RESOLUTION NO. 2019-03
RESOLUTION NO. PFA-03
ORDINANCE NO. 2019–01

AGENDA

MISSION STATEMENT

"Our team is dedicated to protecting, enhancing, and developing our rich water resources to the highest beneficial use for Calaveras County, while maintaining cost-conscious, reliable service, and our quality of life, through responsible management."

Regular Board Meeting
Wednesday, January 23, 2019
1:00 p.m.

Calaveras County Water District
120 Toma Court, (PO Box 846)
San Andreas, California 95249

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Administration Office at 209-754-3028. Notification in advance of the meeting will enable CCWD to make reasonable arrangements to ensure accessibility to this meeting. Any documents that are made available to the Board before or at the meeting, not privileged or otherwise protected from disclosure, and related to agenda items, will be made available at CCWD for review by the public.

ORDER OF BUSINESS

CALL TO ORDER / PLEDGE OF ALLEGIANCE

1. ROLL CALL

2. PUBLIC COMMENT

At this time, members of the public may address the Board on any non-agendized item. The public is encouraged to work through staff to place items on the agenda for Board consideration. No action can be taken on matters not listed on the agenda. Comments are limited to three minutes per person.

3. CONSENT AGENDA

The following items are expected to be routine / non-controversial. Items will be acted upon by the Board at one time without discussion. Any Board member may request that any item be removed for later discussion.

3a Approval of Minutes for the Board Meeting of December 5, 2018.

3b Ratify Claim Summary #562 Secretarial Fund in the Amount of $1,709,583.47 for December 2018.
(Jeffrey Meyer, Interim General Manager) **RES 2019-_____**

3c Information / Quarterly Projects Report
(Charles Palmer, District Engineer)

4. NEW BUSINESS

4a Discussion / Direction of the FY 2018-19 Second Quarter Investment Report
(Jeffrey Meyer, Director of Administrative Services)

4b Discussion / Action Adopting District Financial Management Policy – No. 5.13, Financial Audit Policy
(Jeffrey Meyer, Interim General Manager) **RES 2019-_____**

4c Discussion / Action Regarding FY 2018-19 Mid-Year Budget Review and Budget Adjustments
(Jeffrey Meyer, Interim General Manager) **RES 2019-_____**

4d Update on Grants Program
(Joel Metzger, Manager of External Affairs, Conservation, and Grants)

5. OLD BUSINESS

5a Discussion / Action Regarding Adoption of the West Point Master Plan
(Peter Martin, Water Resources Manager) **RES 2019-_____**

5b* Update on Sustainable Groundwater Management Act (SGMA)
(Peter Martin, Water Resources Manager)

6.* GENERAL MANAGER REPORT

7.* BOARD REPORTS / INFORMATION / FUTURE AGENDA ITEMS

8. NEXT BOARD MEETINGS

- Wednesday, February 13, 2019, 1:00 p.m., Regular Board Meeting
- Wednesday, February 27, 2019, 1:00 p.m., Regular Board Meeting

9. CLOSED SESSION

9a Conference with Legal Counsel – Existing Litigation
Government Code § 54956.9(a) La Contenta Investors, LTD vs. CCWD (Calaveras County Superior Court #11CV37713)

9b Conference with legal counsel – anticipated litigation. Significant exposure to litigation pursuant to subdivision (d)(2) of Government Code section 54956.9. Two potential cases.

9c Conference with legal counsel pending litigation-Government Code Section 54956.9(d)(1)-Local 1021 SEIU and Management and Confidential Unit.

10. REPORTABLE ACTION FROM CLOSED SESSION

11. ADJOURNMENT

CALAVERAS COUNTY WATER DISTRICT

Board of Directors

District 1	Scott Ratterman
District 2	Cindy Secada
District 3	Bertha Underhill
District 4	Russ Thomas
District 5	Jeff Davidson

Legal Counsel

Matthew Weber, Esq.
Downey Brand, LLP

Financial Services

Umpqua Bank
US Bank
Wells Fargo Bank

Auditor

Richardson & Company, LLP

CCWD Committees	Membership**
*Engineering Committee	Davidson / Thomas (alt. Secada)
*Finance Committee	Underhill / Secada (alt. Thomas)
*Legal Affairs Committee	Davidson / Thomas (alt. Ratterman)
Executive Committee *(ad hoc)*	Thomas / Underhill

Joint Power Authorities

ACWA / JPIA	Ratterman (alt. General Manager)
CCWD Public Financing Authority	All Board Members
Calaveras-Amador Mokelumne River Authority (CAMRA)	Ratterman / Underhill (alt. Secada)
Calaveras Public Power Agency (CPPA)	Peter Martin (alt. General Manager)
Eastern San Joaquin Groundwater Authority	Thomas
Tuolumne-Stanislaus Integrated Regional Water Management Joint Powers Authority (T-Stan JPA)	Secada (alt. Thomas)
Upper Mokelumne River Watershed Authority (UMRWA)	Davidson (alt. Ratterman)

Other Regional Organizations of Note

Calaveras LAFCO	Ratterman / Thomas
Calaveras County Parks and Recreation Committee	Thomas (alt. Ratterman)
Highway 4 Corridor Working Group	Thomas / Underhill
Mountain Counties Water Resources Association (MCWRA)	All Board Members
Mokelumne River Association (MRA)	All Board Members
Tuolumne-Stanislaus Integrated Regional Water Mgt. JPA Watershed Advisory Committee (WAC)	Peter Martin (alt. Metzger)
Eastern San Joaquin Groundwater Authority-Technical Advisory Committee	Peter Martin

* Standing committees, meetings of which require agendas & public notice 72 hours in advance of meeting.
** The 1st name listed is the committee chairperson.

RESOLUTION NO. 2018-64
RESOLUTION NO. PFA-03
ORDINANCE NO. 2018–02

MINUTES

CALAVERAS COUNTY WATER DISTRICT
SPECIAL BOARD MEETING

DECEMBER 5, 2018

Directors Present: Scott Ratterman, President
Russ Thomas, Vice President
Terry Strange, Director
Bertha Underhill, Director
Jeff Davidson, Director

Staff Present: Jeffrey Meyer, Interim General Manager
Rebecca Hitchcock, Clerk of the Board
Matt Weber, General Counsel
Peter Martin, Manager of Water Resources
Damon Wyckoff, Director of Operations
Robert Creamer, Engineering Analyst
Joel Metzger, Manager of External Affairs, Conservation, and Grants

Others Present: Dennis Mills
Vickey Mills
Elaine St. John

ORDER OF BUSINESS

CALL TO ORDER / PLEDGE OF ALLEGIANCE

1. ROLL CALL

President Ratterman called the Regular Board Meeting to order at 11:00 a.m. and led the pledge of allegiance. Director Strange was absent.

2. PUBLIC COMMENT

Supervisor Dennis Mills addressed the Board about a series of meetings he has been attending, and hopes the meetings can benefit the County as well as CCWD.

3. CONSENT AGENDA

3a Review Board of Directors Monthly Time Sheets for November, 2018

MOTION: Directors Davidson / Underhill – Approved Consent Agenda Item 3a as presented

AYES: Directors Davidson, Underhill, Thomas, and Ratterman
NOES: None
ABSTAIN: None
ABSENT: Director Strange

The order of presentation did not adhere to the agenda.

Director Strange arrived at 11:28 a.m.

4. NEW BUSINESS

4a Discussion / Action Regarding Adoption of the Customer Assistance Program (Joel Metzger, Manager of External Affairs, Conservation, and Grants)

RES 2018-64

MOTION: Directors Strange / Davidson approved Adoption of the Customer Assistance Program with three modifications; 1) The program would start on Jan 2nd instead of Jan 1st; 2) Two lock-offs instead of one for non-payment would eliminate the customer from the program; 3) Two payments in arrears for sewer customers would eliminate the customer from the program.

DISCUSSION: Mr. Metzger presented the highlights of the proposed Customer Assistance Policy. He highlighted that the Board had requested the launch date change from July 1, 2019 to Jan 1, 2019. The program would offer credits to 200 water and 200 wastewater customers on a first-come first-served basis. The PG&E Care Program would be the main qualifier or customers could have their income verified by The Resource Connection. There was significant discussion between the Board and Mr. Metzger on the specifics of the proposed policy.

AYES: Directors Strange, Davidson, Underhill, Thomas, and Ratterman
NOES: None
ABSTAIN: None
ABSENT: None

PUBLIC COMMENT: Vickey Mills stated that the policy should say The Resource Connection instead of the Resource Connection. She also asked how sewer customers would become ineligible for non-payment since they do not have a lock-off. In addition, she does not like the first-come first-served policy.

4b Discussion / Action Regarding Amending the FY 2018-19 Budget for the Customer Assistance Program (Jeffrey Meyer, Interim General Manager)

RES 2018-65

MOTION: Directors Strange / Underhill – Amended the FY 2018-19 Budget for the Customer Assistance Program

DISCUSSION: Mr. Meyer presented the Amendment to the FY 2018-19 Budget for the amount of $30,000 from the Special Project Fund to the Customer Assistance Program. Director Davidson

advised he would vote no on the Budget adjustment because he felt the program should start with the new budget as originally planned.

AYES: Directors Strange, Underhill, Thomas, and Ratterman
NOES: Director Davidson
ABSTAIN: None
ABSENT: None

PUBLIC COMMENT: There was no public comment.

4c* Discussion / Action Regarding Resolution of Appreciation to Director Strange for his Service as CCWD Board Director
(Scott Ratterman, Board President) **RES 2018-66**

MOTION: Directors Davidson / Thomas – Adopted the Resolution of Appreciation to Director Strange for his service as CCWD Director

DISCUSSION: Each of the Directors took a moment to thank Director Strange for his time at the District.

AYES: Directors Davidson, Thomas, Underhill, Strange, and Ratterman
NOES: None
ABSTAIN: None
ABSENT: None

PUBLIC COMMENT: Members of the public gave appreciation to Director Strange for his service to the District

4. INTERIM GENERAL MANAGER REPORT

Mr. Meyer had nothing to report.

5. BOARD REPORTS / INFORMATION / FUTURE AGENDA ITEMS

Director Strange mentioned that he spoke about the new Customer Assistance Program to the Tuolumne-Stanislaus Integrated Regional Water Management JPA and they might look into putting something in place as well. He also said that Cindy Secada would be an outstanding replacement for Division 2.

Director Davidson had nothing to report.

Director Underhill mentioned that there was over a foot of snow in Ebbetts Pass yesterday.

Director Thomas attended the ACWA Conference in San Diego. He stated that the conferences are a very good education. He also attended a de-salinization plant tour while in Southern California. He added that the Engineering Committee met yesterday and spoke more on fire sprinklers.

Director Ratterman reported that the Finance Committee is upcoming on December 18, and CAMRA will be on December 19.

6. NEXT BOARD MEETINGS

- Wednesday, December 12, 2018, 1:00 p.m., Regular Board Meeting
- Monday, December 17, 2018, 1:00 p.m., Special Board Meeting

The Open Session ended at 11:13 a.m.

The meeting adjourned into Closed Session at approximately 11:13 a.m. Those present were Board Members: Russ Thomas, Bertha Underhill, Scott Ratterman, and Jeff Davidson; staff members Jeffrey Meyer, Interim General Manage; Stacey Lollar, Director of Human Resources and Customer Service; and Matt Weber, General Counsel. Director Strange arrived to Closed Session about 11:28 a.m.

7. CLOSED SESSION

7a Potential litigation Government Code Section 54956.9(d)(2)(4)- 1 case.

8. REPORTABLE ACTION FROM CLOSED SESSION

The Board reconvened into Open Session at approximately 12:00 p.m. There was no reportable action.

9. ADJOURNMENT

With no further business, the meeting adjourned at approximately 1:00 p.m.

By:	ATTEST:
_____	_____
Jeffrey Meyer Interim General Manager	Rebecca Hitchcock Clerk to the Board

Calaveras County Water District
Claim Summary # 562

Certificate of Administrative Officer

The services listed on the within schedules were actually rendered by the close of the current month. The articles listed on the schedules within and the supporting invoices were actually delivered, or payment therefore is properly due prior to delivery. To the best of my knowledge all claims made are in accordance with adopted Board policies and/or other Board actions and are in compliance with all applicable laws. The claimants named on the within schedules are each entitled to the amount set opposite their respective names.

Jeffrey Meyer
Interim General Manager

1.	December 2018 payroll checks issued on 12/14/2018	156,633.51
2.	December 2018 payroll checks issued on 12/31/2018	171,023.70
3.	December 2018 compensation to Directors	2,445.34
4.	Vendor payments for December 1 through 31, 2018	1,111,321.39
5.	Other payroll related costs	268,159.53
	Claim Summary Total	**$1,709,583.47**

Calaveras County Water District
AP Disbursement Summary
December 1-31, 2018

CCWD Operating Expenditures		$ 669,668.22
Expenditures to be reimbursed from other agencies	(A)	43,065.68
Expenditures to be reimbursed from grant agreements	(B)	171,394.10
Fiduciary Payments (funds collected prior to expenditure)	(C)	4,805.00
Partial Reimbursement	(D)	183,316.17
Capital R&R Projects	(E)	39,072.22
Capital Outlay	(F)	-
Total Payments		$ 1,111,321.39

CCWD
AP Disbursements
December 1-31, 2018

Check No.	Vendor/Employee	Transaction Description	Date	Amount	
131374	A T & T	Leased Lines 12/18	12/13/2018	66.07	
131375	A T & T	Internet Service 12/18 LC	12/13/2018	49.25	
131376	A T & T CALNET2	District Radio Tower 11/18 - Camp Connell	12/13/2018	375.20	
131436	A T & T CALNET3	Phone 12/18 - Dorrington P/S	12/21/2018	20.73	
131437	A T & T CALNET3	Phone 12/18 - District Wide	12/21/2018	1,259.61	
131438	A T & T CALNET3	Phone 12/18 - OP HQ Back Up	12/21/2018	192.59	
131439	A T & T CALNET3	T Line 12/18	12/21/2018	164.68	
131280	A T & T MOBILITY	Cell Phone 11/18 - Brown	12/07/2018	83.86	
131281	ACWA/JPIA	Dental Insurance, Employees 01/19	12/07/2018	6,211.12	(D)
131281	ACWA/JPIA	Vision Insurance, Employees 01/19	12/07/2018	1,262.08	
131281	ACWA/JPIA	EAP 01/19	12/07/2018	148.05	
131281	ACWA/JPIA	Dental Insurance, Retirees 01/19	12/07/2018	2,744.68	
131281	ACWA/JPIA	Vision Insurance, Retirees 01/19	12/07/2018	779.52	
131282	ADP INC	Payroll Services 11/18	12/07/2018	346.71	
131283	AFLAC	Aflac Insurance 11/18	12/07/2018	2,018.70	(C)
131284	ALHAMBRA DRINKING WATER	Water Cooler Service 11/18 - LCWWTP	12/07/2018	55.23	
131285	ALHAMBRA DRINKING WATER	Water Cooler Service 11/18 - JLWTP	12/07/2018	90.13	
131377	AL'S TIRE SERVICE	Winter Tires (4) - Vehicle #720	12/13/2018	1,307.85	
131440	AL'S TIRE SERVICE	Seasonal Tire Change - Vehicle #529	12/21/2018	60.00	
131378	AMERIPRIDE SERVICES,INC	Uniform Laundry Service 11/18	12/13/2018	2,978.02	
131441	ANGELS HEATING AND AIR CONDITIONING	Repair A/C & Heating Unit - CC L/S #22	12/21/2018	136.00	
EFT	ANTHEM-BLUE CROSS	Health Insurance, Employees 12/18	12/05/2018	103,336.76	(D)
EFT	ANTHEM-BLUE CROSS	Health Insurance, Retirees 12/18	12/05/2018	40,333.16	
131379	ARNOLD AUTO SUPPLY	Pump Motor/Solenoid - Vehicle #122	12/13/2018	336.00	
131379	ARNOLD AUTO SUPPLY	Diesel Engine Fluid - Vehicle #135	12/13/2018	32.15	
131379	ARNOLD AUTO SUPPLY	Battery Cleaner - Vehicle #143	12/13/2018	10.70	
131379	ARNOLD AUTO SUPPLY	Hitch Pins/Ratchet Straps - Vehicle #531	12/13/2018	71.80	
131379	ARNOLD AUTO SUPPLY	Tie Downs/Glass Treatment/Wiper Fluid - Vehicle #717	12/13/2018	86.81	
131379	ARNOLD AUTO SUPPLY	Rope Ties/Wiper Blades - Vehicle #721	12/13/2018	64.27	
131379	ARNOLD AUTO SUPPLY	Penetrant/Fuel Stabilizer/Wrenches - Vehicle #723	12/13/2018	150.94	
131379	ARNOLD AUTO SUPPLY	Battery - EP Hwy 4 L/S	12/13/2018	342.50	
131379	ARNOLD AUTO SUPPLY	Engine Stand/Welding Tips - SA Shop	12/13/2018	198.24	
131379	ARNOLD AUTO SUPPLY	Mufflers - Snow Plow	12/13/2018	150.13	
131379	ARNOLD AUTO SUPPLY	Hydraulic Fluid - B07	12/13/2018	154.42	
131379	ARNOLD AUTO SUPPLY	Nail Brush/Oil - EP Shop	12/13/2018	105.02	
131379	ARNOLD AUTO SUPPLY	Towels/Choke Cleaner - Hunter's WTP	12/13/2018	11.77	
131379	ARNOLD AUTO SUPPLY	Tongue Jack - Construction Crew	12/13/2018	42.89	
131442	ARNOLD AUTO SUPPLY	Chains/Lights/Bungee Cords/Tail Pipe/Wiper Fluid - Vehicle #135	12/21/2018	112.53	
131442	ARNOLD AUTO SUPPLY	Wiper Blades - Vehicle #529	12/21/2018	38.59	
131442	ARNOLD AUTO SUPPLY	Diesel Engine Fluid/Tailgate Handle/Filter/Oil/Wiper Blades - Vehicle #534	12/21/2018	118.66	
131442	ARNOLD AUTO SUPPLY	Chains/Lights/Bungee Cords/Tail Pipe/Wiper Fluid - Vehicle #717	12/21/2018	103.97	
131442	ARNOLD AUTO SUPPLY	Tubing/Fittings/Emery Cloth/Towels/Cleaner - Vehicle #721	12/21/2018	134.34	
131442	ARNOLD AUTO SUPPLY	Cleaners/Degreaser - EP Shop	12/21/2018	132.94	
131380	ARNOLD TIRE AND AUTO CARE	Seasonal Tire Change - Vehicle #501	12/13/2018	150.00	
131380	ARNOLD TIRE AND AUTO CARE	Seasonal Tire Change - Vehicle #522	12/13/2018	80.00	

CCWD
AP Disbursements
December 1-31, 2018

Check No.	Vendor/Employee	Transaction Description	Date	Amount
131380	ARNOLD TIRE AND AUTO CARE	Winter Tires (4) - Vehicle #713	12/13/2018	1,075.43
131380	ARNOLD TIRE AND AUTO CARE	Winter Tires (4) - Vehicle #717	12/13/2018	1,374.28
131381	BAVCO	Backflow Valve Repair Parts - JL Huckleberry L/S	12/13/2018	1,528.57
131382	BIG VALLEY FORD LINCOLN MERCURY	Steering Column Bolts - Vehicle #124	12/13/2018	11.47
131382	BIG VALLEY FORD LINCOLN MERCURY	Pedal/Wheel Bearings/Door Knob - Vehicle #606	12/13/2018	493.01
131382	BIG VALLEY FORD LINCOLN MERCURY	Intercooler Hoses - Vehicle #592	12/13/2018	170.26
131444	BNN, LLC	Rent 01/19 - SA Shop	12/21/2018	3,000.00
131444	BNN, LLC	Utility Services Reimbursement 12/18 - SA Shop	12/21/2018	244.56
131445	BOBCAT CENTRAL, INC	Blade/Filters/Grease/Hydraulic Fluid - Construction Crew Large Equip/Skid	12/21/2018	2,418.65
131290	BURKE, TIFFANY	Post Office Travel Reimbursement 11/18	12/07/2018	16.35
131291	BURKE, ZACHARY	Overtime Travel Reimbursement	12/07/2018	50.36
131446	BURKE, ZACHARY	Safety Boot/Winter Weather Gear Reimbursement	12/21/2018	399.00
131383	CAL.NET-MOTHERLODE	Internet Service 12/18	12/13/2018	57.92
131384	CALAVERAS AUTO SUPPLY	Oil/Assembly Lube - Vehicle #134	12/13/2018	39.48
131384	CALAVERAS AUTO SUPPLY	Wiper Blades/Diesel Engine Fluid/Brake Fluid/Gloves/Hammer - Vehicle #723	12/13/2018	189.47
131384	CALAVERAS AUTO SUPPLY	Oil/Drop Light/Bulb - SA Shop	12/13/2018	151.38
131384	CALAVERAS AUTO SUPPLY	Air Filters - JLWTP	12/13/2018	30.08
131384	CALAVERAS AUTO SUPPLY	Battery - B06	12/13/2018	276.15
131384	CALAVERAS AUTO SUPPLY	V-Belts - LCWWTP	12/13/2018	122.46
131447	CALAVERAS COUNTY	Application/Blanket Encroachment Permit 2019	12/21/2018	1,290.84
131433	CALAVERAS COUNTY AIR POLLUTION	Burn Permit Fees - District Wide	12/13/2018	120.00
131293	CALAVERAS FIRST COMPANY INC	Wastewater Treatment Plant Operator Recruitment Ad	12/07/2018	85.56
131385	CALAVERAS LUMBER CO INC	Circular Saw/Screws/Hangers - Hunter's WTP	12/13/2018	297.32
131385	CALAVERAS LUMBER CO INC	Tarps/Straw Wattles/Visqueen/Stakes - White Pines Lake Tulie Removal	12/13/2018	5,939.28
131385	CALAVERAS LUMBER CO INC	Fittings/Bolts/Washers - CCWTP	12/13/2018	29.88
131385	CALAVERAS LUMBER CO INC	Timer/Tripper/Nuts/Bolts - EP Hwy 4 L/S	12/13/2018	84.99
131385	CALAVERAS LUMBER CO INC	Tire Gauge - Vehicle #531	12/13/2018	7.50
131385	CALAVERAS LUMBER CO INC	Wall Clock - Collections Trailer	12/13/2018	8.57
131385	CALAVERAS LUMBER CO INC	Towels/Brush/Organizer/Tissue/Fittings - FMWWTP	12/13/2018	71.41
131385	CALAVERAS LUMBER CO INC	Hammer/Shovels - Construction Crew	12/13/2018	193.16
131385	CALAVERAS LUMBER CO INC	Threaded Rod/Hex Nuts - AWWTP	12/13/2018	8.05
131385	CALAVERAS LUMBER CO INC	Angle Grinder - SA Shop	12/13/2018	107.24
131386	CALIFORNIA WASTE RECOVERY SYSTEMS	Refuse Disposal 12/18 - District Wide	12/13/2018	1,365.79
131387	CALTEL	Leased Lines 12/18	12/13/2018	1,009.60
131387	CALTEL	Phone Lines 12/18	12/13/2018	422.69
131388	CAMMISA, JASON	Winter Weather Gear Reimbursement	12/13/2018	196.51
EFT	CARD SERVICES	Kubota Training Travel Expenditures - Hampton/Rose/Burke	12/19/2018	765.11
EFT	CARD SERVICES	Notary Training Materials - Hitchcock	12/19/2018	521.23
EFT	CARD SERVICES	Internet/E-Mail Back-Up - OP HQ	12/19/2018	29.90
EFT	CARD SERVICES	Internet Services 11/18 - Hunter's WTP	12/19/2018	76.87
EFT	CARD SERVICES	Server HD's (2) - OP HQ	12/19/2018	157.36
EFT	CARD SERVICES	Cordless Phone - LCWHSE	12/19/2018	48.21
EFT	CARD SERVICES	Drill Replacement Batteries	12/19/2018	35.99
EFT	CARD SERVICES	MRE's (Meals Ready to Eat) - Utility Dept.	12/19/2018	330.00
EFT	CARD SERVICES	Phone Compatible Truck Unit - Vehicle #721	12/19/2018	1,353.00

