efficiency*			*$355,196*												
10		*2M Tank (exterior)*	*$345,400*	*Climate Resilience Fire Protection Other Water Quality Water Use Efficiency*				*$365,541*											
11		*2M Tank (interior)*	*$345,400*	*Climate Resilience Fire Protection Other Water Quality Water Use Efficiency*				*$365,541*											
12	1F	Backwash Project (delay until grant funding)	$1,900,000	Climate Resilience Water Quality															
13	1G	Surveillance System at WTP and Corp Yard	$10,000	Other			**$10,300**												
14		**Domestic Distribution**	**$17,511,370**		**$254,630**	**$60,000**	**$1,694,041**	**$1,066,03**	**$2,690,00**	**$914,474**	**$2,634,308**	**$2,039,03**	**$724,179**	**$742,134**	**$7,184,646**	**$778,044**			
15	2	Paint / Coat Storage Tanks		Climate Resilience Fire Protection Water Quality Water Use Efficiency			**$355,196**		**$751,773**		**$386,232**								
16		*Vallecito 100K tank (interior)*	*$345,400*	*Climate Resilience Fire Protection Water Quality Water Use Efficiency*			*$355,196*												
17		*Vallecito 100K tank (exterior)*	*$345,400*	*Climate Resilience Fire Protection Water Quality Water Use Efficiency*							*$386,232*				*6,424,557.50*				
18		*Eltringham 1M Tank (interior)*	*$345,400*	*Climate Resilience Fire Protection Other Water Quality Water Use Efficiency*					*$375,887*										
19		*Eltringham 1M Tank (exterior)*	*$345,400*	*Climate Resilience Fire Protection Water Quality Water Use Efficiency*					*$375,887*										
20	2A	Rebuild 13 ea Pressure Reducing Valve Stations, piping, valves, lids	$1,417,000	Climate Resilience Water Quality Water Use Efficiency			**$224,540**	**$231,080**	**$237,620**	**$244,160**	**$250,700**	**$385,860**							
21	2B.1	6" Pipe, Vallecito Bypass to Hwy 4 Existing Main	$79,200	Climate Resilience Water Quality Water Use Efficiency				**$83,952**											
22	2B.2	6" Pipe, Algiers Street - Church St. to Gold Street, Murphys	$110,000	Climate Resilience Water Quality Water Use Efficiency				**$116,600**											
23	2B.3	2.5" Pipe, Tanner Street, Murphys	$22,000	Climate Resilience Water Quality Water Use Efficiency			**$22,660**												
24	2C.1	8" Pipe, Coyote Dr, Sheet 5	$73,920	Climate Resilience Water Quality Water Use Efficiency															
25	2C.2	12" Pipe, N Hwy 4, Sheet 1	$107,800	Climate Resilience Water Quality Water Use Efficiency															

	ID	Project	Total Cost	Project Category	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38
26	2C.3	8" Pipe, Apple Blossom Dr, Sheet 1/2	$243,100	Climate Resilience Water Quality Water Use Efficiency															
27	2C.4	6" Pipe, S Algiers St, Sheet 3	$46,640	Climate Resilience Water Quality Water Use Efficiency															
28	2C.5	6" Pipe, Main St, Sheet 4	$66,440	Climate Resilience Water Quality Water Use Efficiency															
29	2C.6	6" Pipe, Woodland Dr, Sheet 4	$79,200	Climate Resilience Water Quality Water Use Efficiency															
30	2C.7	6" Pipe, Woodland Dr, Sheet 4	$86,680	Climate Resilience Water Quality Water Use Efficiency															
31	2C.8	6" Pipe, Watkins St, Sheet 4	$58,080	Climate Resilience Water Quality Water Use Efficiency															
32	2C.9	8" Pipe, Fair Oaks Ln / Allen Ln, Sheets 4/7	$763,620	Climate Resilience Water Quality Water Use Efficiency															
33	2C.10	8" Pipe, Green Meadow Ct, Sheet 6	$497,640	Climate Resilience Water Quality Water Use Efficiency															
34	2D.1	10" Pipe, S Hwy 4, Sheet 7	$242,880	Climate Resilience Water Quality Water Use Efficiency															
35	2D.2	10" Pipe, S Hwy 4 / Main St, Sheet 8	$1,082,620	Climate Resilience Water Quality Water Use Efficiency															
36	2D.3	10" Pipe, S Hwy 4, Sheet 9	$1,413,940	Climate Resilience Water Quality Water Use Efficiency															
37	2D.4	10" Pipe, Hwy 4 / Vallecito Bypass Rd, Sheet 10	$906,400	Climate Resilience Water Quality Water Use Efficiency															
38	2D.5	8" Pipe, Red Hill Rd / Poag Rd, Sheet 10	$1,037,300	Climate Resilience Water Quality Water Use Efficiency															
39	2D.6	8" Pipe, Church St / Angels Rd, Sheet 10	$339,020	Climate Resilience Water Quality Water Use Efficiency															
40	2D.7	10" Pipe, Hwy 4 / Main St / Church St, Sheet 10	$775,940	Climate Resilience Water Quality Water Use Efficiency															
41	2E	Replace Fire Hydrants	$5,172,750	Climate Resilience Water Use Efficiency			**$532,793**	**$548,312**	**$563,830**	**$579,348**	**$594,866**	**$610,385**	**$625,903**	**$641,421**	**$656,939**	**$672,458**			
42	2H	AMR/AMI meters & meter box (1605 ea)	$1,605,000	Climate Resilience Water Use Efficiency							**$922,875**	**$946,950**							
43	2J	Replacement of all galvanized water service lines (131 ea)	$812,200	Climate Resilience Fire Protection Water Quality Water Use Efficiency			**$83,657**	**$86,093**	**$88,530**	**$90,966**	**$93,403**	**$95,840**	**$98,276**	**$100,713**	**$103,149**	**$105,586**			
44	2K	SCADA upgrades (tank level monitoring)	$272,000	Climate Resilience Fire Protection Water Quality Water Use Efficiency					**$296,480**										
45	2L	Monge Ranch Bridge Utility Relocation		Other	$254,630														
46	2M	Water Master Plan	$200,000			**$60,000**	**$120,000**												
47		**Irrigation**	**$6,021,580**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$939,636**	**$695,492**	**$739,171**	**$1,112,96**	**$392,976**	**$659,373**	**$1,097,170**	**$741,866**	**$1,278,244**
48	3A.1	6" pipe, Church Street to Coyote Creek Road	$281,010	Climate Resilience Fire Protection Water Use Efficiency									**$340,022**						
49	3A.2	6" pipe, Coyote Creek Rd. to end of Main, Vallecito	$329,875	Climate Resilience Fire Protection Water Use Efficiency									**$399,149**						
50	3A.3	12" pipe, Carson Hill - Association Res. To Exist. 8" ACP Main	$151,525	Climate Resilience Fire Protection Water Use Efficiency								**$178,800**							
51	3A.4	12" pipe, Mosbaugh Irr. Service to PRV Station	$114,840	Climate Resilience Fire Protection Water Use Efficiency											**$145,847**				
52	3B.1	12" pipe, Main St. DF & Hwy 4 East End to Main St. DF and Hwy 4 West End	$897,550	Climate Resilience Fire Protection Water Use Efficiency										**$1,112,962**					