CCWD
AP Disbursements
December 1-31, 2018

Check No.	Vendor/Employee	Transaction Description	Date	Amount	
EFT	CARD SERVICES	Employee Meals - AWWTP Project	12/19/2018	69.34	
EFT	CARD SERVICES	9 Pole Plug - Vehicle #143 Crane	12/19/2018	49.50	
EFT	CARD SERVICES	Pressure Gauges - District Wide Stock	12/19/2018	32.56	
EFT	CARD SERVICES	Website Calendar Plug-In	12/19/2018	80.10	
EFT	CARD SERVICES	Office Supplies	12/19/2018	295.52	
EFT	CARD SERVICES	Car Wash - Vehicle #139	12/19/2018	27.95	
131389	CARSON HILL ROCK PRODUCTS	Backfill Sand - White Pines Lake Tulie Removal	12/13/2018	345.08	
131389	CARSON HILL ROCK PRODUCTS	Hauling - White Pines Lake Tulie Removal	12/13/2018	510.00	
131389	CARSON HILL ROCK PRODUCTS	3/4 Class II AB - EP Shop Stock	12/13/2018	648.33	
131389	CARSON HILL ROCK PRODUCTS	Hauling - EP Shop Stock	12/13/2018	573.75	
131448	CARSON HILL ROCK PRODUCTS	Backfill Sand - CC Pueblo Ct Sewer Line	12/21/2018	57.82	
131390	CDK SUPPLY	Rigid Conduit/Hubs/Wire/Nuts - Vallecito Septic Tank Rewire	12/13/2018	330.69	
131294	CDTFA	State Water Rights Fees FY 2018-19 - District Wide	12/07/2018	73,768.29	(D)
131295	CED CREDIT	Fuses/PVC End Bells - Electricians Stock	12/07/2018	140.08	
131391	CED CREDIT	Ballasts/External Light - JLTC	12/13/2018	147.40	
131391	CED CREDIT	Stake Ons - Vehicle #134 Stock	12/13/2018	19.01	
131296	CENTRAL VALLEY HARDWARE CO	Padlocks (70) - Stock	12/07/2018	626.45	
131297	CHASE CHEVROLET CO. INC	Radiator/Hoses - Vehicle #125	12/07/2018	283.52	
131298	CITY OF ANGELS	Sewer Service 11/18 - Six Mile Village	12/07/2018	4,695.23	
131299	CLARK PEST CONTROL	Pest Control 11/18 - CCWTP	12/07/2018	92.00	
131449	CLARK PEST CONTROL	Pest Control Oct/Nov - JLWTP	12/21/2018	124.00	
131300	CLUTCH & BRAKE EXCHANGE, INC.	Hydraulic Hoses (2) - Vehicle #123	12/07/2018	575.19	
131392	COLUMBIA COMMUNICATIONS	Vehicle Cloud Service 12/18	12/13/2018	730.00	
131301	COMCAST	Internet Service 12/18 - DF/VCTO WWTP	12/07/2018	83.08	
131302	COMCAST	Internet Service 12/18 - OP HQ	12/07/2018	88.08	
131450	COMCAST	Internet Service 01/19 - JLTC	12/21/2018	88.08	
131451	COMCAST	Internet Service 01/19 - JLWTP	12/21/2018	85.93	
131393	CONDOR EARTH TECHNOLOGIES INC	Groundwater Monitoring & Reporting - 7 Sites	12/13/2018	2,294.00	
131393	CONDOR EARTH TECHNOLOGIES INC	Materials Testing/Inspection Services - JLWTP Pre-Treatment Facility Project	12/13/2018	687.50	(B)
131452	CONDOR EARTH TECHNOLOGIES INC	Sustainable Groundwater Management Act (SGMA) Support 11/18	12/21/2018	2,421.25	
131394	CONETH SOLUTIONS INC	IT Infrastructure Support Services 12/18	12/13/2018	1,325.00	
131395	COPPER COVE AT LAKE TULLOCH	HOA 2019 Assessments	12/13/2018	1,659.00	
131305	COPPEROPOLIS FIRE PROTECTION DISTRICT	Hydrant Maintenance - CC	12/07/2018	160.00	
131396	CPPA	Power 11/18	12/13/2018	73,930.92	
131307	CPUD	Water Service 11/18 - OP HQ	12/07/2018	219.55	
131397	CRUST BUSTERS	Power Head Mixer Unit - FMWWTP	12/13/2018	905.00	
131397	CRUST BUSTERS	Power Head Mixer Unit - Vehicle #722	12/13/2018	905.00	
131398	CUNEO, DYLAN	Safety Boot/Winter Weather Gear Reimbursement	12/13/2018	400.00	
131454	CWEA	Membership Renewal - Samorano	12/21/2018	188.00	
131308	DANNER, ALEISA	Post Office Travel Reimbursement	12/07/2018	14.17	
131399	DATAPROSE	UB Statement Processing 11/18	12/13/2018	4,287.17	
131455	DAVIDSON, JEFF	Travel 12/18	12/21/2018	61.04	
131456	DC FROST ASSOCIATES, INC	Lamps/Sensor Assembly/O-Rings/Circuit Board - LCWWTP	12/21/2018	27,241.83	
131309	DEAMICIS, GABRIEL	Wastewater Treatment Course Package Reimbursement	12/07/2018	122.55	
131312	DIAMOND TRUCK BODY MFG. CO. IN	Hoist Pump Assembly - Vehicle #709	12/07/2018	816.65	

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Check No.	Vendor/Employee	Transaction Description	Date	Amount	
131400	DOI/BLM	Right of Way Communication Site Rental 01/19-12/19 - Bear Creek	12/13/2018	1,166.20	
131457	DOI/BLM	Right of Way Communication Site Rental 01/19-12/19 - Darby Knob	12/21/2018	2,822.30	(A)
131401	DOWNEY BRAND ATTORNEYS LLP	Legal Services 10/18	12/13/2018	12,475.15	
131402	DUBURG, MICHAEL	Winter Weather Gear Reimbursement	12/13/2018	181.82	
131313	E & M ELECTRIC & MACHINERY INC	Remote Access Gateway - SCADA	12/07/2018	5,186.12	
131403	EBBETTS PASS GAS SERVICE	Fuel 11/18	12/13/2018	1,738.58	
131404	EBBETTS PASS LUMBER	Socket - EP Shop	12/13/2018	9.65	
131404	EBBETTS PASS LUMBER	Heat Lamp Bulbs - EP Pump Stations	12/13/2018	10.71	
131404	EBBETTS PASS LUMBER	Tarp/Nozzle/Coupler/Hose - Hunter's WTP	12/13/2018	57.75	
131314	ECORP CONSULTING, INC	Mokelumne River Water Supply Study	12/07/2018	8,802.50	
131314	ECORP CONSULTING, INC	West Point Water System Water Supply Study	12/07/2018	3,960.00	
131458	ECORP CONSULTING, INC	White Pines Gaging Project	12/21/2018	6,332.88	
131316	ENVIRONMENTAL OPERATING SOLUTIONS	Micro C 2000 - DF/VCTO WWTP	12/07/2018	3,824.19	
131317	FASTENAL	Safety Glasses/Gloves/Marking Paint - EP	12/07/2018	482.02	
131317	FASTENAL	Wrenches/Breaker Bar/Mallet/Rope/Fluke Meter/Drill Set - Collections Crew	12/07/2018	888.37	
131459	FASTENAL	Hand Cleaner/Gloves/Shovels - JL	12/21/2018	100.99	
131459	FASTENAL	Ice Melter - EP Shop	12/21/2018	98.54	
131460	FERGUSON ENTERPRISES, INC	Hydrant Setter/Valve Setter/Meters (40) - CCWHSE	12/21/2018	4,204.33	
131318	FERGUSON ENTERPRISES, INC 1423	Pipe/Couplings/Clamps - LCWHSE	12/07/2018	12,283.82	
131318	FERGUSON ENTERPRISES, INC 1423	Clamps - CCWHSE	12/07/2018	245.97	
131319	FGL ENVIRONMENTAL	Waste Water Testing 11/18	12/07/2018	1,754.10	
131319	FGL ENVIRONMENTAL	Water Testing 11/18	12/07/2018	3,118.40	
131461	FGL ENVIRONMENTAL	Waste Water Testing 12/18	12/21/2018	2,601.50	
131461	FGL ENVIRONMENTAL	Water Testing 12/18	12/21/2018	4,622.00	
131462	GAMBI DISPOSAL INC.	Bio-Solids Removal - AWWTP	12/21/2018	665.00	
131462	GAMBI DISPOSAL INC.	Bio-Solids Removal - FMWWTP	12/21/2018	641.25	
131463	GARCIA AND ASSOCIATES	Archaeological Monitoring - JLWTP Pre-Treatment Facility Project	12/21/2018	24,288.98	(B)
131320	GENERAL PLUMBING SUPPLY CO INC	Pipe/Couplings/Primer/Glue - DF/VCTO WWTP	12/07/2018	96.65	
131464	GENERAL PLUMBING SUPPLY CO INC	Flange Tees/Grip Rings/Gaskets/Bolts/Couplings/Gate Valves - EP Hydrants	12/21/2018	2,387.99	
131322	GOVCONNECTION, INC	Ethernet Cables/Ink Cartridges/Software - SCADA	12/07/2018	1,101.12	
131322	GOVCONNECTION, INC	UPS Batteries/Keyboard - OP HQ	12/07/2018	867.37	
131465	GOVCONNECTION, INC	Computer Power Supply - DF/VCTO WWTP	12/21/2018	45.29	
131323	GRAINGER	Blower - EP Hwy 4 L/S	12/07/2018	87.15	
131466	GRAINGER	Batteries - WW Plants Weather Stations	12/21/2018	122.44	
131466	GRAINGER	Slings/Eyebolts/Connectors/Spotlight/Charger - SA Shop	12/21/2018	995.53	
131466	GRAINGER	Gauges - EP Meadowmont P/S	12/21/2018	179.44	
131466	GRAINGER	Gauges - EP Avery P/S	12/21/2018	179.44	
131466	GRAINGER	Gauges - WPWTP	12/21/2018	79.06	
131466	GRAINGER	Solenoid Valves - JLWTP	12/21/2018	154.90	
131466	GRAINGER	PVC Fittings/Cement - Wallace WWTP	12/21/2018	226.32	
131466	GRAINGER	Differential Pressure Gauge - AWWTP	12/21/2018	73.58	
131466	GRAINGER	Ear Muffs - Wallace WTP	12/21/2018	28.35	
131324	HACH COMPANY	Ammonia Test Strips/Probe/Stir Bar/Pipette Filler - AWWTP	12/07/2018	426.22	
131406	HACH COMPANY	Reagent Set - WPWTP	12/13/2018	207.29	
131406	HACH COMPANY	Reagent Set - Hunter's/SR WTP	12/13/2018	626.08	

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Check No.	Vendor/Employee	Transaction Description	Date	Amount	
131406	HACH COMPANY	Accuvac/Reagent Set/Solution/Ascorbic Acid - JLWTP	12/13/2018	1,094.86	
131467	HACH COMPANY	Ice Pic Calibration - JLWTP	12/21/2018	335.36	
131467	HACH COMPANY	Sulfuric Acid/Phosphate/Probe/Stablcal/Bulbs/Sensor - WPWTP	12/21/2018	1,337.62	
131467	HACH COMPANY	Electrode/Nitrate/Stablcal Calibration Kit - DF/VCTO WWTP	12/21/2018	616.57	
131467	HACH COMPANY	Electrode/Stir Bars - AWWTP	12/21/2018	319.50	
131467	HACH COMPANY	Stablcal Calibration Kit - FMWWTP	12/21/2018	261.68	
131469	HERD'S MACHINE & WELD SHOP	Clarifier Drive Repair/Bar Grating - AWWTP	12/21/2018	1,176.06	
131469	HERD'S MACHINE & WELD SHOP	Hot Roll Plates/Square Tubing - SA Shop	12/21/2018	1,478.84	
131407	HIBBARD, RICHARD	Class A Truck Rental Reimbursement	12/13/2018	550.00	
131470	HOBGOODS CLEANING	Janitorial Service 12/18	12/21/2018	1,985.00	
131327	HOLT OF CALIFORNIA	Dozer/Excavator Rentals - White Pines Lake Tulie Removal	12/07/2018	31,859.76	
131471	HOLT OF CALIFORNIA	Batteries - JL A Tank Generator	12/21/2018	750.33	
131328	HOPKINS TECH. PRODUCTS	Hypo Pump Feed Line/Fittings - Hunter's WTP	12/07/2018	368.97	
131329	HUGHESNET	Internet Service 12/18 - FMWWTP	12/07/2018	82.23	
131408	HUGHESNET	Internet Service 12/18 - AWWTP	12/13/2018	80.94	
131330	HUNT & SONS, INC	Fuel - CC	12/07/2018	720.02	
131472	HUNT & SONS, INC	Oil - Vehicle #123	12/21/2018	996.56	
131472	HUNT & SONS, INC	Fuel - WP	12/21/2018	1,571.95	
131473	INDUSTRIAL ELECTRICAL CO	Motor Rebuild - CCWWTP	12/21/2018	2,970.49	
131473	INDUSTRIAL ELECTRICAL CO	Pump/Motor Rebuild - CC L/S #12	12/21/2018	5,951.84	
131409	IRON MOUNTAIN	Document Destruction Oct/Nov	12/13/2018	122.76	
131411	KENNEDY/JENKS CONSULTANTS	Hazardous Materials Business Plan Phase II - District Wide	12/13/2018	355.82	
131411	KENNEDY/JENKS CONSULTANTS	SSMP Update & Review - District Wide	12/13/2018	5,231.75	
131332	LANG, ERTHIE	Safety Boot Reimbursement	12/07/2018	200.00	
131333	LAWSON PRODUCTS INC	Absorbant - SA Shop	12/07/2018	134.60	
131474	LEE & RO, INC	Engineering/Design Services - CC L/S's 8,12,13 & Force Main Bypass	12/21/2018	19,042.11	(E)
131474	LEE & RO, INC	Engineering/Design Services - CC L/S's 15,16 Renovations	12/21/2018	19,042.11	(E)
131334	LIEBERT CASSIDY WHITMORE	Legal Services 10/18	12/07/2018	9,683.69	
131475	LIVINGSTON MICROGRAPHICS, LLC	Quartz Sleeves - LCWWTP	12/21/2018	1,165.20	
131476	LUNSFORD, SCOTT	Vehicle Rental Insurance Reimbursement	12/21/2018	80.97	
131477	MANTECA TRUCK ACCESSORIES	Winch/Controller - Dump Trailer	12/21/2018	425.42	
131413	MARTIN, PETER	ACWA Conference Travel Reimbursement	12/13/2018	593.24	
131336	MATHESON TRI-GAS, INC	Liquid Oxygen - CCWTP	12/07/2018	3,983.49	
131336	MATHESON TRI-GAS, INC	Liquid Oxygen - JLWTP	12/07/2018	5,078.81	
131279	MCCLOSKEY, STEVENS	Safety Boot Reimbursement	12/06/2018	193.90	
131478	MEAD & HUNT INC	La Contenta Dam EAP 11/18	12/21/2018	3,534.25	
131414	MODESTO AIRCO GAS & GEAR	Cylinder Rental 12/18	12/13/2018	85.80	
131416	MOTHER LODE ANSWERING SERVICE	Answering Service 12/18	12/13/2018	619.17	
131479	MOTION INDUSTRIES INC	Coupler - CCWWTP Pond 6	12/21/2018	197.96	
131340	MOUNTAIN OASIS PURIFIED WATER	Water Cooler Service/Supplies 11/18 - District Wide	12/07/2018	98.95	
131480	NASH CHEVRON	Seasonal Tire Change - Vehicle #535	12/21/2018	56.00	
131341	NEOFUNDS BY NEOPOST	Postage 11/18	12/07/2018	1,000.00	
131417	NEOPOST USA INC	Maintenance Agreement Folder/Sorter 01/19	12/13/2018	407.61	
131342	NIGHT OWL LOCK SERVICE	Re-Key Welding Shop - SA Shop	12/07/2018	141.50	
131418	NORDAHL LAND SURVEYING	Land Surveying - JLWTP Pre-Treatment Facility Project	12/13/2018	300.00	(B)

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Check No.	Vendor/Employee	Transaction Description	Date	Amount	
131343	NORTHSTAR CHEMICAL	Sodium Hydroxide - LCWWTP	12/07/2018	2,608.32	
131343	NORTHSTAR CHEMICAL	Sodium Hypochlorite - JLWTP	12/07/2018	4,145.84	
131343	NORTHSTAR CHEMICAL	Sodium Hydroxide - AWWTP	12/07/2018	3,432.00	
131343	NORTHSTAR CHEMICAL	Sodium Hydroxide - FMWWTP	12/07/2018	6,589.44	
131343	NORTHSTAR CHEMICAL	Sodium Hydroxide - DF/VCTO WWTP	12/07/2018	864.86	
131343	NORTHSTAR CHEMICAL	Sodium Hypochlorite - AWWTP	12/07/2018	1,723.45	
131344	NTU TECHNOLOGIES INC	ProPac 9800 - Hunter's WTP	12/07/2018	594.00	
131419	O'CONNELL & DEMPSEY, LLC	Federal Legislative Advocacy Consulting Services 11/18	12/13/2018	4,000.00	
131481	O'REILLY AUTO PARTS	Wiper Blades/Fluid/Rain-X/Fuel Treatment - Vehicle #126	12/21/2018	76.54	
131481	O'REILLY AUTO PARTS	Transmission Fluid/Fuel Treatment/Oil - Vehicle #150	12/21/2018	146.89	
131481	O'REILLY AUTO PARTS	Funnel/Fluid Pump - SA Shop	12/21/2018	14.99	
131481	O'REILLY AUTO PARTS	Emery Cloth/Filters - LCWWTP	12/21/2018	222.97	
131481	O'REILLY AUTO PARTS	Fuel Filter - Southworth WWTP	12/21/2018	3.86	
131482	OUTWEST TIRE AND REPAIR	Tire (1) - Vehicle #528	12/21/2018	259.55	
131345	P G & E	Power 11/18 - JLTC	12/07/2018	142.79	
131346	P G & E	Power 11/18 - Warmwood L/S	12/07/2018	20.05	
131347	P G & E	Power 11/18 - Woodgate L/S	12/07/2018	25.19	
131348	P G & E	Power 11/18 - OP HQ	12/07/2018	66.91	
131349	P G & E	Power 11/18 - JL Rental House	12/07/2018	46.80	
131420	P G & E	Power 11/18 - CC Water Tank	12/13/2018	40.96	
131483	P G & E	Power 12/18 - Hwy 26	12/21/2018	10.47	
131484	P G & E	Power 11/18 - SA Shop	12/21/2018	668.15	
131485	PAYMENTUS GROUP INC	Payment Processing 11/18	12/21/2018	5,792.00	
131435	PLACER TITLE	Deposit - LCWWTP Land Purchase	12/17/2018	6,350.00	
131350	POLLARDWATER	Hydrant Wrenches/Pipe Locators - LCWHSE	12/07/2018	499.99	
131352	POTRERO HILLS LANDFILL	Bio-Solids Disposal - AWWTP	12/07/2018	274.80	
131352	POTRERO HILLS LANDFILL	Bio-Solids Disposal - FMWWTP	12/07/2018	210.60	
131353	R.E. SMITH CONTRACTORS, INC.	Construction Contract - JLWTP Pre-Treatment Facility Project	12/07/2018	146,117.62	(B)
131486	RATTERMAN, SCOTT	Travel 12/18	12/21/2018	16.35	
131487	SCELZI EQUIPMENT, INC.	Replacement Keys/Tumblers - Vehicle #134	12/21/2018	52.98	
131488	SECADA. CINDY	Travel 12/18	12/21/2018	63.27	
131356	SEIU LOCAL 1021	Union Dues 11/18	12/07/2018	2,786.30	(C)
131489	SENDERS MARKET INC	Clamps/Insulation/Cable Ties/Bungee Cords/Tarp/Plastic Bags - JLWTP	12/21/2018	322.74	
131489	SENDERS MARKET INC	Ball Valve/Pipe Insulation - JL Huckleberry L/S	12/21/2018	11.18	
131489	SENDERS MARKET INC	Batteries - SA Shop	12/21/2018	13.93	
131489	SENDERS MARKET INC	Gloves/Bulbs/Fittings/Phone/Work Light/Broom/Fasteners/Wire - LCWHSE	12/21/2018	461.33	
131489	SENDERS MARKET INC	Electrical Boxes/Connectors/Wire/Switches/Wall Plates - JL Rental House	12/21/2018	311.93	
131489	SENDERS MARKET INC	Hammer - Vehicle #134	12/21/2018	54.04	
131489	SENDERS MARKET INC	Tubing/Fittings/Connectors/Washers - Wallace WWTP	12/21/2018	118.06	
131489	SENDERS MARKET INC	Stakes/Gloves/Trowels/Hammers - Meter Readers	12/21/2018	58.17	
131489	SENDERS MARKET INC	Pipe/Fittings - Septic Tank Repair	12/21/2018	7.13	
131489	SENDERS MARKET INC	Pumps - District Wide Septic Tank Stock	12/21/2018	1,408.82	
131489	SENDERS MARKET INC	Conduit/Straps/Tape - JLTC	12/21/2018	38.19	
131489	SENDERS MARKET INC	Sodium Bicarbonate - JL A Tank Generator	12/21/2018	12.56	
131421	SIGNAL SERVICE	On Site Service - EP Shop	12/13/2018	80.00	