	ID	Project	Total Cost	Project Category	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38
53	3B.2	12" pipe, Hatcher Winery to Batten Rd	$817,075	Climate Resilience Fire Protection Water Use Efficiency							**$939,636**								
54	3C.1	12" pipe, Chlorine Building to Stephens Reservoir	$194,590	Climate Resilience Fire Protection Water Use Efficiency											**$247,129**				
55	3C.2	12" pipe, Seibel Reservoir to Penn Gulch Rd	$507,210	Climate Resilience Fire Protection Water Use Efficiency												**$659,373**			
56	3C.3	12" pipe, Penn Gulch Rd to end of Green Meadow Ct.	$720,940	Climate Resilience Fire Protection Water Use Efficiency													**$958,850**		
57	3C.4	12" pipe, End of Green Meadow Court to Hwy 4	$545,490	Climate Resilience Fire Protection Water Use Efficiency														**$741,866**	
58	3C.5	6" pipe, Angels Road, Vallecito	$68,875	Climate Resilience Fire Protection Water Use Efficiency								**$81,273**							
59	3D	Replace Fire Hydrants	$919,600	Climate Resilience Fire Protection Water Use Efficiency															**$1,278,244**
60	3E	AMR/AMI meters (104 ea)	$104,000	Climate Resilience Water Use Efficiency													**$138,320**		
61	3F	Siebel Reservoir: repair drain and outlet slide gates	$109,000	Water Quality Water Use Efficiency								**$128,620**							
62	3G	Stephens Reservoir: replace slide gate	$75,000	Climate Resilience Water Use Efficiency								**$88,500**							
63	3H	Association Reservoir: sediment removal & replace head gate valves	$185,000	Climate Resilience Water Use Efficiency								**$218,300**							
64		**Equipment**	**$627,000**		**$101,000**	**$30,000**	**$103,880**	**$61,040**	**$78,400**	**$187,450**	**$102,660**	**$26,620**	**$0**	**$0**	**$0**	**$0**			
65	4A	F550 4x4 dump bed (upgrade 1970's truck)	$98,000	Fire Protection Water Quality Water Use Efficiency			$103,880												
66	4B	F150 Pickup	$70,000	Fire Protection Water Quality Water Use Efficiency					$78,400										
67	4C	F250 / F350 full box (Utility Truck)	$89,000	Fire Protection Water Quality Water Use Efficiency	$89,000														
68	4D	Air compressor, gas/diesel (180 cfm)	$28,000	Fire Protection Water Quality Water Use Efficiency				$30,520											
69	4E	Vac Trailer	$42,000	Fire Protection Water Quality Water Use Efficiency	$12,000	$30,000													
70	4F	Bumper Pull Dump Trailer	$28,000	Fire Protection Water Quality Water Use Efficiency				$30,520											
71	4G	Mini Excavator	$163,000	Fire Protection Water Quality Water Use Efficiency						$187,450									
72	4H	Skid Steer	$87,000	Fire Protection Water Quality Water Use Efficiency							$102,660								
73	4I	Side by Side 4x4	$22,000	Fire Protection Water Quality Water Use Efficiency								$26,620							
74		**District Headquarters**	**$259,000**		**$0**	**$0**	**$0**	**$0**	**$129,500**	**$129,500**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**			
75		Roof replacement & Electrical Upgrades	$259,000.00	Climate Resilience					$129,500	$129,500									
76																			
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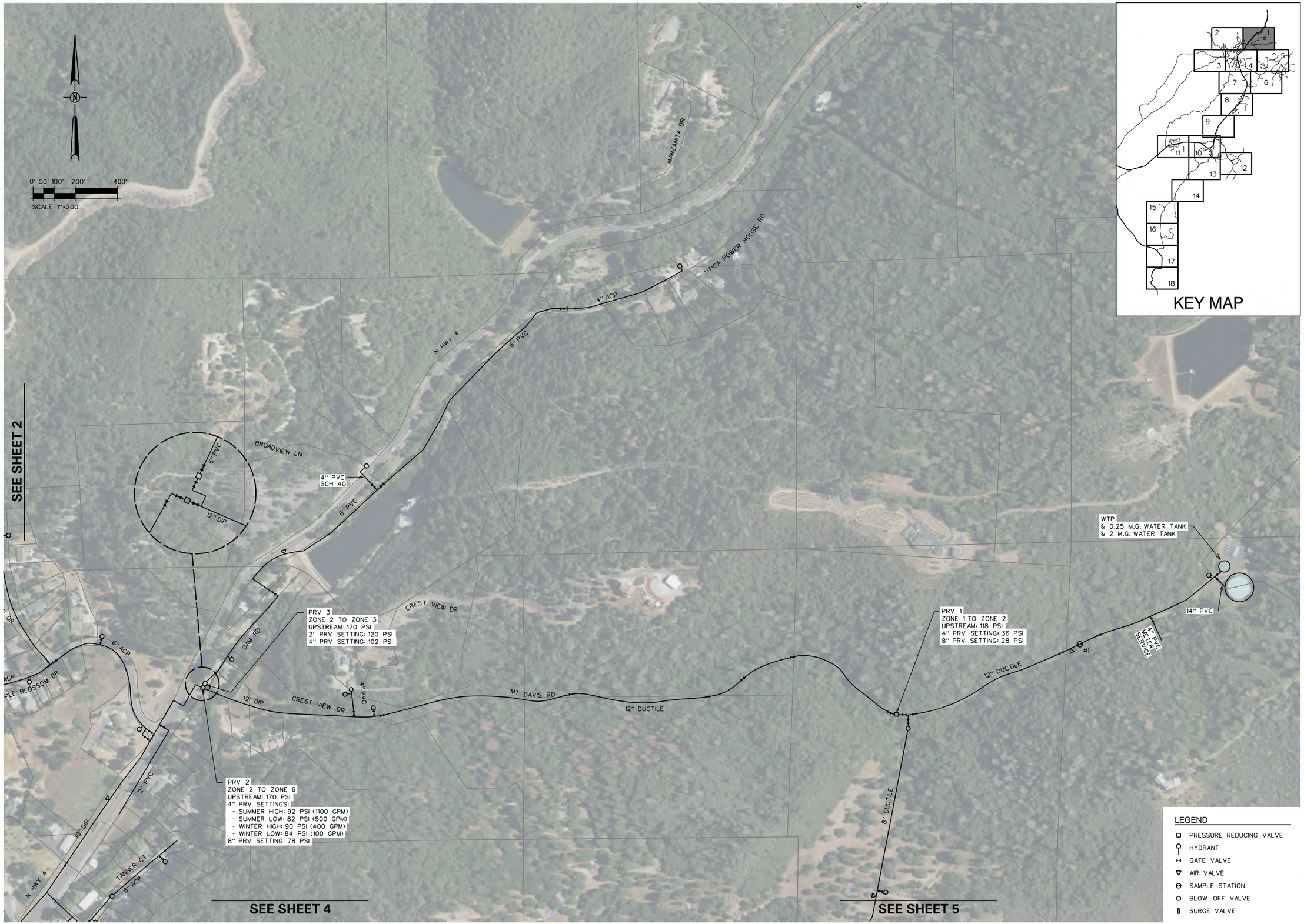
83																			

ATTACHMENT 3



REVISIONS

REV. No.	DESCRIPTION	REV. DATE	BY
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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

CALAVERAS COUNTY, CALIFORNIA

Weber, Ghio & Associates, Inc.
Professional Engineers
394 East Saint Charles
P.O. Box 251
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CIVIL - WATER RESOURCES - SURVEYING

PRJ. No.: 8800-09

DATE: 11/2019

RELEASE 3

SHEET:

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DWG: G:\8800-09 Union PUD\Exhibits\SYSTEM MAP 1.dwg
DATE: 11/20/2019

REVISIONS

REV. No.	DESCRIPTION	REV. DATE	BY

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

CALAVERAS COUNTY — CALIFORNIA

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PRJ. No.: 8800-09

DATE: 11/2019

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REVISIONS

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- SAMPLE STATION
- BLOW OFF VALVE
- SURGE VALVE

REV. No.	DESCRIPTION	REV. DATE	BY

REVISIONS

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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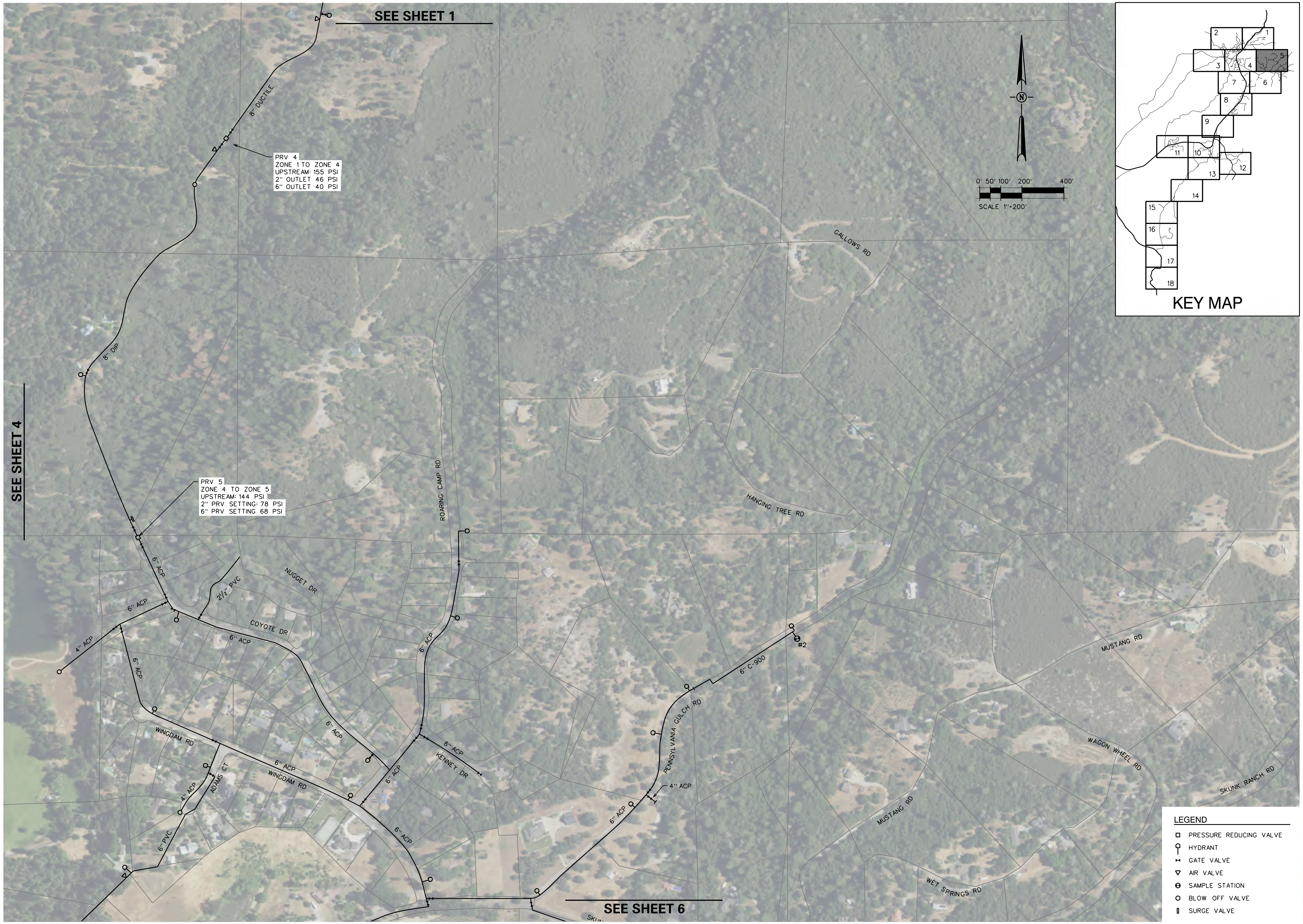
DATE: 11/2019

RELEASE 3



LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- SAMPLE STATION
- BLOW OFF VALVE
- SURGE VALVE

REVISIONS

REV. No.	DESCRIPTION	REV. DATE	BY

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT
DOMESTIC WATER DISTRIBUTION
SYSTEM MAPS
CALAVERAS COUNTY CALIFORNIA