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Check No.	Vendor/Employee	Transaction Description	Date	Amount	
131490	SLAKEY BROS - JACKSON	Traffic Valve Boxes/Lids/Gaskets/Couplings - CCWHSE	12/21/2018	3,325.32	
131490	SLAKEY BROS - JACKSON	Tap Saddles/Pipe Fittings/Couplings - EP Shop	12/21/2018	7,809.30	
131491	SONORA FORD	Service/Brake Light Harness/Spare Tire - Vehicle #529	12/21/2018	1,870.21	
131491	SONORA FORD	Truck Rental - Lunsford	12/21/2018	121.50	
131492	SONSRAY MACHINERY LLC	Seal/O-Ring - Backhoe	12/21/2018	83.95	
131493	STRANGE, TERRY	Travel 12/18	12/21/2018	29.43	
131361	SUTTON ENTERPRISES	10 Wheeler Hauling - White Pines Lake Tulie Removal	12/07/2018	3,570.00	
131361	SUTTON ENTERPRISES	Excavator Rental/Labor/Pilot Car - White Pines Lake Tulie Removal	12/07/2018	15,754.11	
131422	SWRCB	Water Treatment Operator, Grade 2 Certification - Burkhardt	12/13/2018	60.00	
131422	SWRCB	Drinking Water Distribution Operator, Grade D3 Cert Renewal - Turner	12/13/2018	120.00	
131512	SWRCB	Drinking Water Treatment Operator, Grade T1 Cert Renewal - Atnip	12/21/2018	55.00	
131362	SWRCB	Permit Registration Documents Application Fee - EP Reach 1 Waterline Repl	12/07/2018	988.00	(E)
131363	SWRCB-DIVISION WATER QUALITY	Annual Permit Fees FY 18-19 - District Wide	12/07/2018	130,068.00	
131364	TELEDYNE INSTRUMENTS, INC	Filter Element/Lamp Assembly - JLWTP	12/07/2018	537.06	
131365	THATCHER COMPANY, INC	Sodium Hypochlorite - Southworth WWTP	12/07/2018	580.53	
131366	THE CAR DOCTOR	Wiper Blades - Vehicle #144/145	12/07/2018	60.02	
131494	THOMAS, RUSS	ACWA Conference Travel Reimbursement	12/21/2018	1,322.71	
131494	THOMAS, RUSS	Travel 12/18	12/21/2018	98.10	
131495	THOMPSONS CHRYSLER DODGE JEEP RAM	Oil/Lube/Wipers - Vehicle #720	12/21/2018	128.67	
131496	TIFCO INDUSTRIES	Battery Terminal Kit/Cables/Hole Saw/Storage/Fittings/Discs - SA Shop	12/21/2018	2,590.90	
131496	TIFCO INDUSTRIES	Switches/Rockers - Vehicle #144	12/21/2018	708.34	
131496	TIFCO INDUSTRIES	Fittings/Fasteners - Hunter's WTP	12/21/2018	426.17	
131496	TIFCO INDUSTRIES	Heater/Work Light - SA Shop	12/21/2018	699.19	
131496	TIFCO INDUSTRIES	Rechargeable LED Flashlights (8) - Collections Crew	12/21/2018	516.77	
131423	TREATS GENERAL STORE INC	Meeting Supplies	12/13/2018	27.77	
131423	TREATS GENERAL STORE INC	Office Supplies - OP HQ	12/13/2018	63.32	
131498	UNDERHILL, BERTHA	Travel 12/18	12/21/2018	228.90	
131424	UNION PUBLIC UTILITY DISTRICT	Water Service 11/18 - DF/VCTO	12/13/2018	165.00	
131499	UNITED PARCEL SERVICE	Shipping 12/18	12/21/2018	75.00	
131500	UNITED RENTALS NORTHWEST, INC	Service/Repair Air Compressor - LCWHSE	12/21/2018	3,218.69	
131500	UNITED RENTALS NORTHWEST, INC	Trencher/Trailer Rental - LCWHSE	12/21/2018	286.36	
131501	US GEOLOGICAL SURVEY	Streamgaging Program 10/1/18-9/30/19	12/21/2018	35,320.00	(A)
131368	USA BLUE BOOK	Hour Meters - Electricians Stock	12/07/2018	1,281.48	
131368	USA BLUE BOOK	Stablcal/Shower/Eyewash Station - FMWWTP	12/07/2018	2,316.21	
131368	USA BLUE BOOK	Particulate Respirators - SA Shop	12/07/2018	34.73	
131368	USA BLUE BOOK	Air Compressor - CC C Tank	12/07/2018	1,700.05	
131368	USA BLUE BOOK	Grinder Pump - FMWWTP Sludge Tank	12/07/2018	1,060.04	
131368	USA BLUE BOOK	Stablcal/Reagent Set/Calibration Cylinder/Lamps - CCWTP	12/07/2018	1,296.18	
131368	USA BLUE BOOK	Liquid Ends - CCWTP Chemical Metering Pump	12/07/2018	1,478.30	
131502	USA BLUE BOOK	Log Books - WPWTP	12/21/2018	68.10	
131502	USA BLUE BOOK	Impact Wrench Kit/Hydrant Flusher/Meter Locks/Keys - LCWHSE	12/21/2018	4,293.32	
131502	USA BLUE BOOK	Ball Valve/Solenoid Valve - Wallace WWTP	12/21/2018	3,083.61	
131502	USA BLUE BOOK	Controller - CCWTP	12/21/2018	2,490.83	
131502	USA BLUE BOOK	Pump - AWWTP Clarifier	12/21/2018	1,419.97	
131502	USA BLUE BOOK	Liquid Filled Pressure Gauge - JL Huckleberry L/S	12/21/2018	145.45	

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Check No.	Vendor/Employee	Transaction Description	Date	Amount	
131426	USDA FOREST SERVICE	2019 Land Use Fee 01/19-12/19 - EP Water System	12/13/2018	777.35	
131503	USDA FOREST SERVICE	Special Use Permit - Liberty Hill	12/21/2018	2,461.69	(A)
131503	USDA FOREST SERVICE	Special Use Permit - Beaver Creek	12/21/2018	2,461.69	(A)
131427	USPS	Box 608/846 Rental	12/13/2018	1,418.00	
131504	VERIZON WIRELESS	Cell Phone Service 11/18	12/21/2018	2,588.33	
131428	VOLCANO TELEPHONE COMPANY	Phone 11/18 - WPWTP	12/13/2018	405.09	
131428	VOLCANO TELEPHONE COMPANY	Phone 11/18 - WPWWTP	12/13/2018	157.47	
131429	WAKI, KATHERINE L.	Arbitration Transriber Services	12/13/2018	904.00	
131430	WALKER, GARETT	Backflow Tests (20) - CC	12/13/2018	700.00	
131431	WEAVER, TOM	Oil/Filter Service - Vehicle #713	12/13/2018	103.32	
131432	WEST POINT FIRE	Hydrant Maintenance (91) - WP	12/13/2018	1,820.00	
131505	WEST POINT LUMBER INC	Ball Valve/Distilled Water - WPWTP	12/21/2018	93.46	
131505	WEST POINT LUMBER INC	Pipe Fittings - Moke River ClaVal Repair	12/21/2018	18.19	
131505	WEST POINT LUMBER INC	Water - WPWHSE	12/21/2018	4.28	
131506	WESTERN HYDROLOGICS	Gage Installation/Maintenance - Bear Creek Diversion	12/21/2018	8,272.57	
EFT	WEX BANK	Fuel 11/18	12/11/2018	10,730.59	
131371	WILLE ELECTRIC SUPPLY CO INC	150A Breaker - JL Huckleberry L/S	12/07/2018	1,889.85	
131371	WILLE ELECTRIC SUPPLY CO INC	Electrical Box/Panel/PVC Cement/Cord/Cover - FMWWTP SCADA	12/07/2018	220.24	
131507	WILLE ELECTRIC SUPPLY CO INC	Relays/Starter - DF/VCTO WWTP	12/21/2018	579.20	
131508	WILSOM, JIM	Road Repair - CC	12/21/2018	7,870.00	
131510	WOOD ENVIRON & INFRASTRUCTURE SOLUTIONS	Local Hazard Mitigation Plan (LHMP) 11/18	12/21/2018	1,420.61	
131372	XYLEM WATER SOLUTIONS USA, INC	UV Ballasts - FMWWTP	12/07/2018	2,365.45	
131511	YOUNG'S COPPER ACE HARDWARE	Mortar/Pipe Fittings - Collections Crew	12/21/2018	208.31	
131511	YOUNG'S COPPER ACE HARDWARE	Hammer/Broom/Oil Drain/Fasteners/Towels/Pail/Trash Bags/Torch Kit - CC	12/21/2018	580.79	
131511	YOUNG'S COPPER ACE HARDWARE	Pipe/Pipe Fittings/Valve Box - CCWHSE	12/21/2018	43.55	
131373	ZANARDI, CHRIS	Winter Weather Gear Reimbursement	12/07/2018	200.00	
	Employee Medical Reimbursements (3)			1,065.00	
	Retiree Health Reimbursements (25)			6,961.40	
	Customer Refunds (4)			868.10	
		Total December 2018 AP Disbursements		1,111,321.39	

RESOLUTION NO. 2019- __

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CALAVERAS COUNTY WATER DISTRICT

RATIFYING CLAIM SUMMARY NO. 562

WHEREAS, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT has reviewed and considered Claim Summary Number 562 at the Regular Meeting held on January 23, 2019; and

WHEREAS, Board Members have resolved questions, issues, or concerns by consultation with District staff during said meeting.

NOW, THEREFORE, BE IT RESOLVED that the CALAVERAS COUNTY WATER DISTRICT Board of Directors hereby ratifies Claim Summary Number 562 in the amount of $1,709,583.47 for the month of December, 2018.

PASSED AND ADOPTED this 23rd day of January, 2019 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Russ Thomas
President, Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk to the Board

Agenda Item

DATE: January 23, 2019

TO: Jeffrey Meyer, Interim General Manager

FROM: Charles Palmer, P.E., District Engineer

RE: Informational / Engineering Department / Quarterly Projects Report for October through December 2018

RECOMMENDED ACTION:

None

SUMMARY:

For informational purposes, Staff is transmitting to the Board of Directors the Engineering Department's current quarterly projects report for each of Divisions 1 through 5.

FINANCIAL CONSIDERATIONS:

None

Attachments: *Quarterly Project Reports for Division 1 through 5 / December 2018*

DIVISION 1 - SCOTT RATTERMAN

QUARTERLY PROJECTS SUMMARY / DECEMBER 2018

AD604 Camanche Mokelumne Hill San Andreas Southworth Ranch Estates Valley Springs

No.	#	*ACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Ex.	Plans Rels.
1	01213	New Hogan Lake Estates North TSTM 2003-05, Phases A & B (Platner)	11/02/19	
2	01262 01263	New Hogan Oaks Subdivision Units 1 & 2, Old Golden Oaks, LLC (APN's 073-042-098 and 073-042-028)		
3	01265	Gold Creek Unit 3 Subdivision		
4	11064W	West Point Water System Supply Reliability Study (A) and Mokelumne River Long Term Water Needs Study (B)		
5	01258	Mark Twain Medical Center (APNs 073-047-001 and 073-049-002 thru -006)		
6	-	Jenny Lind APN 046-036-052, Grocery Outlet 18,000 sf retail facility		

No.	#	*INACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Ex.	Plans Rels.

No.	**#**	*COMMENTS*		
1	01213	Request for extension of water/wastewater facilities agreement granted, new expiration date is 11/2/19	11/2/2019	
2	01262 01263	Concept review applications received 12/29/17 for water and sewer for New Hogan Oaks Units 1 & 2 (51 and 145 unit residential subdivisions). Waiting for engineering reports - Letter sent 3/20/2018 - Possible Easement Issues		
3	01265	Concept review application received 6/20/18. Concept review issued 8/20/18. Waiting on engineering reports, Possible Easement Issue		
4	11064W	Study B adopted at joint CPUD/CCWD Board meeting Oct.4, 2017. As of 9/13/18, CCWD staff issued comments for DRAFT Study A prepared by KASL and ECORP. Study A proposed to be finalized and adopted at 01/23/19 Board meeting.		
5	01258	Medical clinic at Vista Del Lago/Hwy 26. Ground breaking on 9/28/18. Cost to serve (CTS) letter mailed 7/24/18. CTS Fees Paid on 9/13/18. 4 sets plans approved for construction as of 01/10/19	7/24/2018	1/10/2019
6	-	Received cost to serve (CTS) application - initial CTS letter issued 9/11/18, and revised CTS letter issued on 9/25/18		

DIVISION 2 - CINDY SECADA

QUARTERLY PROJECTS SUMMARY / DECEMBER 2018

Douglas Flat Indian Rock Vineyards Mt. Ranch Sheep Ranch Vallecito WWTP West Point Wilseyville

No	#	*ACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Ex	Plans Rels.
1	15072	West Point / Wilseyville Sewer Construction/Implementation Grant Application		
2	11064W	West Point Water System Supply Reliability Study (A) and Mokelumne River Long Term Water Needs Study (B)		
3	15082	Douglas Flat/Vallecito Recycled Water Distribution Project (TSTAN IRWMP)		

No	#	*INACTIVE* PROJECTS THIS QUARTER	/-WW Agr.Ex	Plans Rels.

No	**#**	*COMMENTS*		
1	15072	As of 12/18, application on hold by CWSRF Division of Financial Assistance.		
2	11064W	Study B adopted at joint CPUD/CCWD Board meeting Oct.4, 2017. As of 9/13/18, CCWD staff issued comments for DRAFT Study A prepared by KASL and ECORP. Study A proposed to be finalized and adopted at 01/23/19 Board meeting.		
3	15082	Peter Martin developed a revised project schedule. All work including design, environmental, bidding, and construction to be finished by Aug. 2019. CCWD construction crew may be utilized for project construction.		

DIVISION 3 - BERTHA UNDERHILL

QUARTERLY PROJECTS SUMMARY / DECEMBER 2018

Arnold/Avery Big Trees Village Forest Meadows Lakemont Pines Meadowmont Township of Murphys

No.	#	*ACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Ex.	Plans Rels.
1	11085	Reach 1 Water Pipeline Replacement Project		
2	11084	Techite Pipeline / Big Trees / Meko Drive		
3	11095	Ebbetts Pass Redwood Tank Hazard Mitigation Grant Application		
4	-	Snowshoe Springs, Updated Water Service Agreement		
No.	#	*INACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Exp.	Plans Rels.
5	01575	Forest Meadows Subdivision Units 4A & 5 (Sierra Ridge Associates)	02/17/19	
6	01215	Three Oaks Subdivision TSTM 2006-37 (Gillis)	04/18/19	
No.	**#**	*COMMENTS*		
1	11085	Project advertised for public bids. Bid opening scheduled for 01/29/19. Plan to start construction in May 2019.		
2	11084	District completed review of 100% drawings and prepared 100% contract documents and specifications. Project to bid and start construction June 2019.		
3	11095	As recommended by Cal-OES, Joel Metzger and Charles Palmer updated and resubmitted application again on 07/02/18. District has two active project applications for DR-4301 and 4344. Project under consideration by Cal-OES.		
4	-	CCWD Board approved agreement on 12/12/18.		
5	01575	Non-standard water and wastewater facilities agreement approved by Board on Feb. 17, 2016. Time extended to 02/17/2019. Improvement plans reviewed by CCWD staff as of Sept. 2018 and all comments addressed by Weber, Ghio.	02/17/19	
6	01215	Plans received 3/3/17 for proposed 17-lot subdivision. Extension of existing water and wastewater facilities agreement granted until April 2019.	04/18/19	

DIVISION 4 - RUSS THOMAS

QUARTERLY PROJECTS SUMMARY / DECEMBER 2018

Angels Camp Six Mile Village Vallecito Connor Estates Copper Cove Copperopolis Lake Tulloch Shores Saddle Creek

No.	#	*ACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Ex	Plans Rels.
1	15082	Douglas Flat/Vallecito Recycled Water Distribution Project (TSTAN IRWMP)		
2	15080 & 15076	Copper Cove Lift Station 8, 12 &13 Bypass / Sewer Forcemain and Lift Station 15 & 18 Replacement		
3	01596	La Cobra Mina Subdivision Unit 2		
4	01264	Copper Hills Unit 2		
5	-	Copper Hills Units 3 & 4, DeNova Homes		

No.	#	*INACTIVE* PROJECTS THIS QUARTER	/-WW Agr.Ex	Plans Rels.

No.	#	*COMMENTS*		
1	15082	Peter Martin developed a revised project schedule. All work including design, environmental, bidding, and construction to be finished by Aug. 2019. CCWD construction crew may be utilized for project construction.		
2	15080 & 15076	Lee & Ro held pre-design workshop with CCWD staff on Sept.6 & 7, 2018 and again in Dec. 2018, and is currently finishing pre-design report. Joel Metzger to coordinate with consultant on public outreach effort.		
3	01596	Facilities agreement signed 8/9/17, Resolution # 2017-47, 7/26/18-Final Inspection approved. 12/20/18- transfer documents completed and recorded.		
4	01264	Previously stopped construction years ago before water and sewer facilities were completed and never accepted by District. As of 9/10/18, the property is being put into new ownership - recorded documentation to be provided. An updated facility agreement to be created/signed after transfer of ownership.		
5	–	Contacted by DeNova Homes for possible re-opening of project. Since Units 3 & 4 construciton never started and agreement expired, District is restarting process with new facilities agreement, plan check and inspections.		

DIVISION 5 - JEFF DAVIDSON

QUARTERLY PROJECTS SUMMARY / DECEMBER 2018

AD 604 LaContenta Rancho Calaveras Valley Hills Estates

No.	#	*ACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Ex	Plans Rels.
1	01213	New Hogan Lake Estates North TSTM 2003-05, Phases A & B (Platner)	11/02/19	
2	01262 01263	New Hogan Oaks Subdivision Units 1 & 2, Old Golden Oaks, LLC (APN's 073-042-098 and 073-042-028)		
3	01265	Gold Creek Unit 3 Subdivision		
4	11092	Jenny Lind Water Plant Pretreatment FEMA/OES Hazard Mitigation Project		
5	01258	Mark Twain Medical Center (APNs 073-047-001 and 073-049-002 thru -006)		
6	-	Jenny Lind Elementary Sewer Service, APN's 073-043-016/-017		

No.	#	*INACTIVE* PROJECTS THIS QUARTER	W-WW Agr.Exp	Plans Rels.

No.	#	*COMMENTS*		
1	0213	Request for extension of water/wastewater facilities agreement granted, new expiration date is 11/2/19	11/02/19	
2	01262 01263	Concept review applications received 12/29/17 for water and sewer for New Hogan Oaks Units 1 & 2 (51 and 145 unit residential subdivisions). Waiting for engineering reports - Letter sent 3/20/2018 - Possible Easement Issues		
3	01265	Concept review application received 6/20/18. Concept review issued 8/20/18. Waiting on engineering reports - Possible Easement Issues		
4	11092	Ground breaking occurred 04/09/18. As of 10/01/18, construction is 65% complete. As of 12/10/18, Cal-OES approved $593,250 in additional grant funds.		
5	01258	Medical clinic at Vista Del Lago/Hwy 26. Ground breaking on 9/28/18. Cost to serve (CTS) letter mailed 7/24/18. CTS Fees Paid on 9/13/18. 4 sets plans approved for construction as of 01/10/19	7/24/18	1/10/19
6	-	Potential CWSRF project for sewer service to Jenny Lind Elementary School. Memorandum of Understanding (MOU) approve by Board on 12/12/18 has been fully executed and received as of 1/16/19		

Agenda Item

DATE: January 23, 2019

TO: Board of Directors

FROM: Jeffrey Meyer, Interim General Manager

SUBJECT: Review and Direction of the FY 2018-19 Second Quarter Investment Report

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RECOMMENDED ACTION:

Motion: _____/_____ by Minute Entry, to review and accept the District's quarterly Cash and Investments report for the period ending December 31, 2018.

SUMMARY:

Stated below are cash and investment balances for September 30 and December 31, 2018 and the change in respective balances:

	09/30/18	12/31/18	Change
Cash, Umpqua Bank (general account)	$ 2,029,446	$ 2,029,026	$ (420)
Cash on Hand, Petty Cash & Cash Drawer	600	600	-
Local Agency Investment Fund (LAIF)	24,774,167	24,811,659	37,492
Money Market Accounts	3,145,170	3,125,448	(19,722)
Bond Investments*	42,180	28,928	(13,252)
Certificates of Deposits*	2,260,837	2,265,869	5,032
Trustee Accounts	529,552	531,695	2,143
Total Cash and Investments	$ 32,781,952	$ 32,793,225	$ 11,273

**Bonds based on Market Value*

District Funds	$ 31,773,347
Trustee Accounts	531,695
Assessment District Funds	488,183
Total Funds	$ 32,793,225

This report is for the second quarter of FY 2018-19 and covers the months of October through December 2018. The District posted investment earnings of $144,268 during the quarter. The following summarizes the second quarter financial transactions:

- November 8th – a $500,000 transfer from LAIF to the Umpqua checking account
- December 17th – a $37,000 transfer from the Wells Fargo Money Market account to the Umpqua checking account
- December 19th – a transfer from the Umpqua checking account to LAIF in the amount of $400,000.

FINANCIAL CONSIDERATIONS:

The Federal Open Market Committee (FOMC) met twice in the second quarter, November 8 and December 19. In November the FOMC decided to maintain the federal funds target range to between 2.00% and 2.25%. However, when assessing the economic data in December the FOMC raised the target range for the federal funds rate to 2.25% to 2.50%.

The economic data included a strengthening labor market, strong job growth and a low unemployment rate (3.7%). Additionally, economic activity continued to increase at a strong rate and inflation, both overall and inflation for items other than food and energy, remained near the Fed's long-term objective of 2.0%.

Consistent with its statutory mandate, the FOMC seeks to foster maximum employment and price stability. The FOMC said that future increases in the federal funds target rate will be consistent with sustained expansion of economic activity, strong labor market conditions and inflation near the 2.0 percent inflation objective.

The Dow, NASDAQ and S&P markets experienced extreme swings in December, including a four-day Dow loss of nearly 1,900 points (-8%) just before Christmas. The Dow did regain most of its pre-Christmas losses and closed the month at 23,327. Unfortunately, it lost approximately 7.8% of its value in 2018. Similarly, the NASDAQ and S&P markets both posted year-end losses. The S&P closed the year at 2,507, a year-end loss of 6.2%, while the NASDAQ lost 3.9% and closed at 6,635.

With mounting losses in the equity markets, investors moved their money to safer investments (U.S. Treasuries), which drove treasury prices up and effective yields down. The yields on ten-year treasuries dropped from the 310 range in November to the 270 range at year end. LAIF interest rates continued to increase, closing at 2.32% at December 31, 2018. Staff continues to pursue alternate investment opportunities.

Attachment(s): CCWD Quarterly Report on Investments December 31, 2018

CALAVERAS COUNTY WATER DISTRICT
Quarterly Report on Investments December 31, 2018

Investment Cost	Market Value	Coupon Rate	Date Invested	Date of Maturity	Days to Maturity	% of Portfolio	Invested with
$ 24,811,659	$ 24,811,659	2.320%	Open	Open	192	78.66%	Local Agency Investment Fund
405	405	0.010%	Open	Open	5	0.00%	Wells Fargo Money Market
3,125,043	3,125,043	0.750%	June 14, 2007	Open	1	9.91%	Umpqua Bank Money Market
326,649	326,649	0.900%	March 28, 2012	May 1, 2019	121	1.04%	Umpqua Bank Certificate of Deposit
2,000,000	1,939,220	1.300%	July 22, 2016	July 22, 2021	934	6.34%	Wells Fargo Bank Certificate of Deposit
749,370	28,928	3.950%	May 5, 2008	November 10, 2009	DEF	2.38%	Lehman Bros Hldgs Med Term Note CUSIP 52517PXT3
531,695	531,695	(Trustee funds from page 2)				1.69%	
$ 31,544,821	$ 30,763,599					100.00%	

I certify that all of the investments reported herein are substantially in accordance with the District's Financial Management Policy 7, "Investment Policy Guidelines", the law and other contractual agreements. I further certify the investments reported herein provide for the ability of the District to meet cash flow needs as specified in Financial Management Policy 7.

Jeffrey Meyer, Director of Administrative Services

CALAVERAS COUNTY WATER DISTRICT
Quarterly Report on Investments **December 31, 2018**

Trusteed Funds:

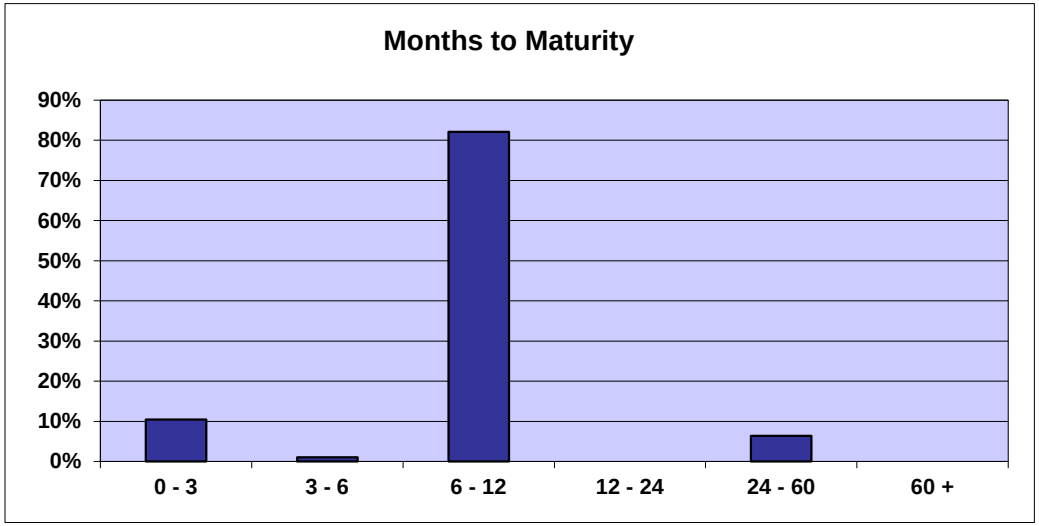
Cost	Market Value	% Yield	Date Invested	Date of Maturity	Days to Maturity	% Portfolio	Trustee	INVESTED FOR
$ 324,027	$ 324,027	0.00%	Aug 16, 06	Open	1	60.94%	USBank	2006 Saddle Creek Ltd, Reserve
138,650	138,650	0.01%	Oct 15, 13	Open	1	26.08%	USBank	Fly In Acres Reserve Fund
69,018	69,018	0.01%	Sep 09, 10	Open	1	12.98%	USBank	DaLee/Cassidy Reserve Fund
$ 531,695	$ 531,695					100.00%		

Maturity Analysis	Maturity Time Frames
$ 27,937,107	LAIF/Money Market
28,928	Maturity in Default
326,649	Scheduled Maturities in 2019
1,939,220	Scheduled Maturities in 2021
$ 30,231,904	Total
531,695	Trustees Investments
$ 30,763,599	Total Investments
$ 2,029,026	Checking Account Balance
600	Petty Cash + Change Fund
$ 32,793,225	**Total Cash & Investments**

Weighted Average Maturity
(The average life in days following the last day of the month)

Fund Class:	No. of Days
General	251
In Years =	0.69
Trust	1

Calaveras County Water District
Monthly Maturity Distribution (Market Value)
As of December 31, 2018



Months to Maturity	Maturity Distribution		Market Value
0 - 3	10%	$	3,154,376
3 - 6	1%		326,649
6 - 12	82%		24,811,659
12 - 24	0%		-
24 - 60	6%		1,939,220
60 +	0%		-
		Total $	30,231,904

Months to maturity chart includes Lehman Bros defaulted bond of $28,928 as of 12/31/18.