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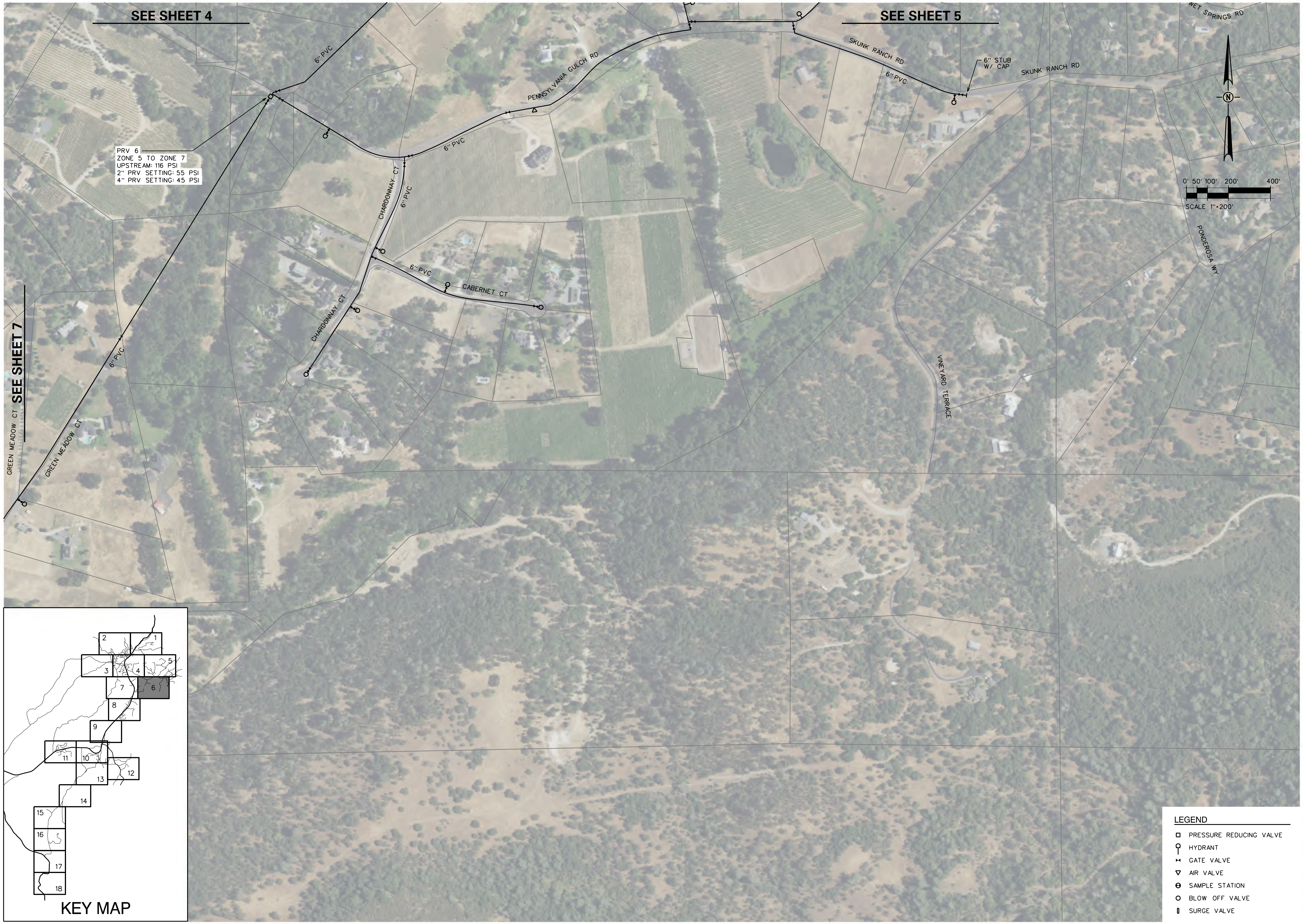

REVISIONS

REV. No.	DESCRIPTION	REV. DATE	BY

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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DATE: 11/2019

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REVISIONS			
REV. No.	DESCRIPTION	REV. DATE	BY

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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PRJ. No.: 8800-09

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION
SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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CIVIL - WATER RESOURCES - SURVEYING

PRJ. No.: 8800-09

DATE: 11/2019

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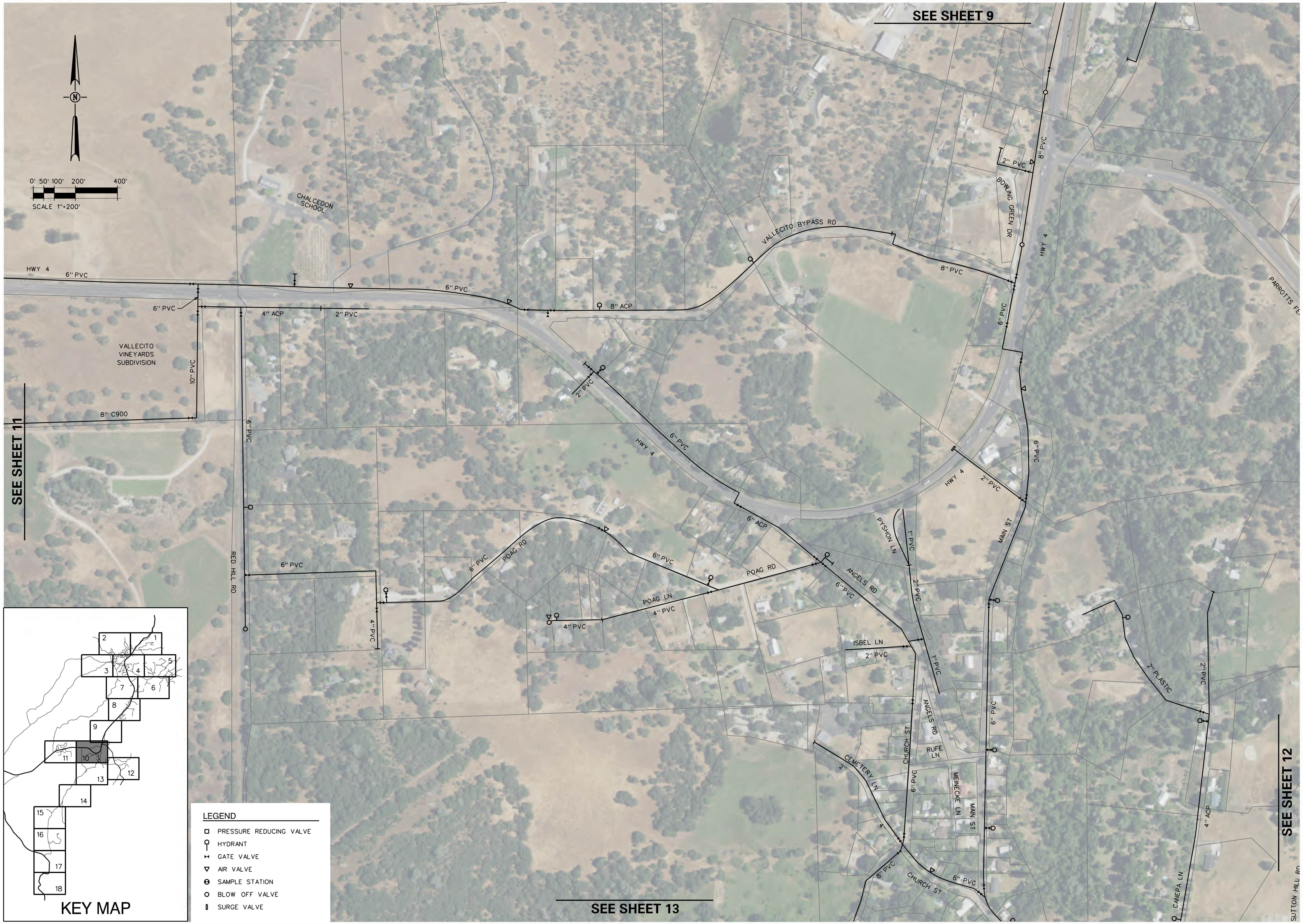
DATE: 5/29/2020
FILE: 8800-09 Union PUD\Exhibits_SYSTEM MAP 9.dgn



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REVISIONS

PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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KASL CONSULTING ENGINEERS
CIVIL - WATER RESOURCES - SURVEYING

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION
SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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CIVIL - WATER RESOURCES - SURVEYING

PRJ. No.: 8800-09
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DATE: 11/20/2019

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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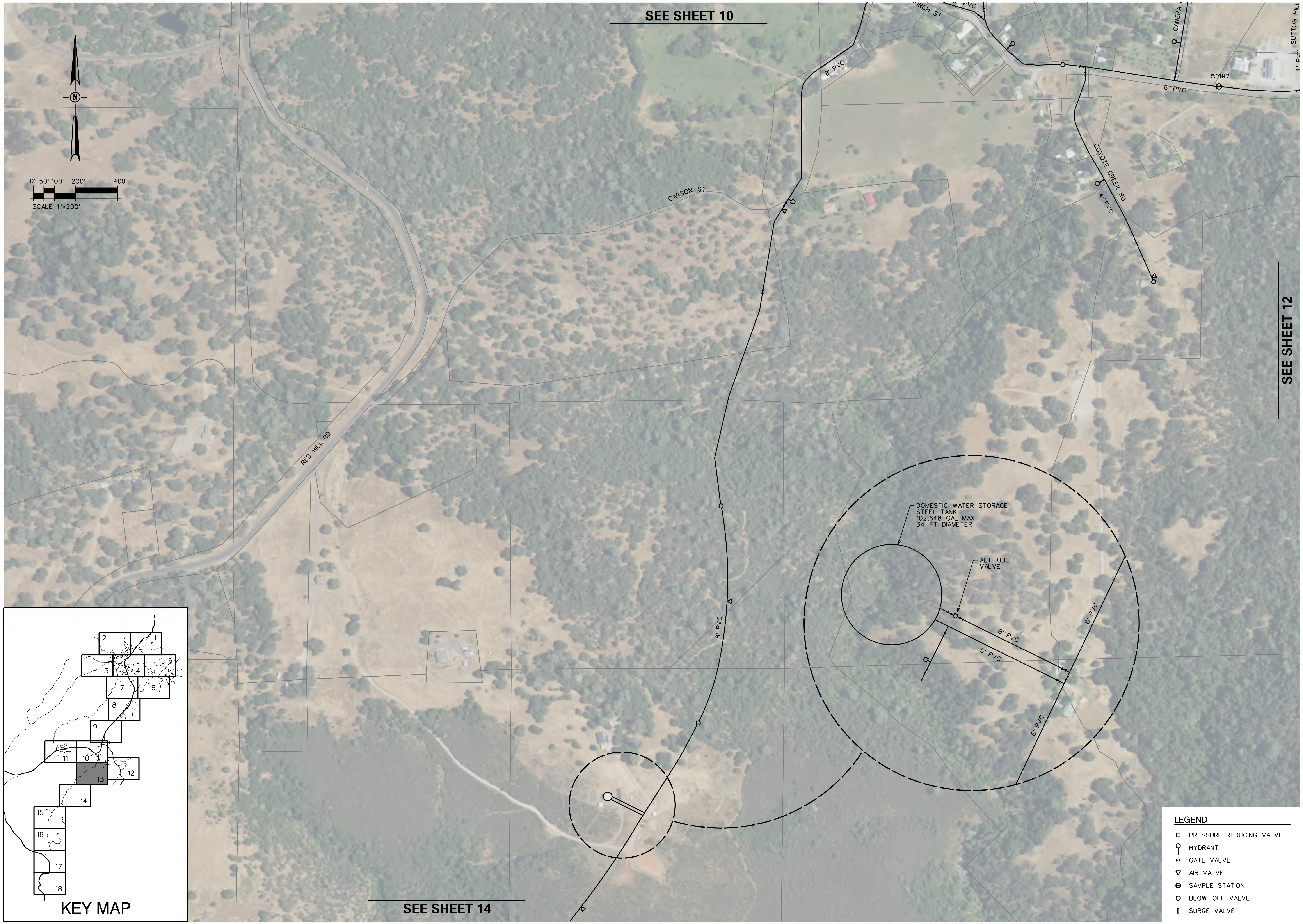

REVISIONS

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

CALAVERAS COUNTY — CALIFORNIA

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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PRJ. No.: 8800-09

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RELEASE 3

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SEE SHEET 16

HWY 49

0' 50' 100' 200' 400'

SCALE 1"=200'

#8

6"

RED HILL RD

1" PEP

2" PVC

2" PVC

6" PVC

4" PVC

4" C900 IN 10" STL CASING

2"

EP

6" C900

1" SERVICE

4" C900

KEY MAP

SEE SHEET 18

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- SAMPLE STATION
- BLOW OFF VALVE
- SURGE VALVE

REVISIONS

REV. No.	DESCRIPTION	REV. DATE	BY
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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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PRJ. No.: 8800-09

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PROJECT NAME:
UNION PUBLIC UTILITIES DISTRICT

DOMESTIC WATER DISTRIBUTION SYSTEM MAPS

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CIVIL - WATER RESOURCES - SURVEYING