Calaveras County Water District
Portfolio Summary
As of December 31, 2018

Investments	Par Value	Market Value	Book Value	% of Portfolio	Days to Maturity	Yield to Maturity
Local Agency Investment Fund (LAIF)	24,811,659	24,811,659	24,811,659	80.0%	192	2.32%
Money Market Funds (Wells Fargo)	405	405	405	0.0%	5	0.01%
Money Market Funds (Umpqua)	3,125,043	3,125,043	3,125,043	10.1%	1	0.75%
Non-Negotiable Certificates of Deposit (Umpqua Bank)	326,649	326,649	326,649	1.1%	121	0.90%
Non-Negotiable Certificates of Deposit (Wells Fargo Bank)	2,000,000	1,939,220	2,000,000	6.4%	934	1.30%
Medium Term Notes	1,425,000	28,928	749,370	2.4%	DEF	DEF
Total Investments	31,688,756	30,231,904	31,013,126	100%		
Ending Accrued Interest		162,418	162,418			
Total Investments & Accrued Interest:	31,688,756	30,394,322	31,175,544			

Calaveras County Water District
Investment Compliance Checklist
As of December 31, 2018

California Government Code Section	Investment Category	Maximum Maturity	Authorized Investment Limits (Percent of Portfolio)	Percentage Held in Portfolio	Credit Rating Limits	Compliance
16429.1	Local Agency Investment Fund (LAIF)	None	*	80%	n/a	Yes
53601(l)	Money Market Funds (Wells Fargo)	None	20%	0%	(1)	Yes
53601(l)	Money Market Funds (Umpqua)	None	20%	10%	(1)	Yes
53684	Non-Negotiable Certificate of Deposit (Umpqua Bank)	2 years	40%	1%	n/a	See Note
53684	Non-Negotiable Certificate of Deposit (Wells Fargo Bank)	2 years	40%	6%	n/a	No
53601(k)	Medium Term Notes	5 years	30%	2%	A or >	Yes
				100%		

(1) Highest ranking by 2 of 3 of the nationally recognized rating agencies
*LAIF currently allows a maximum of $50 million per account.

Note: This Certificate of Deposit is held for Loan Collateral

Agenda Item

DATE: January 23, 2019

TO: Board of Directors

FROM: Jeffrey Meyer, Interim General Manager

SUBJECT: Discussion/Action Adopting District Financial Management Policy – No. 5.13, Financial Audit Policy

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RECOMMENDED ACTION:

Motion _____/_____ adopting Resolution No. 2015 - ____ regarding Adopting District's Financial Management Policy No. 5.13, Financial Audit Policy.

SUMMARY:

Section 5.001.1.6 ("Accounting, Auditing and Financial Reporting") of District's Financial Management Policy No. 5.00.1, includes guidelines for the auditing of the District's financial statements. Section 5.00.1.1.6 (attached) states:

> The District will employ an independent accounting firm to perform an annual audit of the District's financial statements. The completed and accepted audit shall be available to all required and interested parties.

On October 16, 2018 staff reviewed the current policy with the Finance Committee, identified shortcomings, and solicited input and direction in preparation of a new, more comprehensive audit policy that will address the lack of an auditor selection process and set the maximum length of service per individual auditor.

Staff presented a draft Financial Management Policy No. 5.13, Financial Audit Policy to the Finance Committee on November 19, 2018. The Finance Committee provided comments on the length and type of agreement as well as contract review process. Ac revised Financial Audit Policy (attached) was presented to the Finance Committee on January 15, 2019. The Finance Committee recommended staff request the Board rescind Section 5.00.1.1.6 of Financial Management Policy No. 5.00.1 and adopt the proposed Financial Management Policy No. 5.13, Financial Audit Policy.

FINANCIAL CONSIDERATIONS:

None at this time.

Attachment: Resolution 2019 - Adopting District's Financial Management Policy No. 5.13 – Financial Audit Policy
- Proposed Financial Management Policies No. 5.13, Financial Audit Policy
- District's Financial Management Policy No. 5.00.1, Section 5.00.1.1.6 Auditing

RESOLUTION 2019 -

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CALAVERAS COUNTY WATER DISTRICT

ADOPTING DISTRICT FINANCIAL MANAGEMENT POLICY NO. 5.13 – FINANCIAL AUDIT POLICY

WHEREAS, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopted Budget and Fiscal Policies by Minute Entry on February 11, 2004, which policy has been amended in part or in its entirety annually since that time; and

WHEREAS, the Board amended Financial Management Policy No. 5.00 – Budget and Fiscal Policies by Resolution No. 2008-09 on January 8, 2008, and by Resolution No. 2013-65 on October 9, 2013; and

WHEREAS, it has been determined the District requires a separate and comprehensive audit policy, Financial Management Policy No. 5.13, Financial Audit Policy.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT does hereby rescind Section 5.00.1.1.6 of the Budget and Fiscal Policies adopted by Resolution No. 2013-65, and any and all prior and/or subsequent resolutions, policies or amendments thereto:

BE IT FURTHER RESOLVED that the Board of Directors does hereby adopt the District's Financial Management Policy No. 5.13 – Financial Audit Policy, attached hereto and made a part hereof, to be effective immediately.

PASSED AND ADOPTED this 23rd day of January, 2019 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

CALAVERAS COUNTY WATER DISTRICT

_____
Russ Thomas
President, Board of Directors

ATTEST:

_____
Rebecca Hitchcock, Clerk to the Board

Adopted 12/08/04
Revised 01/30/08 (Res.2008-09)
Revised 10/09/13 (Res.2013-63)

5.13.1 Purpose

The policy is intended to provide guidelines and consistency in the employment of an independent accounting firm to perform an audit of the District's financial statements, and, as required, more specialized, or special audits as deemed necessary to assure the integrity of the District's moneys, assets, accounts and records.

5.13.2 Policy

This policy applies to all District employees and the Board of Directors who are involved in the annual audit of the District's financial statements, including the selection and engagement of an independent accounting firm.

5.13.3 General Provisions

5.13.31 All such audits shall be made by a certified public accountant firm experienced in the audit of California public agencies and water and wastewater districts.

5.13.32 The audit firm shall have no personal interest, either direct or indirect, in the fiscal affairs of the District or any of its officers, and may not provide services to the District other than audit services.

5.13.33 The Board of Directors shall, through a competitive bid process, select an independent audit firm at least once every five (5) years. The contract for auditing services will be at the discretion of the Board of Directors and be for a period not exceeding five (5) years. Furthermore, the selected firm can only be engaged for one five (5) year period during any fifteen (15) year time frame.

5.13.34 Finance staff and the General Manager will review the qualifications of prospective firms and make a recommendation to the Board of Directors. The audit contract, and any extensions, will be awarded by the Board of Directors.

5.13.35 The selection process and designation to perform the annual audit shall be completed not later than 30 days before the beginning of the fiscal year for which the audit is to be performed.

5.13.36 The audit shall be prepared in accordance with United States generally accepted auditing standards, the standards for financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, and the State Controller's *Minimum Audit Requirements for California Special Districts*, and will include tests of the District's accounting records and such other auditing procedures as might be considered necessary for the expression of an audit opinion.

5.13.37 The annual audit shall be comprehensive of all departments and agencies, and shall include:

- Independent Auditor's Report on the financial statements;
- Management Discussion and Analysis (prepared by District staff);
- Government-Wide financial statements prepared in accordance with current government accounting standards;
- Fund financial statements;
- Notes to financial statements;
- Required and other supplementary information;
- Any requirements set forth in future Government Accounting Standards Board ("GASB") pronouncements;
- Independent Auditor's Report on Compliance and on Internal Controls Over Financial Reporting Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards; and
- Management letter addressed to the District's Board of Directors, including a statement of audit findings and recommendations affecting the financial statements, internal control, accounting, accounting systems, legality of actions, other instances of noncompliance with laws and regulations, and any other material matters.

5.13.38 The annual audit and written evaluation report shall be submitted to the Board of Directors at a regular Board meeting within six (6) months of year end closing. The completed and accepted audit shall be available to all required and interested parties and shall be acted on by the Director of Administrative Services as appropriate and necessary to assure full compliance with Generally Accepted Accounting Principles and state law.

Approved 02/11/04
Revised 01/30/08 (Res. 2008-09)
Revised 07/28/10 (Res. 2010-51)
Revised 01/30/13 (Res. 2013-12)
Revised 10/09/13 (Res. 2013-65)

5.00.1 Financial Reporting/Management Policies

Accounting practices shall conform to state law and to Generally Accepted Accounting Principles (GAAP) established by the Governmental Accounting Standards Board (GASB). The District should apply all current standards issued by the Financial Accounting Standards Board (FASB) not in conflict with standards issued by the Governmental Accounting Standards Board.

5.00.1.1 Accounting, Auditing and Financial Reporting

5.00.1.1.1 The District is to maintain a uniform system of accounts that conforms to the California Budgeting Accounting and Reporting Systems (BARS) established by the State Auditor's Office.

5.00.1.1.2 All financial and budgetary documents will be produced in accordance with Generally Accepted Accounting Principles (GAAP) as outlined by the Governmental Accounting Standards Board (GASB) in addition to being in conformity with the accounting systems prescribed by the State Controller's office and the state regulations governing special districts.

5.00.1.1.3 The District is to account for the water and wastewater utilities as separate enterprise funds that are intended to be primarily self-supporting through user charges.

5.00.1.1.4 The District's accounting system will maintain records on a basis consistent with accepted standards for Enterprise Fund accounting. The District will strive to receive the Certificate of Achievement for Excellence in Financial Reporting from the Government Financial Officer's Association.

5.00.1.1.5 The water and wastewater enterprise funds shall each be segregated in separate accounts and utilized in accordance with the legal requirements stated in state law, resolutions, bond covenants and other legal documents.

5.00.1.1.6 The District will employ an independent accounting firm to perform an annual audit of the District's financial statements. The completed and accepted audit shall be available to all required and interested parties.

5.00.1.1.7 Procedures will be followed that will ensure that proper authorization has been obtained for all transactions of a financial nature as per the District's purchasing policy specified in Appendix A.

Agenda Item

DATE: January 23, 2019

TO: Board of Directors

FROM: Jeffrey Meyer, Interim General Manager

SUBJECT: FY 2018-19 Mid-Year Budget Review and Budget Adjustments

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RECOMMENDED ACTION:

Motion _____/_____ adopting Resolution No. 2019 -____ amending the Fiscal Year 2018-19 Operating Budget.

SUMMARY:

The mid-year budget review is an analysis of the financial status of the District's operating funds covering the six-month period of July 1, 2018 through December 31, 2018. This review provides an analysis of actual revenues and expenditures compared to the FY 2018-19 adopted budget, and provides year-end projections. The Mid-Year Budget Review also sets the stage for the next fiscal year by:

- Identifying variances to budget and the impact they may have on future budgets;
- Allowing the Board to provide staff direction on types of services or programs the Board would like to see emphasized or de-emphasized for future budget years.

REVENUES

As of December 31, 2018, with 50% of FY 2018-19 elapsed, the District has recorded 42.55% of total projected revenues. Operating revenues include water and wastewater sales, and other miscellaneous operating revenues. Non-operating revenues include revenues such as property tax, stand-by fees, hydropower sales, investment income and other miscellaneous revenues such as grant reimbursements. Please note that the year-to-date revenues do not include either property tax or stand-by fee revenues as both are distributed by the County in February and May, with a supplemental disbursement in August. Some highlights are:

- Wastewater sales, which are based on flat rates (no usage charges) are at 49.31% of original projections.
- Water sales are at 50.96% of budget. Water sales include both base rate and consumptive charges. Water consumption and consumptive revenues are up slightly over last year, but it is too early to determine if this trend will continue.

It is projected that by year-end the total operating revenues will be at or slightly greater than the budgeted amount of $16,469,363.

TRANSFERS

Per District policy, transfers were budgeted from Capital R&R to the operating budget to fund debt service payments for the 2014 Umpqua Water and Sewer Loans, the USDA Reach 3a Bond, and an interest payment on the Internal Operation Headquarters Building loan. Additionally, the budget includes transfers from the Interest Reserve Fund (Fund 108) for capital equipment/capital outlay projects and for a Board approved budget adjustment to fund six (6) months of a new Customer Assistance Program ($30,000). There are also transfers from the water and sewer Capital R&R and CIP funds to cover Capital R&R and CIP project related salary and benefit costs.

Capital R&R Funds (Umpqua Loans)	$1,577,417
Capital R&R Funds (USDA Reach 3a Bond)	101,243
Interest Reserve Fund (OP HQ Loan)	75,000
Interest Reserve Fund (Customer Assistance Program)	30,000
Interest Reserve Fund (Capital Equipment/Outlay)	370,000
Capital R&R Funds (Capital R&R Projects)	464,612
CIP Funds (CIP Projects)	90,644
Total Transfers from Reserves:	$ 2,708,337

EXPENDITURES

Operating expenditures (excluding debt service) for the first six months of FY 2018-19 are at 46.28% of adopted budget. This does not take into consideration encumbrances for purchases made during the period but not yet invoiced or paid, nor does it include costs for services or goods received during the first six months but not yet paid.

The largest segment of the District's operating budget, personnel services, is currently at 48.86% of budget. Overtime costs are also projected to exceed the budget, primarily a result of a high number of after-hours pipeline and leak repair efforts in the Utilities Department.

Operating services and supplies are currently at 49.14% of budget, while the capital outlay budget for vehicle/equipment purchases and projects is at 14.33% of budget. This is largely reflective of the timing of purchases and projects, including one capital outlay item budgeted in FY 2017-18 but not delivered until FY 2018-19.

CAPITAL OUTLAY

The adopted FY 2018-19 Capital Outlay budget is $565,000, which includes $10,000 for an antenna replacement (Administrative Services) and $555,000 in the Utilities department for three replacement trucks, a replacement van, a hydro-excavator, a snow ATV, two handheld meter readers, and PRV Vault replacements at Sawmill in Copper Cove. In

addition to these scheduled projects/purchases, FY 2017-18 carryover funds were used for a replacement computer sever system for Administrative Services ($10,165).

Staff will be requesting the Board's concurrence to repurpose the $300,000 budgeted for the hydro-excavator in the Utilities budget to cover unanticipated regulatory studies and expenses under services and supplies and projected overtime expenses and equipment needs related to repairing the significant backlog of district-wide water distribution and service line leaks. The balance of the Capital Outlay budget funds will be expended by the end of the fiscal year.

DEBT SERVICE

The District has issued debt to fund its Capital Replacement and Renovation (Capital R&R) Program, pay the USDA Bond for the Reach 3a Project, pay the debt associated with the USBR New Hogan loan, and refinance prior debt and its PERS Side Fund Obligation. Additionally, for FY 2018-19, the District started paying off the principal portion of the Admin Building Loan. All payments have been made as scheduled. The following is a summary of the District's debt position as of June 30, 2018:

Debt Service Detail

	Original Issue Amount	Balance June 30, 2017	Principal Retirement	Projected Balance June 30, 2018	Current Portion
Water Fund					
BBVA Series 2013 Refunding Water Revenue Loan	$7,188,541	$442,726	(442,726)	$0	-
Umpqua Bank 2014 Capital R&R Water Loan	4,061,933	4,061,933	(650,340)	3,411,593	1,113,008
U.S. Bureau of Reclamation Note - Hogan	1,786,474	322,291	(44,682)	277,609	39,917
Umpqua Bank - PERS Side Fund Obligation	1,461,346	356,576	(184,443)	172,133	172,133
Internal Operations Headquarters Loan	2,220,000	2,220,000	-	2,220,000	416,641
Total Water Fund Loans and Notes	16,718,294	7,403,526	(1,322,191)	6,081,335	1,741,699
Sewer Fund					
BBVA Series 2013 Refunding Sewer Revenue Loan	310,459	19,120	(19,120)	-	-
Umpqua Bank 2014 Capital R&R Sewer Loan	2,337,528	1,494,792	(347,418)	1,147,374	374,311
Umpqua Bank VacCon Truck Loan	328,623	68,939	(68,939)	-	-
U.S. Bureau of Reclamation Note - Hogan	627,680	113,237	(10,650)	102,587	14,764
Umpqua Bank - PERS Side Fund Obligation	513,446	200,573	(115,790)	84,783	84,783
Internal Operations Headquarters Loan	780,000	780,000	-	780,000	154,100
Total Sewer Fund Loans and Notes	4,897,736	2,676,661	(561,917)	2,114,744	627,958
Public Financing Authority Fund					
Series 2016 Water Enterprise Revenue Bonds	2,622,000	2,622,000	(42,700)	2,579,300	43,700
Total Water and Sewer Fund Loans and Notes	$24,238,030	$12,702,187	$ (1,926,808)	$10,775,379	$2,413,357

OPERATIONS SUMMARY

It is estimated that year-end total operating expenditures will be approximately $61,000 over budget. This is mainly due to unanticipated regulatory studies and the White Pines Lake cleanup effort in services and supplies, as well as overtime associated with clearing the backlog of water distribution and service line leaks. In regards to capital outlay, a replacement server purchase budgeted in FY 2017-18 did not arrive until FY 2018-19, and this expenditure will be covered with FY 2017-18 carry-over funds.

Revenue increases in other operating and investment income earnings are expected to offset a portion of the operating shortfall. However, transfers from the Capital R&R and CIP funds are projected to be $61,000 below budget. Finance will be working closely with all departments to monitor and control costs as required.

CAPITAL IMPROVEMENT PROGRAM (CIP)

Water

The adopted Water CIP budget for FY 2018-19 is $8,632,506. This includes three main projects; the Ebbetts Pass Reach 1 Water Line Replacement Project ($1.5 million), $2.8 million for the Jenny Lind Water Treatment Plant Pretreatment Project (75% grant funded), and $1 million for an AMR/AMI Radio Read Meter Program. Also included in the budget are various R&R projects, including the Ebbetts Pass Techite Water Line Replacement Project ($500,000), clearwell and tank replacement projects ($755,000), the annual pipeline replacement program ($200,000), and various pump station, tank replacement and SCADA improvement projects totaling $1.7 million.

All projects are summarized in the attached CIP schedule.

Wastewater

The Wastewater CIP budget for FY 2018-19 is $3,644,700. Projects funded by the Wastewater Capital R&R program include the Copper Cove Lift Station 8, 12, 13 and Force Main Bypass ($300,000), Copper Cove Lift Station 15 & 18 Renovations ($300,000), the Vallecito I&I/Equalization Project and Recycled Water Distribution Projects ($100,000 and $244,700 – partial grant funded) and the Forest Meadows UV System Replacement Project ($250,000). Other projects the West Point/Wilseyville Consolidation Project (grant funded), Wallace Treatment Plant Renovations (assessment district funding), and lift station and facility rehab projects ($1.8 million).

A summary of the Wastewater CIP program is attached.

FINANCIAL CONSIDERATIONS:

Staff recommends a budget adjustment to the FY 2018-19 Operating Budget to recognize the payment and reimbursement for all state and federal permitting costs associated with the North Fork and New Hogan hydro-electric projects (attached). This budget adjustment is in response to a request from our auditors that we budget for both the fees and reimbursements instead of our past practice of offsetting the expenditures when reimbursements are received.

It is anticipated that higher operating revenues will help offset the operating shortfall. Staff will be monitoring both overtime and expenditures to minimize any cost overruns.

Attachment: Resolution 2019 - __ Amending the FY 2018-19 Operating Budget
-Budget Adjustment – Number 19-03
- FY 2018-19 Mid-Year Budget Review Schedule

RESOLUTION NO. 2019-

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CALAVERAS COUNTY WATER DISTRICT

AMENDING THE FISCAL YEAR 2018-19 OPERATING BUDGET

WHEREAS, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopted Resolution 2018-27 on June 27, 2018 approving the Fiscal Year 2018-19 Operating Budget in the amount of $19,144,822 and amended the FY 2018-19 Operating Budget by Resolution 2018-65 on December 5, 2018; and

WHEREAS, the Board of Directors has, as a result of the review, identified those programs and expenditures that will be most beneficial to the needs of the Calaveras County Water District.

WHEREAS, the Calaveras County Water District Operating Budget requires an adjustment to amend the proposed expenditures to reflect the District's priorities; and

WHEREAS, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT does hereby find that it is in the best interest of the Calaveras County Water District to amend the adopted FY 2018-19 Operating Budget accordingly.

NOW, THEREFORE BE IT RESOLVED, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT adopts an amendment to the Fiscal Year 2018-19 Operating Budget as set forth in Budget Adjustment 19-03, attached hereto and made a part hereof, and authorizes the Interim General Manager to record the appropriate accounting entries.

PASSED AND ADOPTED this 23rd day of January, 2019 by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Russ Thomas
President, Board of Directors

ATTEST:

_____
Rebecca Hitchcock, Clerk to the Board

Calaveras County Water District
Fiscal Year 2018-19
Budget Adjustment - Number 19-03

	EXPENDITURES			REVENUES		
	Department	**Account**	**Amount**	**Department**	**Account**	**Amount**
1	Department 59 Administrative Services	Revenues Other Non-Operating Revenue	393,737	Department 50 Non-Departmental	Services and Supplies Federal Dam & Admin Fees	393,737
2	Department 59 Administrative Services	Revenues Other Non-Operating Revenue	327,381	Department 60 Water Resources	Services and Supplies State/Federal/County Fees	327,381
	(Fund 101)			(Fund 101)		
			721,118			**721,118**

Descriptions (for additional information please see staff report)

1 Increase Other Non-Operating Revenues in Department 59 - Administrative Services (Fund 300) by $393,737 and increase appropriations by $393,737 in the Non-Departmental Operating Budget (Fund 300) to account for the FERC Annual Administrative Charges. The FERC charges are paid by the District and are reimbursed by NCPA (North Fork Project) and MID (New Hogan).

2 Increase Other Non-Operating Revenues in Department 59 - Administrative Services (Fund 300) by $327,381 and increase appropriations by $327,381 in the Water Resources Operating Budget (Fund 300) to account for the various state, federal and county fees paid by the District for the North Fork Project and the New Hogan hydro project. The fees are reimbursed by NCPA (North Fork Project) and MID (New Hogan).