PRJ. No.: 8800-09

DATE: 11/2019

RELEASE 3

SHEET:

ATTACHMENT 4

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1			
2			
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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

Weber, Ghio & Associates, Inc.
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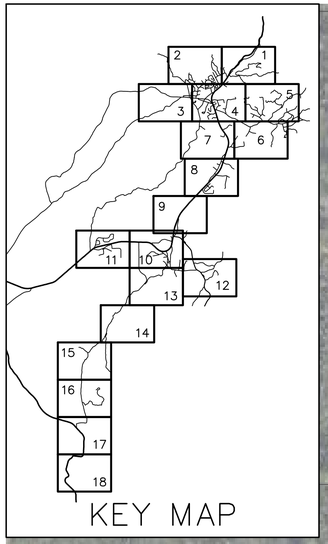
PRJ. No.: 102

DATE: 7/2021

RELEASE 3

SHEET:

1 of 18



KEY MAP

REVISIONS			
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6			

PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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SAN ANDREAS, CALIFORNIA 95249

PRJ. No.: 102

DATE: 7/2021

RELEASE 3

SHEET:

2 of 18

SEE SHEET 2

0' 50' 100' 200' 400'

SCALE 1"=200'

FRENCH GULCH RD

2" BLOW-OFF
END OF LINE

1" SERVICE

1" SERVICE

2" PVC INSIDE OLD
4" WSP FROM MAIN
STREET TO SERVICE
1" SERVICE

CHURCH ST

6" C-900
CL 150

6" PVC

6" PVC

1-1/2" SERVICE
2" C.T.S. P.E.P.
UNDER ROAD

4" SERVICE

SHEEP RANCH RD

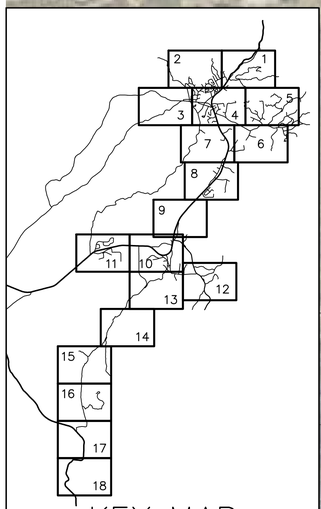
N ALGERS

S ALGERS ST

MURPHYS GRADE RD

SEE SHEET 4

KEY MAP



LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

REVISIONS			
REV. No.	DESCRIPTION	REV. DATE	BY
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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY

CALIFORNIA

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PRJ. No.: 102

DATE: 7/2021

RELEASE 3

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SEE SHEET 2

SEE SHEET 1

SEE SHEET 3

SEE SHEET 5

SEE SHEET 7

SEE SHEET 6

ROCKY HILL RD
N ALGIERS ST
BRET HARTE DR
STONE RIDGE CT
FIELDSTONE DR
TANNER ST
COTTAGE CR
EMERALD CREEK DR
MURPHYS CREEK RD
N HWY 4
14" C900
2" SERVICE W/ 2" GV
6" GVs FLGxFLG
12"x12"x6" FLG. TEE
12"x12"x6" FLG. TEE
12" GV
GOLD ST
SUNNY OAK CT
SURREY LN
SURREY CT
CREEKVIEW DR
10" PVC
CONNECTION TO BOX CULVERT
24" STEEL ENCASEMENT
8" PVC INSIDE OLD 12" WSP THIS AREA
TOM BELL
JOAQUIN MURIETA
THREE FINGERED JACK
SHEET IRON JACK
DUTCH KATE
BLACK BART
BIG TREES RD 12" PVC
CHURCH ST
CHURCH
1" SERVICE
6" PVC
MAIN ST
JONES ST
S ALGIERS ST
1-1/2" SERVICE
1" SERVICE
5/8"x3/4" SERVICE
SCOTT ST
BURROWS LN
2" SERVICE
3" SERVICE
SIX MILE RD
8" PVC
S HWY 4
MITCHLER AV
LAWRENCE ST
ERNEST
ARDEN AV
CRIDER LN
WATKINS ST
SCHOOL ST
SUNNY HILLS LN
WOODLAND DR
PENNSYLVANIA GULCH RD
ALLEN CT
ALLEN LN
SMITH RD
SOUTH DITCH 21" P.I.P.
18" ACP SEWER LOW HEAD
40' OF 21" PIP
OPEN STREAM TO SEIBEL RES.
SIEBEL RESERVOIR 15 ACRE FT ±
12" WSP
12" GV CONNECTED WITH 12" PVC C-900 20'± TRANSITION COMPS BACK TO 12" WSP

KEY MAP

0' 50' 100' 200' 400'
SCALE 1"=200'

LEGEND
- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

REVISIONS

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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

Weber, Ghio & Associates, Inc.
Professional Engineers
394 East Saint Charles
P.O. Box 251
SAN ANDREAS, CALIFORNIA 95249

PRJ. No.: 102

DATE: 7/2021

RELEASE 3

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SEE SHEET 1

SEE SHEET 4

SEE SHEET 6

GALLOWS RD

HANGING TREE RD

ROARING CAMP RD

NUGGET DR

COYOTE DR

WINGDAM RD

ADAMS CT

KENNEY DR

PENNSYLVANIA GULCH RD

MUSTANG RD

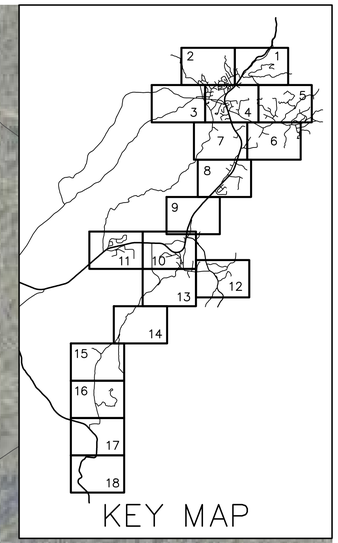
WET SPRINGS RD

12" WSP

400' OF 12" C-900
REPLACED IN 2016

MAIN LINE METER
INSTALLED IN 2016

0' 50' 100' 200' 400'
SCALE 1"=200'



KEY MAP

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
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- AIR VALVE
- BLOW OFF VALVE

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IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY, CALIFORNIA