Calaveras County Water District
FY 2018-19 Mid-Year Budget Review
As of December 31, 2018

REVENUE FOR OPERATIONS					
Description	Original Budget	As of Dec 31, 2018	Percent Budget	Projected Year-End	Projected Variance
Operating Revenue					
Water Sales	7,813,288	3,981,404	50.96%	7,803,552	(9,736)
Wastewater Sales	4,496,488	2,217,072	49.31%	4,500,656	4,168
Other	485,800	312,233	64.27%	546,408	60,608
Total Operating Revenue	**12,795,576**	**6,510,709**	**50.88%**	**12,850,616**	**55,040**
Non-Operating Revenue					
Stand-By Fees	132,500	-	0.00%	132,500	-
Property Taxes	2,613,751	-	0.00%	2,613,751	-
Investment Income	86,536	47,690	55.11%	95,380	8,844
Grant Revenue	-	-	--	-	-
Other Revenue	841,000	449,987	53.51%	854,975	13,975
Total Non-Operating Revenue	**3,673,787**	**497,677**	**13.55%**	**3,696,606**	**22,819**
Total Revenues	**16,469,363**	**7,008,386**	**42.55%**	**16,547,222**	**77,859**

TRANSFERS					
Transfers In for Capital R&R Debt Service	1,577,417	792,987	50.27%	1,577,417	-
Transfers In for USDA Bond Debt Service	101,243	72,717	71.82%	101,243	-
Transfer In for OP HQ Interest Payment	75,000	-	0.00%	75,000	-
Transfer In for Customer Assist Program	30,000	-	0.00%	30,000	-
Transfers In for Capital Equip/Projects	370,000	-	0.00%	370,000	-
Transfers In for Capital R&R Projects	464,612	196,387	42.27%	432,051	(32,561)
Transfers In for CIP Projects	90,644	28,123	0.00%	61,870	(28,774)
Total Transfers	**2,708,916**	**1,090,214**	**40.25%**	**2,647,581**	**(61,335)**

EXPENDITURES					
Description	Original Budget	As of Dec 31, 2018	Percent Budget	Projected Year-End	Projected Variance
Personnel Services	10,080,306	4,924,908	48.86%	10,037,926	(42,380)
Services and Supplies	5,792,532	2,846,193	49.14%	5,990,746	198,214
Capital Outlay	565,000	80,959	14.33%	469,959	(95,041)
Debt Service	2,736,984	1,022,007	37.34%	2,736,984	-
Total Expenditures	**19,174,822**	**8,874,067**	**46.28%**	**19,235,615**	**60,793**
Revenue & Transfers less Expenditures	**3,457**	**(775,467)**		**(40,812)**	**(44,269)**

Calaveras County Water District
FY 2018-19 Mid-Year Operating Budget Review

	Expenditures by Department - Original Budget				
	Personnel	Svcs/Supplies	Capital Outlay	Debt Service	Total
Board of Directors	131,339	33,750	-	-	165,089
General Management	668,934	343,525	-	-	1,012,459
Administrative Services	1,173,220	409,235	10,000	-	1,592,455
Engineering/Tech Svcs	1,111,613	21,300	-	-	1,132,913
Utility Services	6,662,678	3,459,750	555,000	-	10,677,428
Water Resources	332,522	372,890	-	-	705,412
Non-Departmental	-	1,152,082	-	2,736,984	3,889,066
Total Budget	**10,080,306**	**5,792,532**	**565,000**	**2,736,984**	**19,174,822**

	Expenditures by Department - as of December 31, 2018				
	Personnel	Svcs/Supplies	Capital Outlay	Debt Service	Total
Board of Directors	51,562	5,499	-	-	57,061
General Management	356,764	194,128	-	-	550,892
Administrative Services	594,096	193,376	10,165	-	797,637
Engineering/Tech Svcs	553,539	6,541	-	-	560,080
Utility Services	3,199,387	1,698,695	70,794	-	4,968,876
Water Resources	169,560	302,391	-	-	471,951
Non-Departmental	-	445,563	-	1,022,007	1,467,570
Total Expenditures	**4,924,908**	**2,846,193**	**80,959**	**1,022,007**	**8,874,067**

	Expenditures by Department - Year End Projections				
	Personnel	Svcs/Supplies	Capital Outlay	Debt Service	Total
Board of Directors	110,124	30,109	-	-	140,233
General Management	666,706	350,705	-	-	1,017,411
Administrative Services	1,223,990	431,343	20,165	-	1,675,498
Engineering/Tech Svcs	1,140,092	20,196	-	-	1,160,288
Utility Services	6,555,817	3,636,958	449,794	-	10,642,569
Water Resources	341,197	378,709	-	-	719,906
Non-Departmental	-	1,142,726	-	2,736,984	3,879,710
Total Year End	**10,037,926**	**5,990,746**	**469,959**	**2,736,984**	**19,235,615**
		-			
Variance to Budget	**(42,380)**	**198,214**	**(95,041)**	**-**	**60,793**

Capital Improvement Program
Water and Wastewater Projects
FY 2018-19 Mid Year Review

Water Projects **Project Description**	Total Project Cost	Cash Flow FY 18-19	Expenditures thru 12/31/18	Funding FY 18-19			
				Expansion Funds	Reserves	Capital R & R	AD/Other Grants
Ebbetts Pass Techite Water Line Replacement	$ 1,250,000	$ 500,000	$ 3,633	$ -	$ -	$ 500,000	$ -
Ebbetts Pass Reach 1 Water Line Replacement	5,000,000	1,500,000	120,978	500,000	-	1,000,000	-
San Antonio Creek Water Storage Restoration	4,000,000	150,000	-	-	-	150,000	-
Jenny Lind WTP PreTreatment Facility	4,000,000	2,827,553	1,969,082	-	-	1,007,553	1,820,000
Jenny Lind Clearwell #2 / Repair & Paint	200,000	183,888	-	-	-	183,888	-
Larkspur Tank / Repair & Paint	250,000	227,139	-	-	-	227,139	-
Wallace Tanks / Repair & Paint	350,000	343,926	-	-	-	343,926	-
Ebbetts Pass Redwood Tanks HMGP	2,800,000	400,000	6,678	-	-	100,000	300,000
Ebbetts Pass WTP Filter Rehab. & Painting	300,000	300,000	-	-	-	300,000	-
Hunters Raw Water Pumps Renovations	1,000,000	500,000	-	-	-	500,000	-
Big Trees Pump Stations 1, 4 & 5 Replacement	700,000	150,000	-	-	-	150,000	-
Lake Tulloch Raw Water Pumps	100,000	100,000				100,000	
West Point SCADA System Improvements	200,000	100,000				100,000	
Wallace SCADA System Improvements	200,000	100,000				100,000	
Arc Flash Assessment	500,000	50,000				50,000	
AMR/AMI Radio Read Meter Program	4,000,000	1,000,000	-	-	-	1,000,000	-
Pipeline Replacement	1,000,000	200,000	293	-	-	200,000	-
Total Water Projects	**$ 25,850,000**	**$ 8,632,506**	**$ 2,100,664**	**$ 500,000**	**$ -**	**$ 6,012,506**	**$ 2,120,000**

Capital Improvement Program
Water and Wastewater Projects
FY 2018-19 Mid Year Review

Wastewater Projects **Project Description**	Total Project Cost	Cash Flow FY 18-19	Expenditures thru 12/31/18	Funding FY 18-19			
				Expansion Funds	Reserves	Capital R & R	Grants AD/Other
West Point/Wilseyville Consolidation Project	$ 4,750,000	$ 500,000	$ -	$ -	$ -	$ -	$ 500,000
CC Lift Station 8, 12, 13 & Force Main Bypass	1,500,000	300,000	40,758	-	-	300,000	-
CC Lift Station 15 & 18 Renovations	1,000,000	300,000	39,832	-	-	300,000	-
Vallecito Recycled Water Distribution Project	280,000	280,000	9,719	-	-	145,600	134,400
Vallecito I & I / Equalization Improvements	400,000	100,000	-	-	-	100,000	-
Wallace Treatment Plant Renovations	250,000	125,000	-	-	-	-	125,000
Forest Meadows UV System Replacement	250,000	250,000	-	-	-	250,000	-
Arnold WWTP Rehab./Expansion	2,350,000	350,000		-	-	350,000	
Huckleberry Lift Station Rehab./Expansion	400,000	200,000		60,000	-	140,000	
La Contenta WWTP Rehab/Expansion/Disposal	4,650,000	650,000		210,000	440,000	-	
Copper Cove WWTP/Phase A - Title 22 Tertiary	5,500,000	150,000		75,000	-	75,000	
Copper Cove WWTP/Phase B - Denitrification	6,500,000	150,000		75,000	-	75,000	
Forest Meadows Sludge Facility Upgrades	100,000	50,000	-	-	-	50,000	-
Southworth Collection System / I&I Mitigation	100,000	50,000	-	-	-	50,000	-
Indian Rock East Sand Filter Rehab.	150,000	150,000	-	-	-	150,000	-
Arc Flash Assessment	500,000	75,000	-	-	-	75,000	-
Total Wastewater Projects	**$ 28,680,000**	**$ 3,680,000**	**$ 90,309**	**$ 420,000**	**$ 440,000**	**$ 2,060,600**	**$ 759,400**

Agenda Item

DATE: January 23, 2019

TO: Jeffrey Meyer, Interim General Manager

FROM: Joel Metzger, Manager of External Affairs, Conservation and Grants

RE: Grants Program Update

RECOMMENDED ACTION:

Information/discussion only.

SUMMARY:

State and federal grants funds have been a major funding component of the District's Capital Improvement Program (CIP) and have allowed the District to complete projects that would otherwise have been delayed or not completed. Staff looks for grants that support the District's Five-Year Capital Improvement Program (CIP) plan and can leverage the ratepayer funded Capital Renovation and Replacement (Capital R&R) funds.

Grant applications must be carefully evaluated before being pursued. Due to limited resources and budget constraints, grants that do not support the District's CIP plan are not viewed as priorities. Furthermore, the District must be very careful when pursuing grants that have loan components as these loans can negatively impact the District's debt coverage ratios and limit future debt issuances. Grants with loan forgiveness provisions or a local match component funded by Capital R&R funds are preferred.

Over the past 10 years, the District has been successful is obtaining more than $13 million in grant funding in support of total project costs of $19 million (attached), including:

- Vallecito/Douglas Flat Wastewater Treatment Plant Improvements
- West Point Clearwell, Storage Tank and Pipeline Replacement Project
- West Point Pipeline Replacement Projects, Phase A and B
- Big Trees Village Redwood Tanks Replacement Project
- Reach 3a Water Transmission Replacement Project
- Jenny Lind Water Treatment Plant Pretreatment Facility

Staff has submitted $6.85 million in grant applications for the West Point/Wilseyville Sewer Consolidation project and the Ebbetts Pass Redwood Tanks Replacement project.

FINANCIAL CONSIDERATIONS:

None.

Attachment: *Calaveras County Water District 10-Year Grants Program Summary*

CCWD Grants Program: 2009 - 2019

Year	Project	Funding Agency	Grant Amount	District Match	Total Project Cost
2010	West Point Clearwells, Storage Tank & Pipeline	ARRA	$1,750,000	$0	$1,750,000
2012	West Point Leak Detection Equipment	DWR	$250,000	$0	$250,000
2012	Vallecito / Douglas Flat Wastewater Treatment Plant	SRF	$4,400,000	$0	$4,400,000.00
2013	West Point Pipeline Replacement (Phase A)	DWR	$1,470,000	$0	$1,470,000
2013	West Point Pipeline Replacement (Phase B)	USDA	$990,000	375,000	$1,365,000
2015	Vallecito / Douglas Flat Recycled Water Distribution	DWR	$188,000	$72,000	$260,000
2014	West Point / Wilseyville WWTP Consolidation Planning	SRF	$200,000	$0	$200,000
2016	Big Trees Village Redwood Tanks Replacement	Cal OES / FEMA	$1,100,000	$370,000	$1,470,000.00
2017	Reach 3A Pipeline Replacement	USDA	$1,380,000	$3,920,000.00	$5,300,000.00
2017	Jenny Lind Pretreatment Facility	Cal OES / FEMA	$3,400,000	$1,100,000	$4,500,000
2017	Energy Efficency Upgrades	CPPA	$6,700	$0	$6,700
2018	Local Hazard Mitigation Plan Update	Cal OES / FEMA	25,500	$8,500	$34,000
		Totals	**$13,160,200**	**$5,845,500**	**$19,005,700.00**

Submitted Grant Applications

Year	Project	Funding Agency	Grant Amount	District Match	Total Project Cost
2014	West Point / Wilseyville WWTP Consolidation	SRF	$4,750,000	$0	$4,750,000
2018	Ebbetts Pass Redwood Tanks Replacement	Cal OES / FEMA	$2,100,000	$700,000	$2,800,000
		Totals	**$6,850,000**	**$700,000**	**$7,550,000**

Agenda Item

DATE: January 23, 2019

TO: Jeffrey Meyer, Interim General Manager

FROM: Peter Martin, Manager of Water Resources

SUBJECT: Adoption of the 2018 Supplemental West Point Water System Master Plan

RECOMMENDED ACTION:

Motion:_____/_____ adopt Resolution No. 2019 - _____ adopting the 2018 Supplemental West Point Water System Master Plan Update and directing staff to submit report to State Water Resources Control Board Division of Water Rights.

SUMMARY:

Consultants from KASL Engineering and Western Hydrologics, Inc. presented the Draft Master Plan to the Board of Directors on November 14, 2018. The plan supplements the West Point Master Plan, adopted in May 2005 by Resolution 2005-30, and is narrowly focused on water supply reliability and redundancy for the 20-year planning horizon. Further, the supplemental Master Plan is responsive to the request for more information by State Water Resources Control Board staff regarding the District's request for an extension of time for the Bear Creek water right permit 15452, a tributary to the Middle Fork of the Mokelumne River.

Board and public feedback provided on the Draft Supplemental Water System Master Plan, at the November 14 meeting has been incorporated into the revised draft plan for final consideration. The revised Final Draft of the plan has been made available on the District's website located here: https://ccwd.org/wp-content/uploads/2013/12/CCWD-West-Point-Master-Plan_November-30-2018_FINAL.pdf.

In addition to the adoption of the plan, staff is recommending that the Board provide direction to submit the final plan to the State Water Resources Control Board for the purposes of ongoing work associated with a request for extension of time for Permit 15452, Bear Creek, tributary to the Middle Fork of the Mokelumne River.

FINANCIAL CONSIDERATIONS:

None

Attachments: Resolution 2019-__ Adopting the 2018 Supplemental West Point Water System Master Plan Update
- 2018 Supplemental West Point Water System Master Plan Update

RESOLUTION NO. 2019 -

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE CALAVERAS COUNTY WATER DISTRICT

ADOPTING THE 2018 SUPPLEMENTAL WEST POINT WATER SYSTEM MASTER PLAN UPDATE

WHEREAS, the Calaveras County Water District recognizes the importance of planning for the water supply needs of the West Point Water Service Area; which includes the communities of Bummerville, West Point and Wilseyville; and

WHEREAS, the plan update is meant to be supplemental to the West Point Master Plan adopted in May 2005 by Resolution 2005-30, and is narrowly focused on water supply reliability and redundancy for the 20-year planning horizon; and

WHEREAS, the Board of Directors received the Draft 2018 Supplemental West Point Water Master Plan Update at a public meeting on November 14, 2018 at which time a presentation was given for the purpose of receiving Board, staff, and public comment which have been incorporated into the Final Draft being submitted to the Board for consideration; and

WHEREAS, the Board of Directors of Calaveras County Water District recognizes that funding of the costs of facilities recommendations within said plan update will be addressed by a financial analysis and evaluation of proposed capacity fees; and

WHEREAS, the supplemental Master Plan is responsive to the request for more information by staff from the State Water Resources Control Board regarding the District's request for an extension of time for the Bear Creek water right permit 15452, a tributary to the Middle Fork of the Mokelumne River; and

NOW, THEREFORE BE IT RESOLVED, the Board of Directors of the CALAVERAS COUNTY WATER DISTRICT formally adopts the 2018 Supplemental West Point Water Master Plan Update;

BE IF FURTHER RESOLVED, Board of Directors of the CALAVERAS COUNTY WATER DISTRICT direct staff to submit the final plan to the State Water Resources Control Board for the purposes of ongoing work associated with a request for extension of time for Water Right Permit 15452.

PASSED AND ADOPTED this 23rd day of January 2019 by the following vote:

/
/

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Russ Thomas, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock
Clerk of the Board

2018 Supplemental West Point Water System Master Plan

Calaveras County Water District

Calaveras County, California

Prepared for:

Calaveras County Water District
120 Toma Ct.
San Andreas, CA 95249

Prepared by:

KASL Engineering, Western Hydrologics, and ECORP Consulting, Inc.

November 2018

ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, and construction monitoring and reporting.

Citation: ECORP Consulting, Inc. (ECORP). 2018. West Point Water Supply Master Plan. Prepared for Calaveras County Water District, Rocklin, California. November 2018.

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1.0 INTRODUCTION, PURPOSE, AND SCOPE

1.1 Water System Master Plan Background

The Calaveras County Water District (CCWD or District) owns and operates the West Point Water system which provides potable water service to approximately 600 residential and commercial customers located in the Calaveras County communities of West Point, Wilseyville, Bummerville and Railroad Flat. Raw water is supplied to the system with existing diversions from Bear Creek and the Middle Fork of the Mokelumne River. Bear Creek supplies originate from a smaller watershed that is tributary to the Middle Fork of the Mokelumne River. During anything less than above average water years the year-round water supply from Bear Creek has been unreliable. Raw water from the Bear Creek diversion flows, by gravity, to the District's Regulating Reservoir located near the West Point Water Treatment Plant (WTP). CCWD supplements the Bear Creek supply with Middle Fork Mokelumne River water purchased through an agreement with the Calaveras Public Utility District (CPUD). Middle Fork Mokelumne River is pumped to the West Point WTP but can also be temporarily stored in the District's Regulating Reservoir. There is a small dam, Wilson Dam, located upstream of CCWD's Bear Creek Diversion which is non-functioning and does not store any water. Upstream of the District's Middle Fork Mokelumne River Pump Station intake is Schaads Reservoir, owned and operated by the CPUD.

The West Point WTP was improved and expanded in the early 2000s and provides treated water capacity up to one million gallons per day (MGD). This capacity is adequate to serve existing West Point area customers, with additional capacity available to serve existing plus new customers projected through the year 2100. Similarly, treated water storage has been recently expanded at the West Point WTP which adequately meets existing and projected Maximum Day Plus Fire Flows and Peak Hour Demands.

In 2004, the District received a Water System Improvements Final Feasibility Report (HDR, November 2004) which included recommended water supply, storage and distribution improvements for the West Point service area. These elements were also incorporated into the 2005 West Point Water System Master Plan (HDR, May 2005), which is also the last time the Water System Master Plan was updated. Many of the improvements recommended in the 2004 Feasibility Study and 2005 West Point Water System Master Plan have been implemented including water system distribution improvements within West Point and Wilseyville, the Bummerville Water Storage Tank replacement and a new 16-inch diameter HDPE raw water pipeline from the Bear Creek diversion. Water Master Plan elements included in the 2004 Feasibility Report which have not yet been implemented include:

- Improvements to increase the capacity and stability of Wilson Dam
- Improvements to increase the capacity of the West Point Regulating Reservoir
- Possible modifications to the Bear Creek Diversion
- New intake facilities at the Middle Fork Mokelumne River (MFMR) Pump Station
- Improvements to increase the capacity of the MFMR Pump Station
- Replacement of the MFMR pipeline from the new MFMR pump station to the West Point WTP

- Improvements to the Bummerville Distribution System

In addition, the District has identified the construction of additional West Point Water Treatment Facilities for redundancy as a critical Master Plan need.

The above-listed West Point area storage, diversion, piping and pumping improvements to meet existing and future demands in the West Point water service area are the principal subjects of this Master Plan Report.

Recently, ECORP Consulting, Inc. (ECORP) prepared a report which identified Calaveras County's long- term demands for Mokelumne River water (Calaveras County Mokelumne River Long-Term Water Needs Study, ECORP, October 2017). Although that study was a county-wide evaluation, updated long-term demands were specifically determined for the West Point service area and are included in this Study.

Storage improvements for Wilson Dam and the West Point Regulating Reservoir, and capacity improvements to the MFMR pump station and pipeline were recommended for further consideration in the conclusions of the Long-Term Needs Study. Also included in this Study are findings and recommendations in the Long-Term Needs Study regarding CPUD's Schaads Reservoir and improvements to the Middle Fork Mokelumne River water supply. This study is meant to be supplemental to the 2005 West Point Water System Master Plan, in that it is focused on infrastructure necessary for water supply reliability and resiliency.

1.2 Existing Location / Existing Facilities

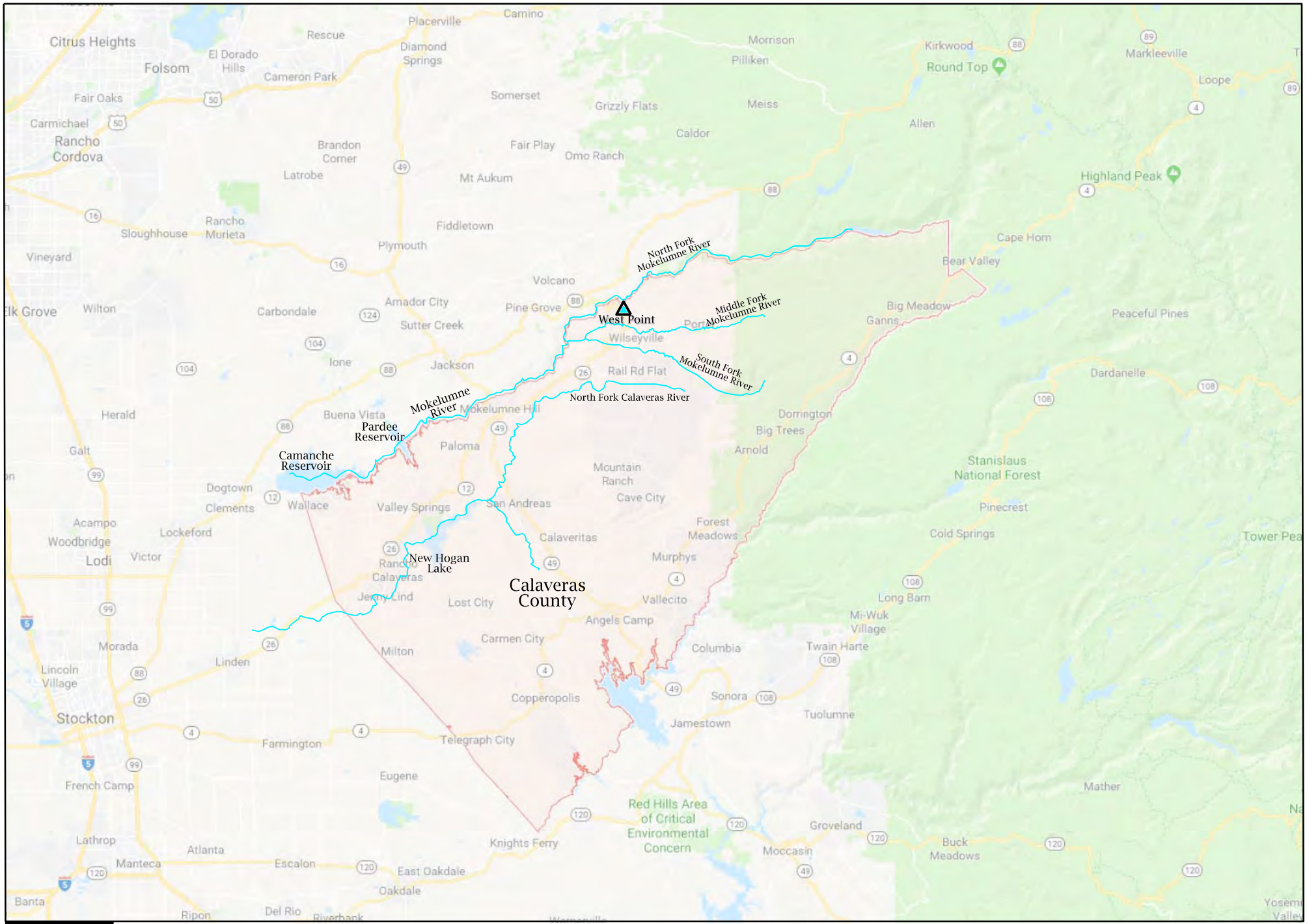
1.2.1 Location

West Point, and surrounding communities served by the West Point Water System, are located in the north central section of Calaveras County and the CCWD boundaries. A location map is presented in **Figure 1.**

The principal facilities discussed in this Supplemental West Point Water System Master Plan; Wilson Dam, the Bear Creek Diversion and Pipeline, the West Point Regulating Reservoir, the Middle Fork Mokelumne River Pump Station and the Middle Fork Mokelumne River raw water supply pipeline are shown with respect to the West Point WTP in **Figure 2**. Existing Schaads Reservoir and a possible Forest Creek - Middle Fork Reservoir site are located upstream of the MFMR diversion.

1.2.2 Wilson Dam

Wilson Dam is located upstream of the District's Bear Creek Diversion. According to available records, Wilson Dam was originally constructed about 1937 by the predecessor to Sierra Pacific Industries, which has landholdings surrounding the small reservoir. The existing embankment is approximately 25 feet high and approximately 150 feet long. The current operating capacity is approximately 25 acre-feet (AF), the facility has no usable outlet control and doesn't allow for the District to actively store and manage water supplies. Due to stability concerns, CCWD lowered the maximum operating levels below 25 feet in the 1990's. With year-round releases and losses due to seepage and lack of functioning outlet controls, there is currently no reliable storage in Wilson Dam when needed during summer-fall months. If Wilson Dam were improved, operated at its available capacity and the original spillway elevation, the size would then subject the facility to Division of Safety of Dams (DSOD) regulations.



FILE: S:\2517-01 West Point. Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_1.dgn
DATE: 3/29/2018

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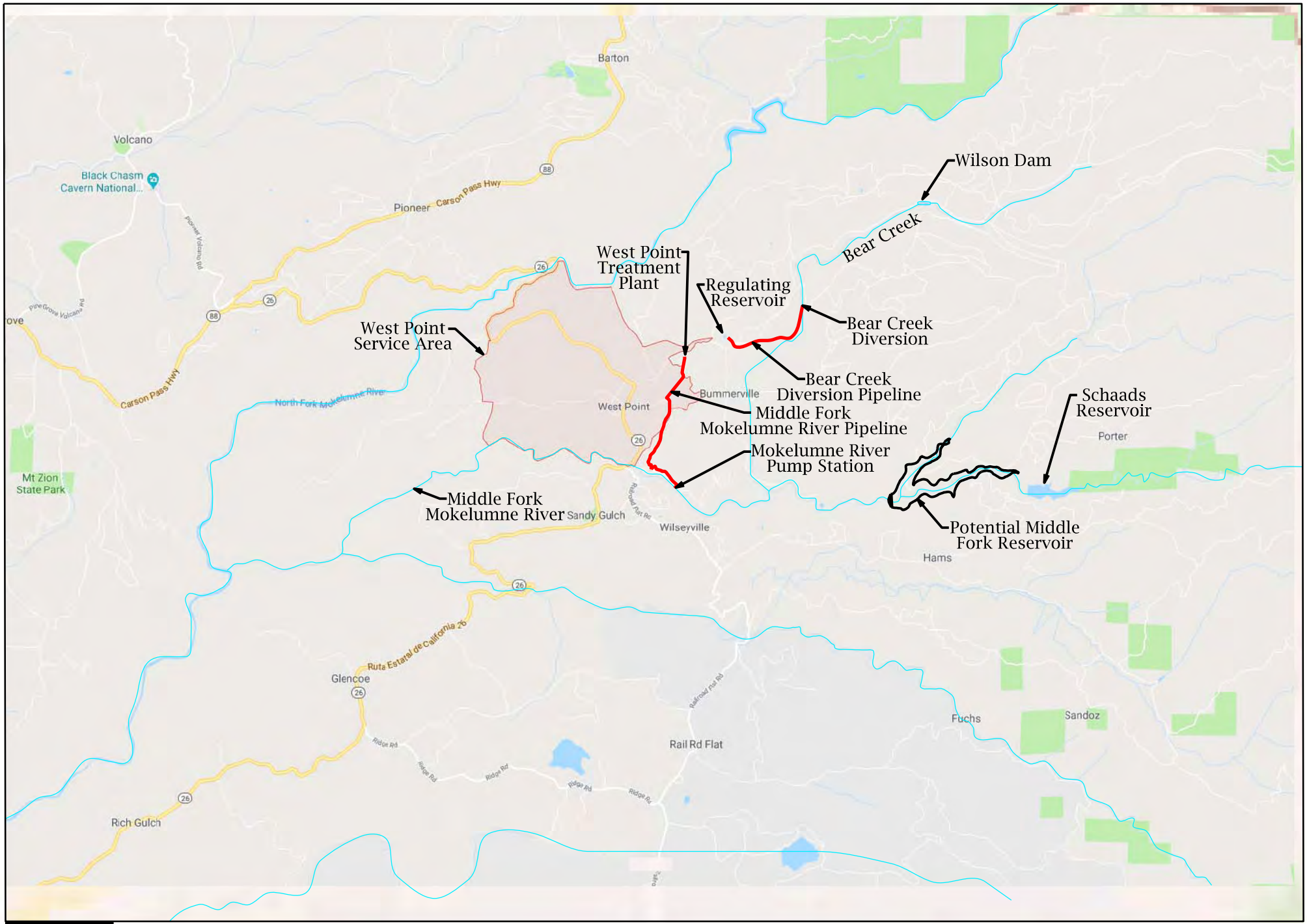
West Point Location Map

FIGURE 1



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DATE: 3/29/2018

CONSULTING KASL ENGINEERS

Location of West Point Facilities

FIGURE 2

Exploratory dam safety investigations conducted by Woodward Clyde-Sherard in 1963, revealed that the original construction of the dam embankment did not make provision for under seepage cutoff. Consequently, the reservoir seeps through the underlying material and along the drain pipe and a sinkhole has developed along the upstream embankment slope. The sinkhole was repaired in late 2017 but does not address the underlying design issues with seepage. Investigations during summer months also confirm that the outlet drain pipe is damaged.

Existing conditions at Wilson Dam are shown in **Figure 3.**

CCWD requested the evaluation of Wilson Dam modifications including consideration of the following alternatives:

1. Repair the existing embankment, correct underlying seepage, replace the damaged outlet works and restore or expand the storage capacity of Wilson Reservoir consistent with the recommendations of the Long-Term Mokelumne River Water Needs Study.

2. Repair the existing embankment, correct underlying seepage, replace the damaged discharge pipe but reduce the height of the embankment and the spillway so that a reduced volume of water is retained but recreational and aesthetic values of the impoundment are kept.

3. Remove the embankment and damaged pipe and pursue a meadow restoration project in the existing upstream impoundment area, and immediately adjacent upstream reaches.

In the Mokelumne River Long-Term Water Needs Study, ECORP determined that restoration of Wilson Dam and expansion to provide up to 50 AF of available storage may be beneficial to the West Point service area and should, therefore, be considered and evaluated further. The benefits and costs of Alternatives 1, 2 and 3 described above will be considered in this Supplement to the Master Plan.

1.2.3 Bear Creek Diversion Structure and Pipeline

Water from Bear Creek is diverted via a permanent concrete check dam to the Bear Creek Diversion structure and pipeline. A culvert pipe equipped with a slide gate is used to regulate the rate of diversion. The check dam frequently fills with sediment. Diverted water is passed to a small concrete stilling basin and then through a Parshall type flume to the Bear Creek Raw Water Supply Pipeline. The flow measuring equipment that was initially installed at the Parshall Flume has been removed. The diversion structure is located in a relatively remote area along the Creek which makes it difficult to secure equipment installed at this location. In addition, where the diversion is located, the depth of the canyon makes it impractical to provide radio transmission of flow conditions to the West Point Water Treatment Plant. Existing conditions at the Bear Creek Diversion Structure are shown in **Figure 4**.

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DATE: 3/29/2018

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Wilson Dam

FIGURE 3

Bear Creek Diversion

FIGURE 4

FILE: S:\2517-01 West Point. Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_4.dgn
DATE: 3/29/2018

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Currently, there is no consistent flow measurement of water entering the Bear Creek Diversion. The District is permitted to divert up to 4 cfs from the Bear Creek and up to 150 acre-feet annum, by storage. The District does measure and record the flow from the Regulating Reservoir to the West Point WTP. This flow can be a mix of Bear Creek and Middle Fork Mokelumne River water. A reliable flow measuring device is needed at the discharge of the Bear Creek pipeline into the Regulating Reservoir. Bear Creek flow metering alternatives are discussed in this Supplement to the Master Plan.

After the 2004 West Point Feasibility Study was completed, CCWD authorized the construction of a replacement of the Bear Creek Diversion Pipeline. The reconstructed pipeline followed the alignment of the pre-existing pipeline which was built by logging corporations and the West Point Ditch Company prior to CCWD ownership of the system beginning in 1954. The existing pipeline is constructed with a 16-inch High Density Polyethylene (HDPE) pipe. No additional improvements to the Bear Creek Pipeline are proposed at this time.

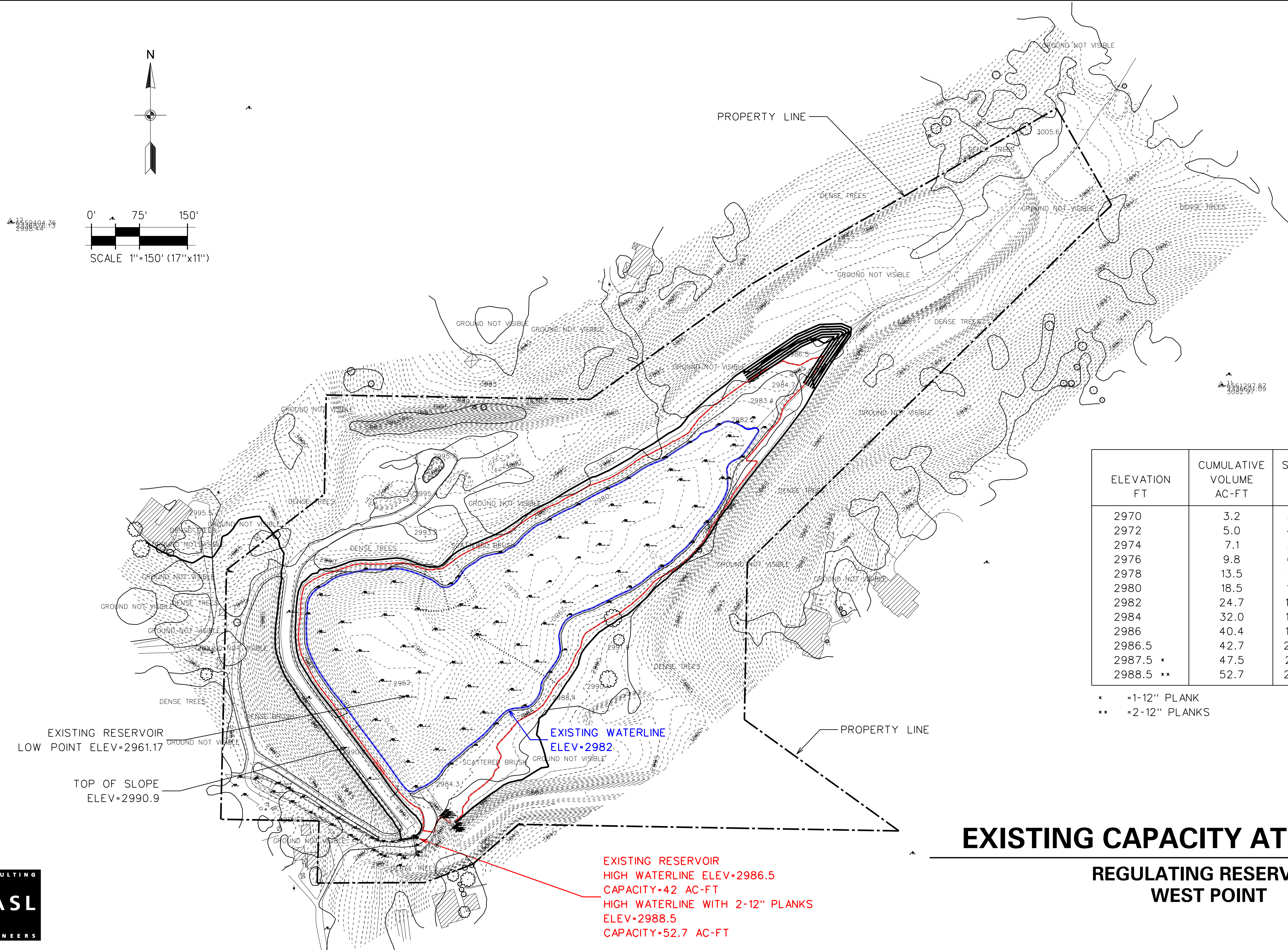
1.2.4 West Point Regulating Reservoir

The West Point Regulating Reservoir was constructed in 1964. The dam is approximately 35 feet high and 500 feet long. Existing conditions are shown in **Figure 5**. Bear Creek water enters the Regulating Reservoir on the south side near the spillway. The reservoir outlet includes a slanted sluice gate connected to a bottom outlet pipe and further, a series of valves which regulate gravity flows to the West Point WTP. Middle Fork Mokelumne River water can also enter the Regulating Reservoir through the reverse direction of the dam's outlet pipe when water from the MFMR Pump Station bypasses the West Point WTP and flows back into the Regulating Reservoir.

Aerial, topographic, and bathymetric surveys of the Regulating Reservoir were conducted in 2017. The top of the existing reservoir embankment is constructed at elevation 2,990.9' (NAVD 88 Datum). The existing reservoir high water line is elevation 2,986.5'. At this high water mark, the existing capacity of the Regulating Reservoir was determined to be 42 AF. DSOD permits the District to increase the storage capacity seasonally through the temporary installation of spillway "stop logs." When two, 12-inch wide stop logs are placed across the spillway, the high water elevation is increased to 2,988.5' and the Regulating Reservoir capacity is increased to 52.7 AF. These are typically installed by CCWD staff in May and removed in late October.

In the *Mokelumne River Long-Term Water Needs Study*, ECORP suggested that the capacity of the Regulating Reservoir be increased to 150 AF. Preliminary Plans and the estimated cost to increase the Regulating Reservoir to this capacity are presented in this Supplemental Master Plan Report.

With no screening of the discharge from the Regulating Reservoir, sediment and other debris have the potential to freely enter the West Point WTP through the existing bottom outlet structure. Water quality and treatability issues also occur with the outlet located near the bottom. As shown in **Figure 6**, the District has placed a floating mechanical aerator near the reservoir outlet to improve dissolved oxygen levels in the water delivered to the WTP when needed. This is in addition to three other existing aerators in the middle of the reservoir that always operate. A floating screened outlet would prevent sediment and debris from entering the West Point WTP from the Regulating Reservoir. With the floating inlet located near the surface outlet rather than near the bottom, the best water quality available in the Reservoir would be delivered to the West Point WTP. Reservoir outlet improvements are presented in this Master Plan Report.



ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
2970	3.2	33,800
2972	5.0	44,700
2974	7.1	52,000
2976	9.8	64,500
2978	13.5	96,700
2980	18.5	121,700
2982	24.7	146,800
2984	32.0	169,200
2986	40.4	197,000
2986.5	42.7	203,000
2987.5 *	47.5	217,500
2988.5 **	52.7	233,600

* =1-12" PLANK
** =2-12" PLANKS

EXISTING CAPACITY AT RESERVOIR

REGULATING RESERVOIR
WEST POINT

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FIGURE 5

FILE: S:\2517-01 West Point Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_6.dgn
DATE: 3/29/2018

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West Point Regulating Reservoir

FIGURE 6

1.2.5 Middle Fork Mokelumne River (MFMR) Pump Station Intake Facilities

A topographic survey of existing conditions and facilities at the MFMR Pump Station and Pump Station intake facilities is presented in **Figure 7**. A concrete diversion structure has been constructed across the Middle Fork at this location. As shown in the photo, **Figure 8,** the existing structure permits stop logs to be placed along the top of the diversion to raise the water level upstream of the pump station intake.

According to plans available for the MFMR Pump Station there are 12-inch diameter collectors located in the gravel stream bed upstream of the diversion. Prior to the high runoff which occurred in late 2016 and early 2017, there was also a sub-surface perforated collector pipe along the upstream face of the diversion structure. As shown in **Figure 9**, this perforated pipe was damaged during high flows and removed. Restoration of this facility occurred in early summer 2018, utilizing a partial grant from Federal Emergency Management Agency under their disaster recovery grant programs. **Figure 10** shows the repaired intake.

1.2.6 Middle Fork Mokelumne River (MFMR) Pump Station

The existing MFMR Pump Station has an existing capacity of 200 gpm. During recent drought periods when the Bear Creek supplies were severely depleted, increasing the capacity of the MFMR Pump Station was identified by CCWD as a priority to meet existing and projected West Point Maximum Day Demands. The existing capacity of the MFMR pump station falls well below the ±700 gpm (1 MGD) capacity of the West Point WTP and is less than Master Plan maximum day demands of 500 gpm estimated for the West Point WTP service area.

The existing low ground elevation at the MFMR Pump Station site is approximately 2,484.5. This elevation is well below historic high water elevation marks measured at approximately elevation 2,486 in the vicinity of the MFMR Pump Station. FEMA Flood Level Maps were reviewed for the MFMR Pump Station area but the existing 100-year flood level for this location was not able to be determined more precisely from the FEMA maps. Improvements to increase the capacity of the MFMR Pump Station to ±500 gpm and to raise the pump station floor elevation above the high water elevation of approximately 2,486 are presented in this Master Plan Report. Additional site improvements are also proposed to improve existing pump station access from Charles Avenue. The existing MFMR Pump Station site includes a storage building and an abandoned filter, remnants of previously abandoned water treatment facilities. These would also be removed with the new pump station improvements. The existing site includes an old water storage tank which has been converted to a standby generator building. While this is a unique structure, the existing standby generator capacity (8kW) will be too small to serve proposed MFMR Pump Station improvements.

Currently, there is no direct system control or communication between the West Point WTP and the MFMR Pump Station. Proposed pump station improvements evaluated in this Master Report include radio or fiber optics telemetry to/from the West Point WTP so that the CCWD Operator at the West Point WTP can remotely start, stop and monitor the MFMR pumps, view the MFMR Pump Station Programmable Logic Controller (PLC) and respond to pump station alarm conditions.

LEGEND

- 12"RW — EXISTING RAW WATER LINE
- 6"TW — EXISTING TREATED WATER LINE
- 2488 — EXISTING CONTOUR MINOR
- 2485 — EXISTING CONTOUR MAJOR

(E) MIDDLE FORK MOKELUMNE RIVER PUMP STATION

(E) PUMP INTAKE PIPES

8"W FROM WEST POINT WTP

6"W TO WEST POINT WTP

12" PVC INTAKE

(E) PUMP STATION

(E) 8' WIDE GATE

(E) CHAIN LINK FENCE

TO DISTRIBUTION

(E) AC DRIVEWAY

6' CHAINLINK FENCE

MIDDLE FORK MOKELUMNE RIVER

CHARLES AVE

FIGURE 7

CONSULTING KASL ENGINEERS

FILE: S:\2517-01 West Point Mokelumne River\Study A - West Point Water System\Exhibits\Fig_7 11x17.dgn
DATE: 2/8/2018

FILE: S:\2517-01 West Point Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_8.dgn
DATE: 3/29/2018

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KASL
ENGINEERS

Middle Fork Mokelumne River
Pump Station Intake Diversion Structure

FIGURE 8

Remnant Pump Station Intake Pipe

Pump Station Intake Pipe Manifold Removed From Service

Middle Fork Mokelumne River Pump Station Intake

FIGURE 9

FILE: S:\2517-01 West Point. Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_9.dgn
DATE: 3/29/2018

CONSULTING KASL ENGINEERS

FILE: S:\2517-01 West Point-Mokelumne River\Study A - West Point Water System Master Plan\Figure\FIG_10.dgn
DATE: 10/17/2018

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Middle Fork Mokelumne River Pump Station Intake
Repaired Summer 2018

FIGURE 10

CCWD has discussed the possibility that a small "satellite" water treatment facility with capacity of approximately 200 gpm could be constructed, in the future, to serve the Wilseyville area. The Wilseyville WTP would be served by the future construction of the Middle Fork Ditch Pipeline. If a separate Wilseyville WTP was constructed, the capacity of the proposed MFMR Pump Station could be reduced but would still exceed the current capacity of 200 gpm.

MFMR Pump Station improvements will be designed and constructed consistent with the new MFMR pipeline proposed for delivery of MFMR water to the West Point WTP. MFMR Pump Station and pipeline improvements are described in this Supplemental Master Plan Report.

1.2.7 Middle Fork Mokelumne River (MFMR) Supply Pipeline

The existing alignment of the 6-inch diameter MFMR supply pipeline to the West Point WTP is shown in **Figure 11**. The existing raw water pipeline crosses the Middle Fork of the Mokelumne River along the face of the existing MFMR pump station intake diversion structure and then continues west along Barney Way, north along an existing CCWD pipeline easement to Acorn Way, north along Acorn Way, then north along an existing CCWD easement beginning at the intersection of Acorn Way and Bald Mountain Road and ending at Smitty Lane, then west along Smitty Lane to the West Point WTP; a distance of some 10,300 feet (±1.94 miles). To meet the future MFMR design demand of 500 gpm replacement of the existing 6-inch pipeline with an 8-inch diameter main is proposed.

Currently the delivery of Middle Fork Mokelumne River water to the West Point WTP is accomplished in two stages. The existing MFMR pumps lift the raw water to an intermediate pump station located on Acorn Way. Second stage pumping to the West Point WTP is then provided by the Acorn Way Pump Station. While this scheme reduces the pipeline design pressures along Barney Way the MFMR replacement pipeline is proposed with a single lift and the elimination of the Acorn Way Pump Station. The Acorn Way Pump Station is difficult to access, operate and maintain. Replacement of the existing pipeline with transmission facilities that can safely operate at higher pressures is preferred to the continued operation and maintenance of the Acorn Way booster pump station.

1.2.8 West Point Water Treatment Plant

The existing West Point Water Treatment Plant is a relatively new (circa early 2000s) One (1) MGD capacity, microfloc type, plant with upflow clarification, downflow multimedia filtration and disinfection. The design of the plant is similar to other existing CCWD facilities located at Jenny Lind and at Copper Cove. The 1 MGD capacity is provided in a single treatment plant train. Operational flexibility would be provided if a second, 1 MGD, microfloc type, water treatment plant was constructed allowing either plant to be removed from service without reduction in capacity. The existing 1 MGD plant will meet treated water demands projected for the West Point service area through the year 2100.