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SEE SHEET 4

SEE SHEET 5

SEE SHEET 7

WET SPRINGS RD

SKUNK RANCH RD

SKUNK RANCH RD

PENNSYLVANIA GULCH RD

CHARBONNAY CT

CHARBONNAY CT

CABERNET CT

VINEYARD TERRACE

PONDEROSA WY

GREEN MEADOW CT

GREEN MEADOW CT

12" WSP

12" WSP

(2) 1-1/2" SERVICES
ONE FROST PROTECTION
SPRING ONLY

1" SERVICE

1" SERVICE

1" SERVICE

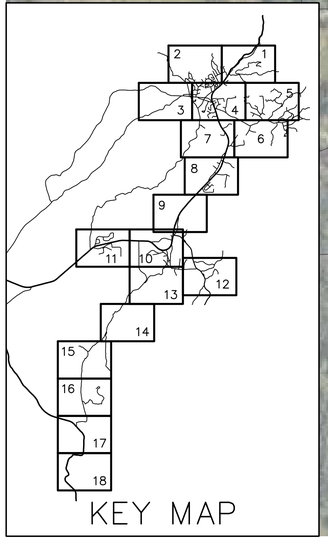
1" SERVICE

1-1/2" SERVICE

5/8"x3/4" SERVICE

0' 50' 100' 200' 400'

SCALE 1"=200'



KEY MAP

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

Plot Aug 02, 2021 at 2:03pm M:\Projects\UPUD\102\ASBUILTS-irrigation\rrig System Maps_SHEET SET\Sheet 6.dwg

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PROJECT NAME:
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IRRIGATION SYSTEM MAPS

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SEE SHEET 4

N

0' 50' 100' 200' 400'

SCALE 1"=200'

8" PVC

FAIR OAKS LN

1" AUTO AIR-VAC VALVE

8" C-900 CL 150 PVC

6" PVC

2" SERVICE

KAUTZ 4" SERVICE

6" ACP

MSD 2" SERVICE

8" PVC

S HWY 4

NORTH DITCH SYSTEM 6" ACP

ANNEY CT

5/8"x3/4" SERVICE

5/8"x3/4" SERVICE

1" SERVICE

1" SERVICE

S HWY 4

6" ACP

QUAIL TL

2" SERVICE

GREEN MEADOW CT

SIX MILE RD

2" IRRIG ADJACENT TO 6" DIP(?)

12" PVC C-900 CL150

NORTH DITCH SYSTEM

6" DIP

1-1/2" SERVICE

S HWY 4

SOUTH DITCH SYSTEM

1-1/2" PRV & 4" PRV IN CONC VAULT VALVE(S) CLOSED

45^ FITTING

6" DIP

12" C-900 CL 150

1-1/2" SERVICE

2" IRRIG ADJACENT TO 6" DIP

1-1/2" SERVICE

12" MJP

11-1/4^ FITTING MJxMJ

1-1/2" SERVICE

12" C-900 CL150 IN 18" X 110' CMP

END OF NORTH DITCH SYSTEM IS CONNECTED TO SOUTH DITCH SYSTEM NORMALLY VALVE OFF

MAIN ST

12" PVC

1-1/2" SERVICE

SEE SHEET 6

SEE SHEET 8

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

KEY MAP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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SEE SHEET 7

0' 50' 100' 200' 400'

SCALE 1"=200'

1" SERVICE

12" PVC

ANSIL DAVIS RD

S HWY 4

FAIRS LN

MAIN ST

1" SERVICE

5/8"x3/4" SERVICE

1" SERVICE

5/8"x3/4" SERVICE

12" PVC

MAIN ST

1-1/2" SERVICE

4" PVC

1-1/2" SERVICE

MONGE RANCH RD

6" C-900 CL150

1-1/2" SERVICE

1" SERVICE

1-1/2" SERVICE

1" SERVICE

MAIN ST 12" PVC

S HWY 4

12" PVC
INSIDE 18" CMP
CASING

THOMPSON RD

LIVE OAK CT

IRON WOOD CT

LIVE OAK DR

12" PVC S HWY 4

SUGAR PINE WY

1" SERVICE

HOLIDAY MINE RD

1-1/2" SERVICE

1-1/2" SERVICE

6" CASING 104' CMP
ENDS 36' FROM FENCE
IRISH 1-1/2" SERVICE

12" PVC
(2011)

1-1/2" SERVICE

SEE SHEET 9

KEY MAP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

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PROJECT NAME:
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IRRIGATION SYSTEM MAPS

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RELEASE 3

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SEE SHEET 9

SEE SHEET 11

SEE SHEET 12

SEE SHEET 13

0' 50' 100' 200' 400'

SCALE 1"=200'

CHALCEDON SCHOOL

HWY 4

VALLECITO BYPASS RD

BOWLING GREEN DR

PARROTTS FERRY RD

RED HILL RD

POAG RD

POAG LN

ANGELS RD

MAIN ST

CHURCH ST

ISBEL LN

RUFE LN

MENECKE LN

CEMETERY LN

PYSHON LN

12" C-900

6" C-900

6" PVC

4" PVC

4" PVC IN 6" WSP CASING

12" TRANSITE ACP

12" ACP

6" WSP

4" ACP

4" PVC

1" SERVICE

1-1/2" SERVICE

2" SERVICE

3" SERVICE

5/8" SERVICE

5/8"x3/4" SERVICE

2" GV

1" SERVICES

2" SCH 40 PVC CROSSING

12" WSP

6" ACP

2-1/2" PVC PRIVATE LINE

2-1/2" PVC

3" SERVICE METER 2" PVC FEED LINE

IRRIGATION SEASON JULY, AUG, SEPT.
OPEN NO PRESSURE REDUCING

PRESSURE REDUCING VALVE
(78-120 PSI)
150 775 PSI
ALL NEW G-VALVES
TEE'S 1997
FITTINGS, REBUILT PRV

KEY MAP

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION
SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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PROJECT NAME:
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IRRIGATION SYSTEM MAPS

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PROJECT NAME:
UNION PUBLIC UTILITY DISTRICT

IRRIGATION SYSTEM MAPS

CALAVERAS COUNTY CALIFORNIA

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SEE SHEET 10

3" SERVICE METER
2" PVC FEED LINE

CHURCH ST

6" WSP

CANEPA LN

SUTTON H

2" SERVICE

6" WSP

8" 12" PVC

3" SERVICE

1" SERVICE

8" ACP

2-1/2" PVC

COYOTE CREEK RD

PRIVATE LINE

8" GV

CARSON ST

8"x8"x6" TEE

8" ACP
IN OLD SD

SEE SHEET 12

RED HILL RD

8" ACP

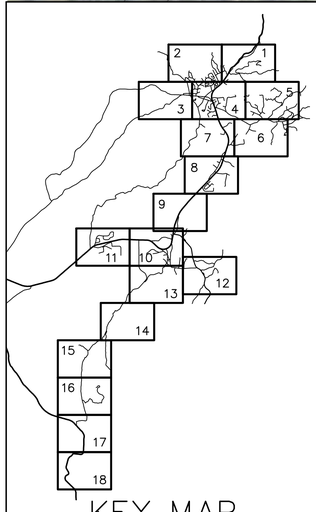
8" ACP

SEE SHEET 14

0' 50' 100' 200' 400'