EXISTING WATERLINE ALIGNMENT MIDDLE FORK PUMP STATION TO WEST POINT WATER TREATMENT PLANT

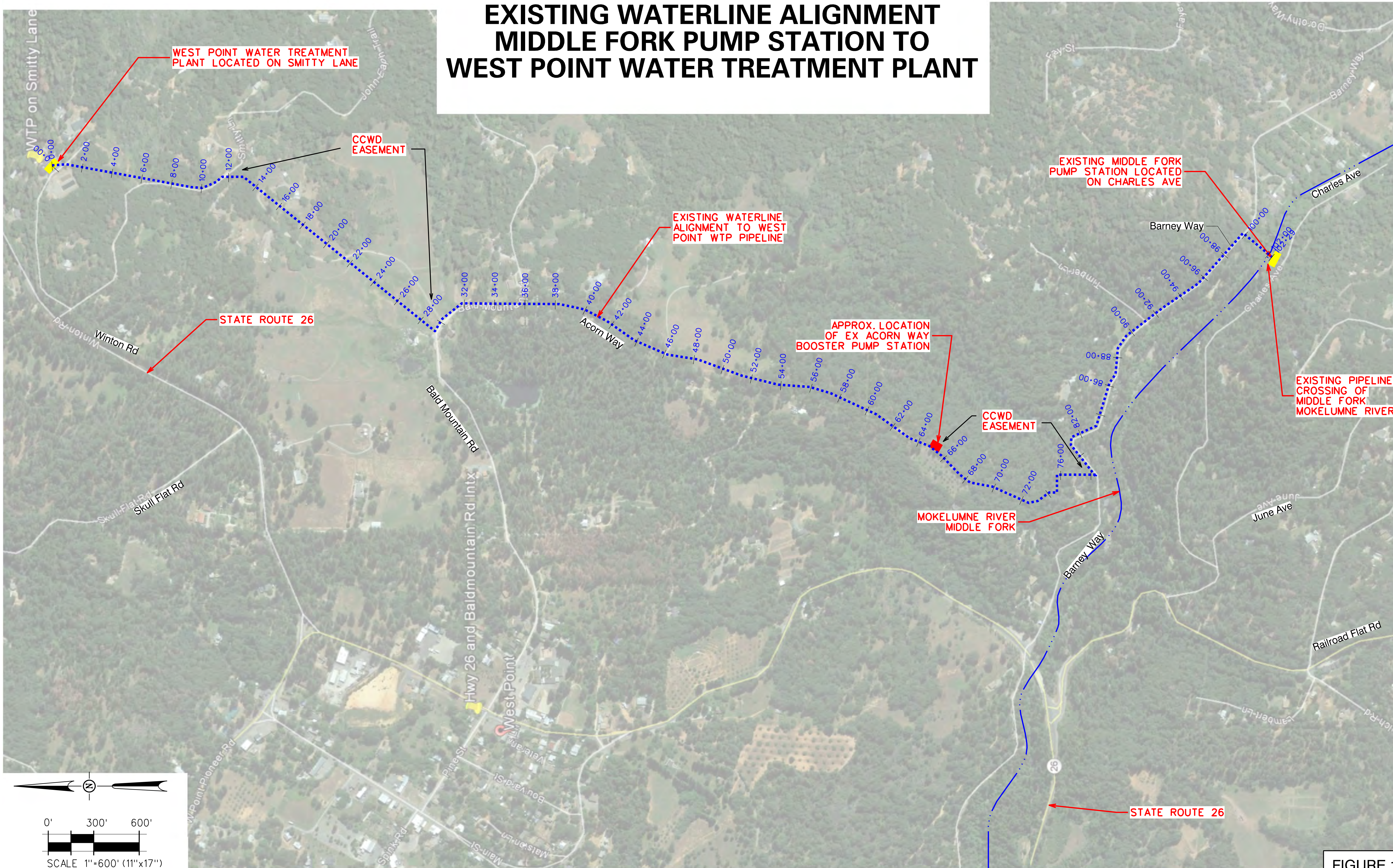

FIGURE 11

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1.2.9 Treated Water Storage

Since completion of the 2004 Feasibility Study, two approximately 350,000-gallon treated water storage tanks were constructed at the West Point WTP for a total of ±700,000-gallon storage at the plant. Separately, a new ±150,000-gallon water storage tank was also constructed to provide the Bummerville area with adequate fire flows and peak hour flows. No additional treated water storage improvements are proposed in this Water Master Plan

1.2.10 West Point / Wilseyville and Bummerville Distribution System

Based on the findings and recommendations included in the 2004 Feasibility Study, small diameter pipelines located in the West Point and Wilseyville distribution systems were replaced with minimum 6-inch diameter mains adequate to supply maximum day plus fire flows and adequate to meet peak hour demands. Additional water distribution improvements are proposed in this Supplemental Water Master Plan to serve the Bummerville service area.

2.0 BEAR CREEK STORAGE, SUPPLY AND CONTROL IMPROVEMENTS

In this section of the 2018 Supplemental Water System Master Plan, alternative and recommended modifications and reservoir expansions to improve the capacity and reliability of the Bear Creek supply are discussed. These include improvements to the Wilson Dam, metering of Bear Creek flows delivered through the Bear Creek Diversion Pipeline and capacity and water quality improvements at the West Point Regulating Reservoir.

2.1 Wilson Dam

An aerial photo of Wilson Dam is shown in **Figure 12**. The top of the Wilson Dam Embankment is constructed at approximately elevation 3,615'. The toe of slope on the downstream side of the reservoir embankment is approximately elevation 3,583'. **Figure 13** presents approximate cross sections of ground elevations in the Wilson Reservoir area. Based on these cross sections the existing capacity of the Wilson Reservoir is approximately 25 AF when the water surface is allowed to reach approximately elevation 3,613'. As previously discussed in Section 1.0 of this Supplemental Master Plan Report, the District has lowered the operating level of the Reservoir due to concerns regarding seepage and stability.

A subsurface investigation of the Wilson Dam embankment was conducted by Woodward-Clyde-Sherard Associates (WCSA) in 1963. Based on these subsurface tests the WCSA Engineering Geologist concluded that the embankment was constructed over native material and not constructed using engineered fill material. WCSA concluded that the dam was constructed using decomposed granite and placed over the native material without removing (or conditioning) the natural topsoil. Highly weathered rock and soil and other "unsuitable and potentially permeable materials" were used to construct the dam. WCSA determined that seepage was not, however, occurring through the reservoir embankment but rather through a zone composed of open joints and fractures in the granite bedrock beneath the dam embankment. WCSA further concluded that the seepage which was occurring through the underlying zones could be controlled by chemical grouting to seal the fractured zones.

For the purpose of this Supplement to the Master Plan, KASL obtained a proposal for updating the 1963 geotechnical explorations conducted at Wilson Dam. Given the proposed cost of this updated investigation the District decided not to pursue additional geotechnical testing or findings at this time.

The Wilson Dam outlet works are in disrepair and water flows through the impoundment to the creek below. In addition, a sinkhole developed near the upstream slope crest indicated possible "piping' of the embankment soil in the past. The District "patched" the sinkhole area on the upstream face in early 2018 as part of routine maintenance activities; the sinkhole perimeter was excavated to remove unstable material and wood debris and then backfilled with Class 2 aggregate base to the original grade along the face of the dam. The sinkhole may be related to the damaged pipeline and indicative of a long-term issue that needs to be resolved.

EXISTING RESERVOIR CAPACITY AT WILSON DAM
25 AC-FT

WEST POINT

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
3602	1.5	66,430
3603	3.0	70,800
3604	4.7	75,300
3605	6.5	79,900
3606	8.4	84,700
3607	10.4	89,500
3608	12.5	94,500
3609	14.9	106,800
3610	17.4	112,100
3611	20.0	117,350
3612	22.8	122,700
3613	25.7	129,000

ELEVATIONS ARE APPROXIMATE

N

0' 50' 100'

SCALE 1"=100' (17"x11")

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FIGURE 12

FILE: S:\2517-01 West Point, Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_12 EXISTING RESERVOIR CAPACITY AT WILSON DAM.dgn
DATE: 10/17/2018
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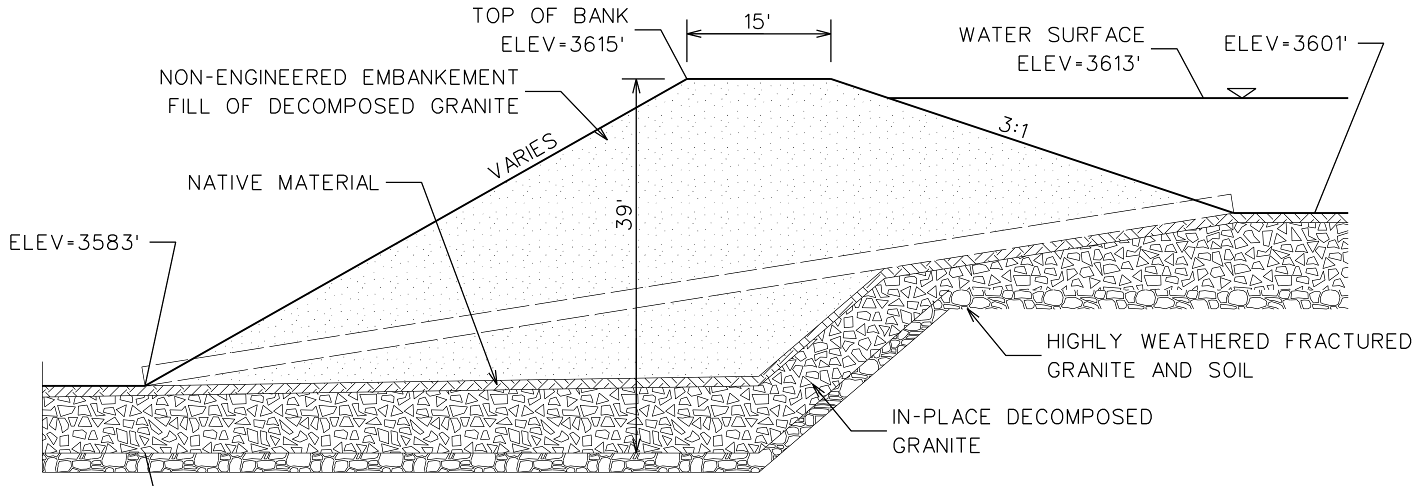
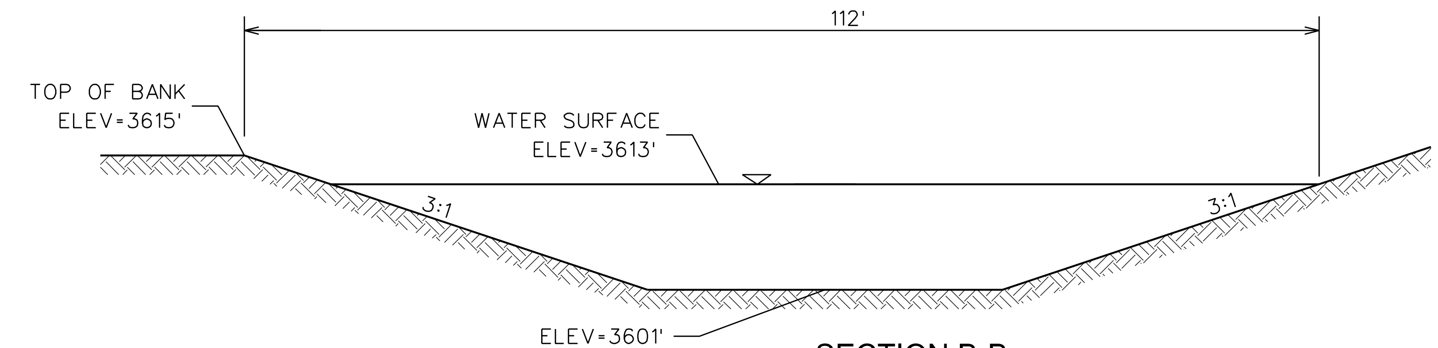
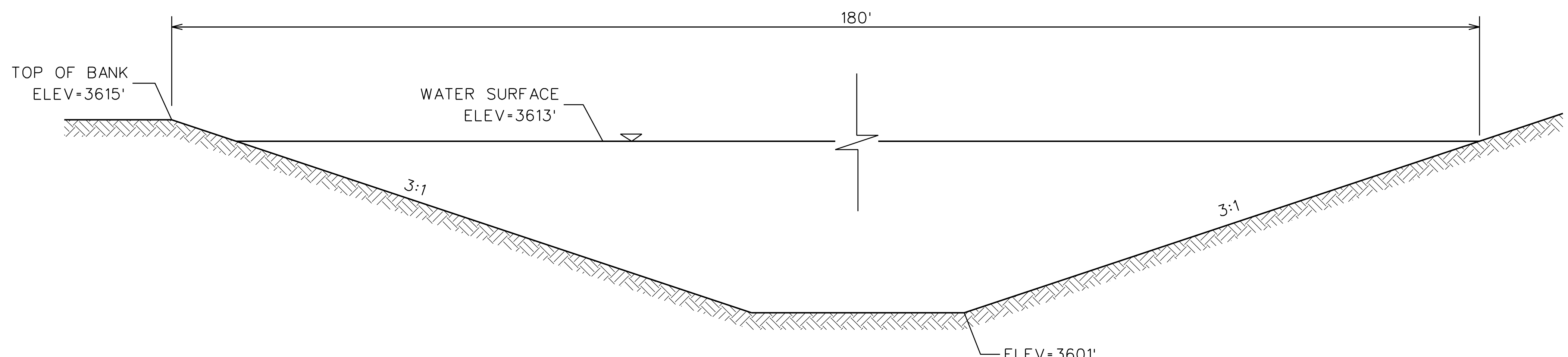


SECTION A-A



SECTION B-B



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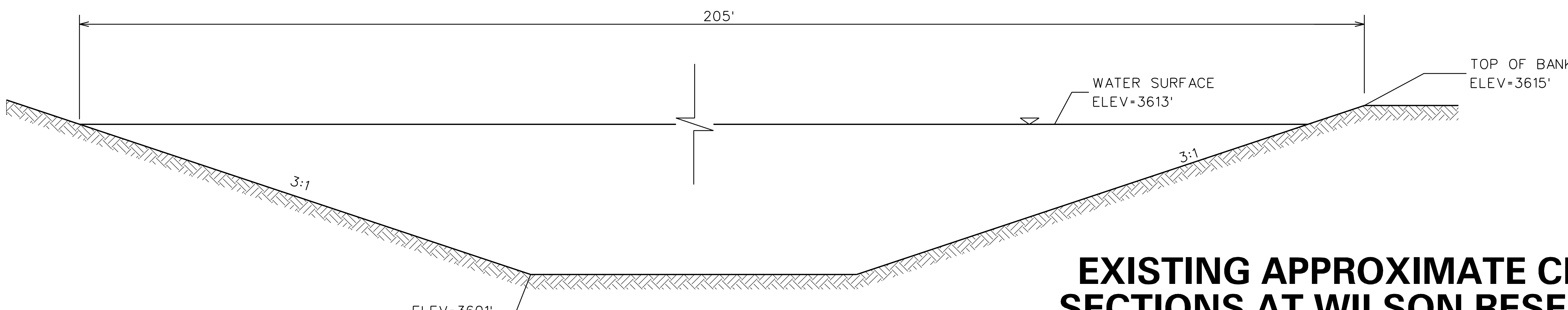

SECTION D-D

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KASL
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EXISTING APPROXIMATE CROSS SECTIONS AT WILSON RESERVOIR

WEST POINT

FIGURE 13

2.1.1 Reconstruct Wilson Dam to Restore 25 AF Capacity

To address the seepage through the material beneath the embankment, correct the existing damaged outlet pipe and reconstruct the embankment with engineered fill, it is recommended that the existing embankment material, spillway, outlet pipe and outlet pipe controls be removed and replaced. The embankment area must be cleared, scarified and compacted. During reconstruction, a temporary (piped) diversion of Bear Creek will be required. To correct the seepage though the underlying fractured granite consistent with recommendations included in the WCSA report, an impervious grout "curtain," 150 feet long, 6 feet deep and approximately 3 feet wide is proposed. Updated geotechnical investigations may determine other methods that are more suitable and more acceptable to the Regional Water Quality Control Board or to the Department of Fish and Wildlife. Estimated costs to restore Wilson Reservoir to 25 AF capacity are presented in **Table 1.**

2.1.2 Expand Wilson Reservoir Capacity

In the Mokelumne River Long-Term Water Needs Study the benefits of increasing the capacity of Wilson Reservoir to 50 AF to meet the future water supply needs of the West Point community are discussed. Based on preliminary analysis of surface area and the estimated cross-sectional geometry of the existing reservoir, increasing the capacity to 50 AF would require raising the dam embankment and emergency spillway elevations by approximately 7 feet. As shown in **Figure 14**, raising the embankment and maximum operating level by 7 feet will likely encroach onto Winton Road.

Expansion of the Reservoir "footprint" would require a revised operating agreement with Sierra Pacific Industries as it would encroach on their adjacent properties. Increasing the capacity of the Reservoir would also require an updated permit from the Division of Safety of Dams and permitting from the California Department of Fish and Wildlife, Regional Water Quality Control Board and U.S. Corps of Engineers.

As previously discussed for the 25 AF capacity alternative, increasing the capacity of Wilson Reservoir to 40 AF or 50 AF would require removal of the existing embankment, drain pipe and spillway, clearing, scarification, and compaction of the expanded dam embankment area, temporary rerouting of Bear Creek during construction, construction of a grouted curtain to control seepage through the underlying fractured rock, construction of the new embankment with engineered fill, replacement of the reservoir outlet pipe together with new gate controls and trash rack and construction of a new concrete spillway. Increasing the capacity to 50 AF would require reconstruction (raising) a portion of Winton Road along the north side of the expanded reservoir. Estimated costs for the 50 AF reservoir alternative are presented in **Table 2**. After discovering that a 50 AF expansion requires raising Winton Road, a second evaluation was done to determine the maximum capacity achievable without the need for raising Winton Road. The evaluation resulted in a maximum capacity of 40 AF. Expansion of Wilson Reservoir capacity to 40 AF is shown in **Figure 14A**. Estimated costs for the 40 AF reservoir expansion alternative are presented in **Table 3**. These costs do not include purchase of the expanded reservoir site or the cost of an expanded operating agreement with SPI. These costs are unknown at this time.

Table 1. Estimated Costs to Restore Wilson Reservoir to 25 AF Capacity

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Mobilization,(1) Clearing and Grubbing	$ 75,000.00	LS	1	$ 75,000
2	Remove Existing 24" Drain	$ 50.00	LF	125	$ 6,250
3	Excavate Existing Embankment Material	$ 6.50	CY	11000	$ 71,500
4	Scarify and Compact Embankment Site	$ 40,000.00	LS	1	$ 40,000
5	Place and Compact Engineered Fill Material(2)	$ 10.00	CY	14300	$ 143,000
6	Install 24" Concrete Encased Drain Pipe	$ 250.00	LF	125	$ 31,250
7	Install 24" Diameter Drain Gate, Controls and Trash Rack	$ 40,000.00	LS	1	$ 40,000
8	Install Grout Barrier (150' x 6' x 3')	$ 3,000.00	CY	100	$ 300,000
9	Construct Concrete Lined Spillway	$ 75,000.00	LS	1	$ 75,000
10	Provide Temporary Diversion of Bear Creek During Construction	$ 25,000.00	LS	1	$ 25,000
				Estimated Construction Cost	$ 807,000
				20% Construction Cost Contingencies	$ 161,400
				Planning & Engineering Design (10% of Construction)	$ 80,700
				Environmental Mitigation and Permitting (10% of Construction)	$ 80,700
				Construction Administration (8% of Construction)	$ 64,600
				Administrative and Legal Costs (5% of Construction)	$ 40,350
				Total Estimated Costs	$ 1,234,750

(1) Mobilization Estimated at ±5% of Estimated Construction Cost.

(2) Assumes ±30% Shrinkage and that Suitable Onsite Sources of Fill Material are Available.

EXPAND WILSON RESERVOIR CAPACITY TO 50 AC-FT (RAISE BY 7 FT)

WEST POINT

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
3602	1.5	66,430
3603	3.0	70,800
3604	4.7	75,300
3605	6.5	79,900
3606	8.4	84,700
3607	10.4	89,500
3608	12.5	94,500
3609	14.9	106,800
3610	17.4	112,100
3611	20.0	117,350
3612	22.8	122,700
3613	25.7	129,000
3615	31.8	140,400
3616	35.1	146,100
3618	42.1	157,800
3620	50.0	169,700

ELEVATIONS ARE APPROXIMATE

N

0' 50' 100'

SCALE 1"=100' (17"x11")

FIGURE 14

CONSULTING KASL ENGINEERS

FILE: S:\2517-01 West Point, Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_14 EXPAND WILSON RESERVOIR TO 50 AC FT.dgn
DATE: 10/17/2018
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Table 2. Estimated Costs for Wilson Reservoir Expansion Alternative

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Mobilization,(1) Clearing and Grubbing	$ 85,000.00	LS	1	$ 85,000
2	Remove Existing 24" Drain	$ 50.00	LF	125	$ 6,250
3	Remove Trees	$ 1,000.00	EA	35	$ 35,000
4	Excavate Existing Embankment Material	$ 6.50	CY	11000	$ 71,500
5	Additional Project Area Excavation	$ 10.00	CY	4000	$ 40,000
6	Scarify and Compact Embankment Site	$ 50,000.00	LS	1	$ 50,000
7	Place and Compact Engineered Fill Material (2)	$ 10.00	CY	20000	$ 200,000
8	Install 24" Concrete Encased Drain Pipe	$ 250.00	LF	175	$ 43,750
9	Install 24" Diameter Drain Gate, Controls and Trash Rack	$ 50,000.00	LS	1	$ 50,000
10	Install Grout Barrier (200' x 6' x 3') During Construction	$ 3,000.00	CY	135	$ 405,000
11	Construct Concrete Lined Spillway	$ 90,000.00	LS	1	$ 90,000
12	Provide Temporary Diversion of Bear Creek During Construction	$ 25,000.00	LS	1	$ 25,000
13	Reconstruct Winton Road	$ 325.00	FT	880	$ 286,000
				Estimated Construction Cost	$ 1,387,500
				20% Construction Cost Contingencies	$ 277,500
				Planning & Engineering Design (10% of Construction)	$ 138,750
				Environmental Mitigation and Permitting (10% of Construction)	$ 138,750
				Construction Administration (8% of Construction)	$ 111,000
				Administrative and Legal Costs (6% of Construction)	$ 83,250
				Total Estimated Costs	$ 2,136,750.00

(1) Mobilization Estimated at 5% of Estimated Construction Cost.

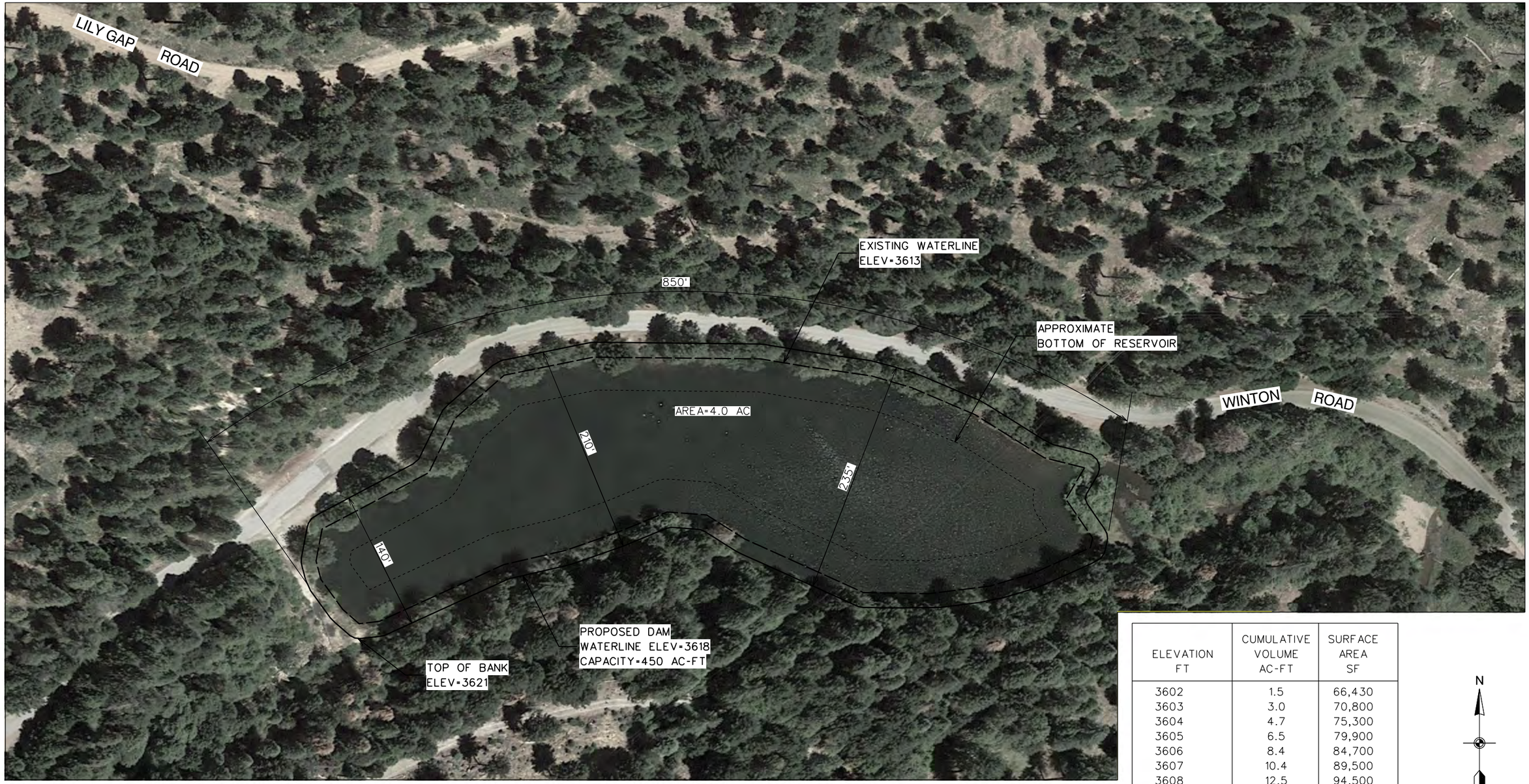
(2) Assumes ±30% Shrinkage and that Suitable Onsite Sources of Fill Material are Available.