SCALE 1"=200'

KEY MAP



LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

REVISIONS			
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PROJECT NAME:
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IRRIGATION
SYSTEM MAPS

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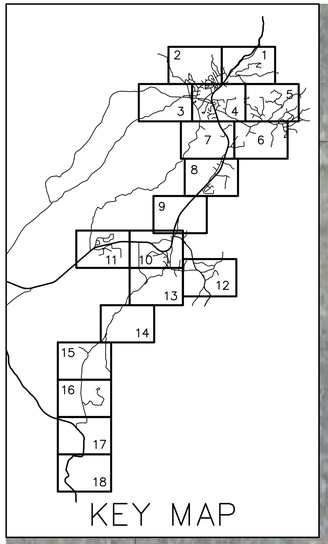

KEY MAP

SEE SHEET 13

RED HILL RD

2" BO

8" ACP

8" ACP

RED HILL RD

8" ACP

8" ACP

(3) 3/4" SERVICES

8" ACP IRR LINE

SEE SHEET 15

N

0' 50' 100' 200' 400'

SCALE 1"=200'

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

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PROJECT NAME:
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IRRIGATION SYSTEM MAPS

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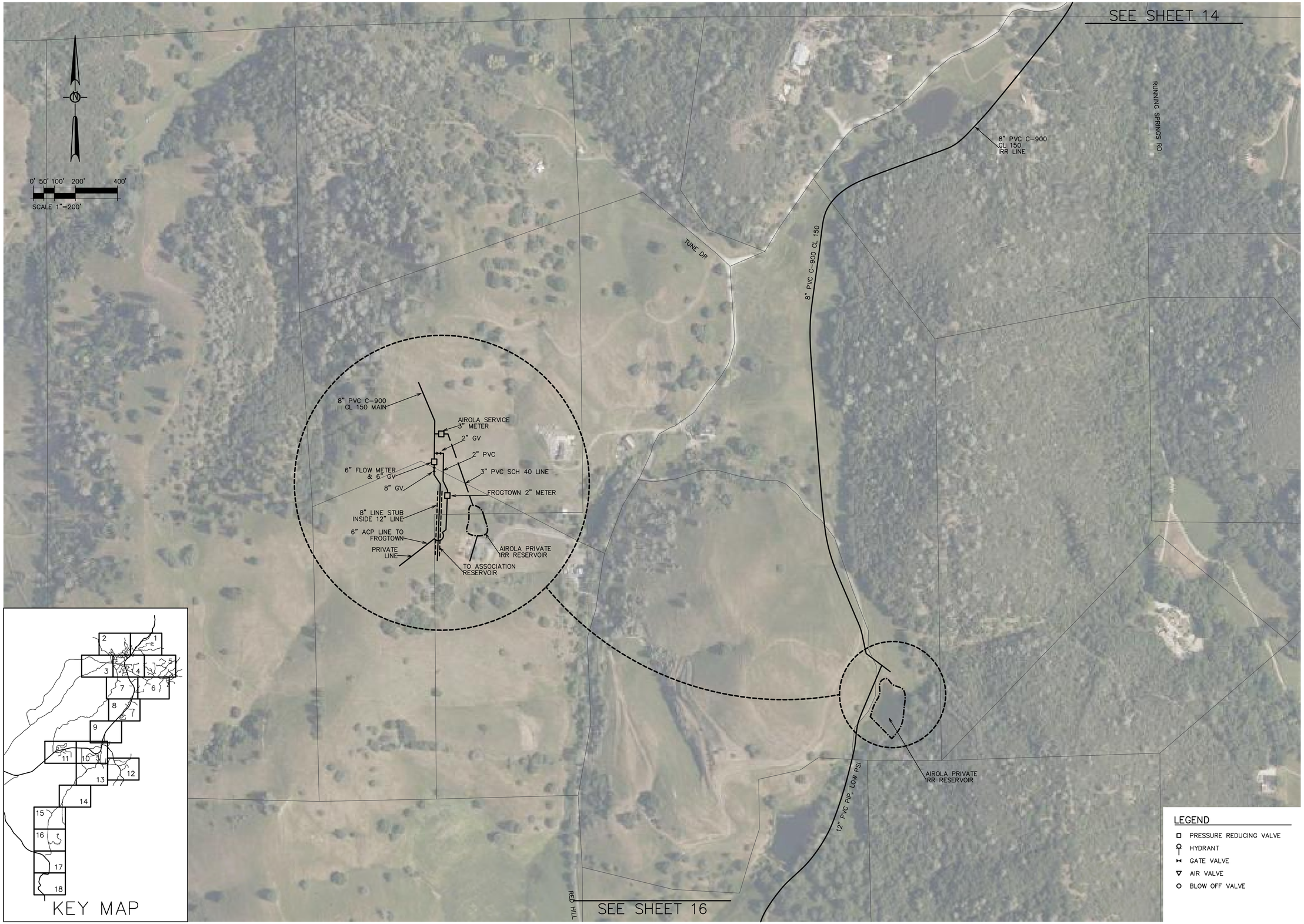

Plot Aug 02, 2021 at 2:11pm M:\Projects\UPUD\102\ASBUILTS-irrigation\rrig System Maps_SHEET SET\Sheet 15.dwg

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SEE SHEET 15

RED HILL RD

N

0' 50' 100' 200' 400'

SCALE 1"=200'

2" BO

8" GV & 8" DRAIN LINE

12" WSP

8" ACP

25' 12" C-900 CL150 & 12" GV

ASSOCIATION RESERVOIR WL 1675

ASSOCIATION RESERVOIR

1-1/2" SERVICE

8" ACP

RED HILL RD

SEE SHEET 17

KEY MAP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

REVISIONS

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SEE SHEET 16

HWY 49

N

0' 50' 100' 200' 400'

SCALE 1"=200'

2" SERVICE

2" PVC INSIDE 4" STEEL CASING & 2" VALVE

PRV STATION 133/56

RED HILL RD

8" ACP

6" ACP

4" ACP

CAPPED 4" IRR LINE

SEE SHEET 18

KEY MAP

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

LEGEND

- PRESSURE REDUCING VALVE
- HYDRANT
- GATE VALVE
- AIR VALVE
- BLOW OFF VALVE

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ATTACHMENT 5

WaterCAD model provided upon request