Table 3. Engineer's Estimate of Quantities and Costs - Study A West Point Water System Master Plan Wilson Dam Reconstruct to 40 AF Capacity

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Mobilization,(1) Clearing and Grubbing	$ 85,000.00	LS	1	$ 85,000
2	Remove Existing 24" Drain	$ 50.00	LF	125	$ 6,250
3	Remove Trees	$ 1,000.00	EA	30	$ 30,000
4	Excavate Existing Embankment Material	$ 6.50	CY	850	$ 5,525
5	Additional Project Area Excavation	$ 10.00	CY	3200	$ 32,000
6	Scarify and Compact Embankment Site	$ 50,000.00	LS	1	$ 50,000
7	Place and Compact Engineered Fill Material (2)	$ 10.00	CY	16000	$ 160,000
8	Install 24" Concrete Encased Drain Pipe	$ 250.00	LF	175	$ 43,750
9	Install 24" Diameter Drain Gate, Controls and Trash Rack	$ 50,000.00	LS	1	$ 50,000
10	Install Grout Barrier (200' x 6' x 3') During Construction	$ 3,000.00	CY	135	$ 405,000
11	Construct Concrete Lined Spillway	$ 90,000.00	LS	1	$ 90,000
12	Provide Temporary Diversion of Bear Creek During Construction	$ 25,000.00	LS	1	$ 25,000
				Estimated Construction Cost	$ 982,525
				20% Construction Cost Contingencies	$ 196,505
				Planning & Engineering Design (10% of Construction)	$ 98,253
				Environmental Mitigation and Permitting (10% of Construction)	$ 98,253
				Construction Administration (8% of Construction)	$ 111,000
				Administrative and Legal Costs (6% of Construction)	$ 58,952
				Total Estimated Costs	$ 1,545,486.50

(1) Mobilization Estimated at 5% of Estimated Construction Cost.

(2) Assumes ±30% Shrinkage and that Suitable Onsite Sources of Fill Material are Available.



EXPAND WILSON RESERVOIR CAPACITY TO 40 AC-FT (RAISE BY 5 FT)

WEST POINT

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
3602	1.5	66,430
3603	3.0	70,800
3604	4.7	75,300
3605	6.5	79,900
3606	8.4	84,700
3607	10.4	89,500
3608	12.5	94,500
3609	14.9	106,800
3610	17.4	112,100
3611	20.0	117,350
3612	22.8	122,700
3613	25.7	129,000
3615	31.8	140,400
3616	35.1	146,100
3618	40.0	155,000

ELEVATIONS ARE APPROXIMATE

N

0' 50' 100'

SCALE 1"=100' (17"x11")

FIGURE 14A

CONSULTING KASL ENGINEERS

FILE: S:\2517-01 West Point, Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_14 A EXPAND WILSON RESERVOIR TO 40 AC FT.dgn
DATE: 10/17/2018
PLOT TABLE: 2517-01 West Point Mokelumne River\Study A - West Point Water System\Water Plan\Figure\Connection\Fig-x.tbl

2.2 The Bear River Diversion Pipeline

As noted in Section 1.0 of this Supplemental Master Plan Report, the Bear River Diversion Pipeline has been recently replaced with a 16-inch diameter HDPE pipe. The new pipeline is adequate to deliver the 4 cfs allowed by the District's current water rights permit. No additional improvements to the pipeline are proposed. The reinforced concrete Bear River Diversion Facilities adequately provide diversion of up to 4 cfs of Bear River flow. The diversion structure inlet seasonally fills with sand and sediment and needs to be maintained. No improvements to the diversion structure inlet are proposed at this time except for the reinstallation of stream flow gaging equipment at the existing Parshall Flume. Ongoing cleaning of the diversion structure inlet is proposed. It is recommended that at, a minimum, the existing diversion structure inlet be cleaned of sediment and debris each Spring. After flow monitoring facilities are installed, it is recommended that reduced flow through the Bear River Diversion structure could indicate blockage of the diversion structure inlet pipe and, therefore, warrant maintenance. The District previously installed a Parshall type flow metering flume as part of the Bear Creek Diversion. After vandalism and theft occurred, the District has not replaced the critical flow measurement and flow recording equipment. During a site visit to the Bear Creek Diversion, CCWD suggested re-establishing the existing flow gaging equipment to comply with the requirements of S.B. 88 and to support operating staff to coordinate the Bear Creek Diversions, Regulator Reservoir Operations and Middle Fork Pump Stations operations.

The District has already entered in to a contract to install a float tape with WaterLOG H-3301/11/42 shaft encoder, WaterLOG Storm 3 data logger, a new enamel staff gage and a satellite radio. This equipment will be housed in a powder coated steel gage house at the original Parshall Flume gaging station. Data will ultimately be transmitted through the satellite system to a password protected website so that operators can log in to the website to check the status of the diversion.

2.3 West Point Regulating Reservoir

The Calaveras County Mokelumne River Long-Term Water Needs Study includes recommendations to increase the capacity of the West Point Regulating Reservoir to 150 AF. The current capacity with the placement of two, 12-inch-high stop logs at the spillway, is approximately 52.7 AF.

The existing top of the Regulating Reservoir embankment is constructed with maximum water surface elevation (with two stop logs) of 2,987.5. The top of embankment elevation is 2,990.9.

The initial evaluation for increasing the capacity of the Regulating Reservoir to ±150 AF is shown in **Figure 15.** A top of berm embankment elevation of 3,005.0 is suggested together with a maximum water surface elevation of 3,001.5. As noted in Figure 15, this plan results in the top of the reservoir aligned too close to the existing CCWD property limits at the northwest and southwest limits of the expanded reservoir.

To more reasonably increase the capacity, the footprint of the reservoir needs to be expanded with additional excavation while maintaining the limits of the reservoir within the CCWD property lines.

The first revised plan for expanding the capacity of the Regulating Reservoir is shown in **Figure 16**. With this plan, the bottom of the reservoir is excavated and expanded to the northeast. The open channel outfall structure is retained with a new spillway constructed at a high water elevation of 2,999. A top of embankment elevation of 3,003 is proposed. This alternative would include construction of retaining walls

up to 12 feet high to maintain the toe of the embankment within the CCWD pipeline limits. Typical sections along the spillway and at critical embankment locations are presented in **Figure 17**. The expanded reservoir plan and sections presented in Figures 16 and 17 include maintaining a 15-foot-wide top embankment width, a 14-foot-wide spillway outfall with open channel section, similar to existing, and a minimum 12-foot-wide access roadway constructed around the outside of the embankment toe, again, similar to existing conditions.

The initial revised plan was reviewed with CCWD Engineering Department staff. Based on their recommendations, the spillway open channel outfall section was replaced with a 3-foot-deep by 10-foot-wide box culvert. The footprint of the reservoir was further expanded to the southeast while keeping the facility within the limits of the CCWD property. The second, revised plan also results in an increased Regulating Reservoir capacity of 150 AF. This option is shown in **Figure 18**. As before, the embankment elevation is proposed at 3003 with a maximum water surface elevation of 2,999. This revised plan, which significantly reduces the need for retaining walls, was found to be more acceptable to CCWD Engineering Department staff. A cost estimate for the second revised plan for increasing the capacity at the West Point Regulating Reservoir to 150 AF is presented in **Table 4.**

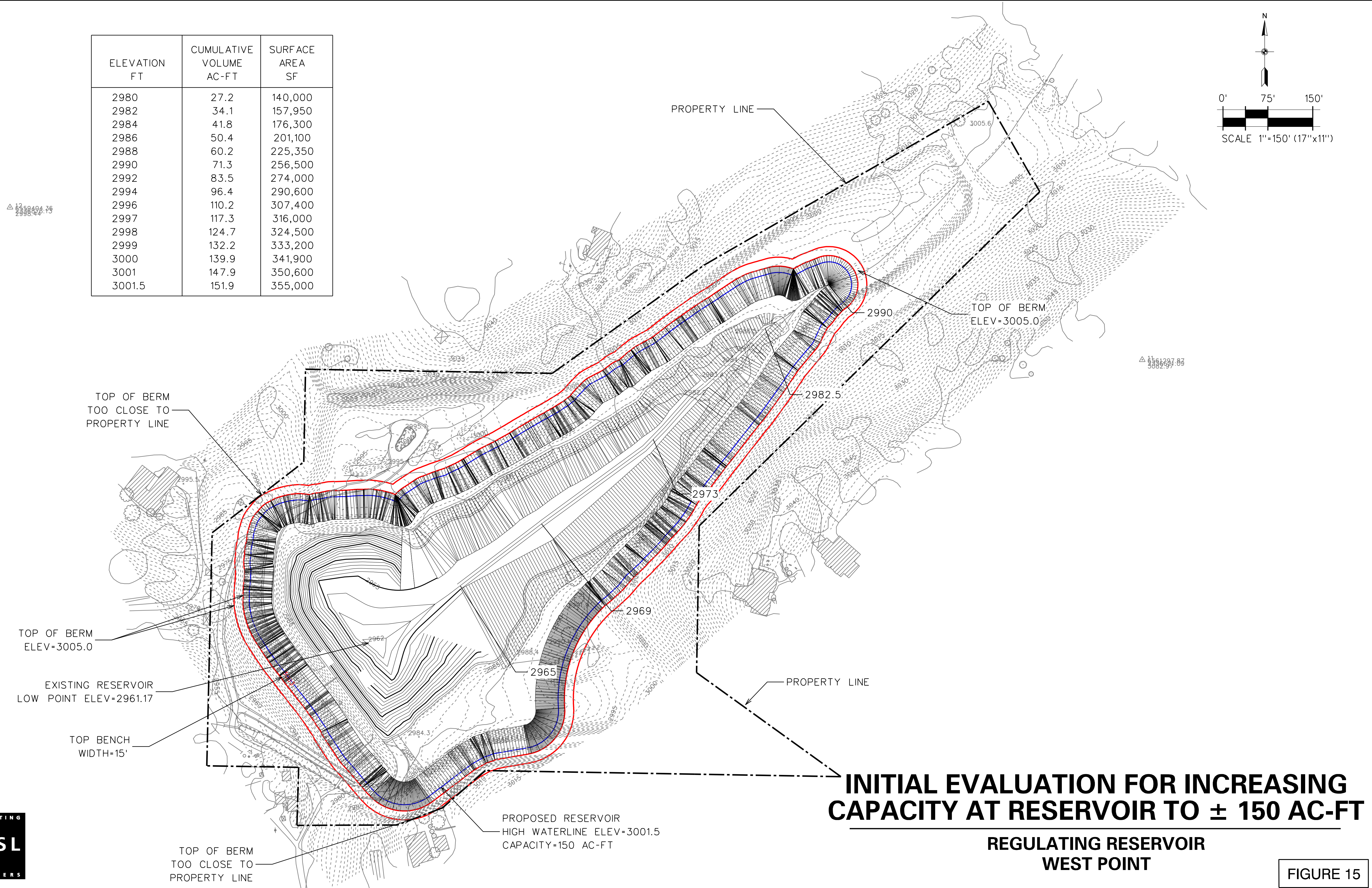
The Hydraulic Grade Line developed with the Bear Creek Raw Water Pipeline Replacement Project was evaluated with respect to the increased Regulating Reservoir capacity of 150 AF and increased maximum water surface elevation of 2999. After verifying that the Bear Creek Pipeline Plans prepared for the District in 2004 and the topographic surveys conducted for this Supplemental Master Plan use on the same vertical datum, it was determined that even with the increase in the maximum operating level of the Reservoir to elevation 2999, the Bear Creek Pipeline would still deliver water from the Bear Creek Diversion to the West Point Regulating Reservoir by gravity flow.

2.3.1 Regulating Reservoir Outlet Pipe Modifications

The existing Regulating Reservoir outlet pipe is located at or near the reservoir low point. The District has placed a surface aerator near the outlet pipe location to improve dissolved oxygen levels. There is currently no screening of the outlet, which presents ongoing concerns with the potential for sediment and debris to enter the Regulating Reservoir outlet pipe and ultimately to the headworks of the West Point WTP.

Operational flexibility for treatability of source water would be improved with modification of the existing outlet with a floating screen. This would also reduce risk associated with large sediment and debris entering the headworks of the West Point WTP. A sample design (City of Plymouth Treated Effluent Reservoir) is presented in **Figure 19** and **Figure 20.** With the screened floating outlet, the existing bottom outlet piping is retained and remains functional if the reservoir needs to be drawn down to minimum elevations quickly in an emergency. By floating the reservoir outlet pipe near the surface, water with higher levels of dissolved oxygen and lower levels of total solids would enter the West Point WTP. The estimated cost of modifying the existing outlet with a floating screened outlet is approximately $100,000 based on the actual cost experience at Plymouth. The Plymouth installation was approved by DSOD. An itemized cost estimate of the suggested floating, screened, reservoir outlet improvements is presented in **Table 5.**

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
2980	27.2	140,000
2982	34.1	157,950
2984	41.8	176,300
2986	50.4	201,100
2988	60.2	225,350
2990	71.3	256,500
2992	83.5	274,000
2994	96.4	290,600
2996	110.2	307,400
2997	117.3	316,000
2998	124.7	324,500
2999	132.2	333,200
3000	139.9	341,900
3001	147.9	350,600
3001.5	151.9	355,000



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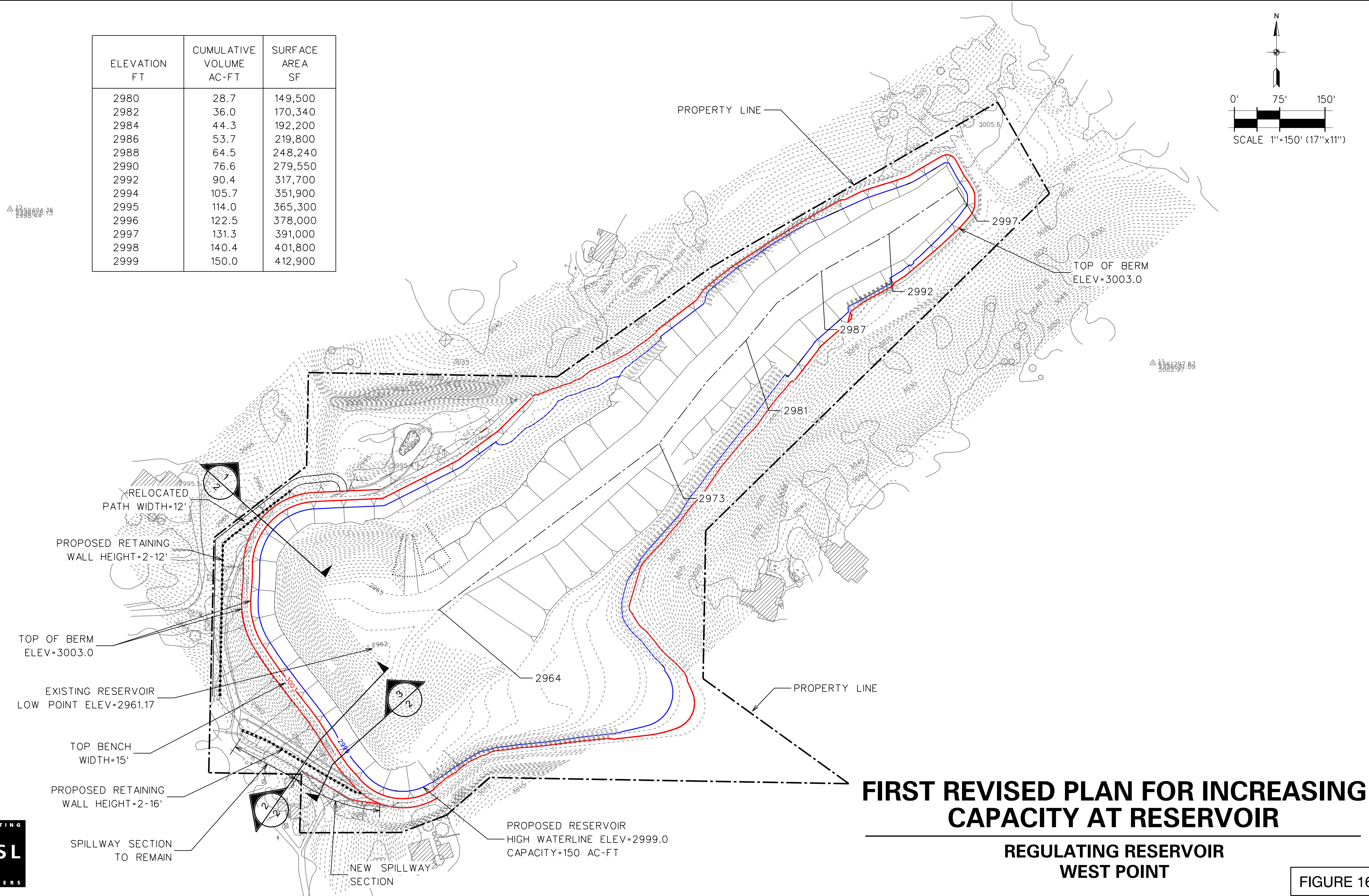
INITIAL EVALUATION FOR INCREASING CAPACITY AT RESERVOIR TO ± 150 AC-FT

REGULATING RESERVOIR WEST POINT

FIGURE 15

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
2980	28.7	149,500
2982	36.0	170,340
2984	44.3	192,200
2986	53.7	219,800
2988	64.5	248,240
2990	76.6	279,550
2992	90.4	317,700
2994	105.7	351,900
2995	114.0	365,300
2996	122.5	378,000
2997	131.3	391,000
2998	140.4	401,800
2999	150.0	412,900



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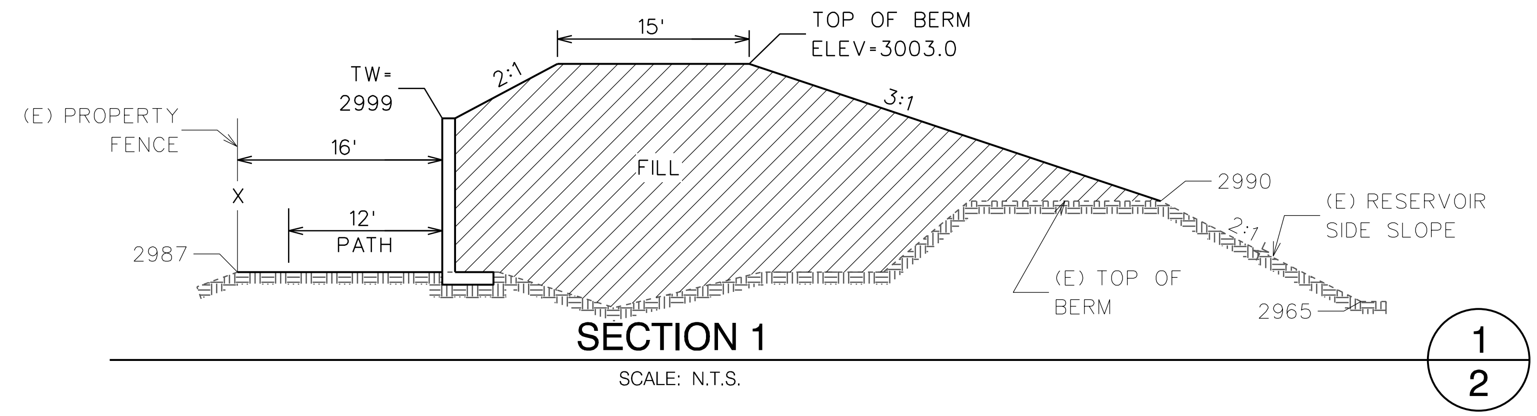
FIRST REVISED PLAN FOR INCREASING CAPACITY AT RESERVOIR

REGULATING RESERVOIR WEST POINT

FIGURE 16



SECTION 1

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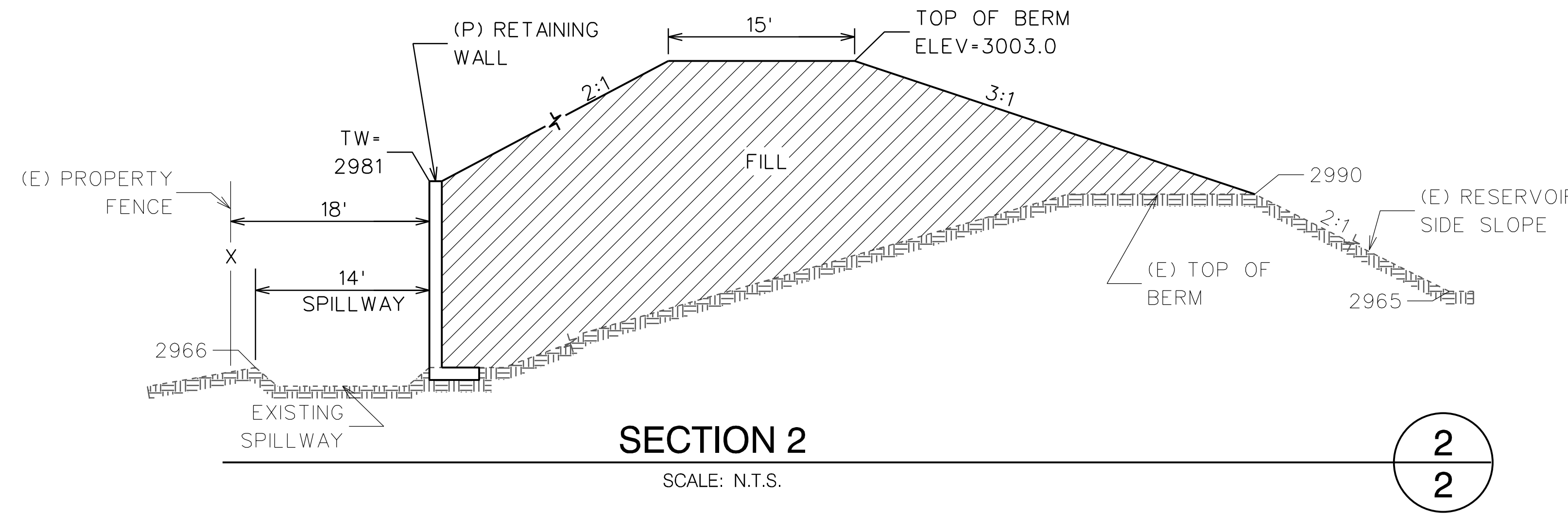

SECTION 2

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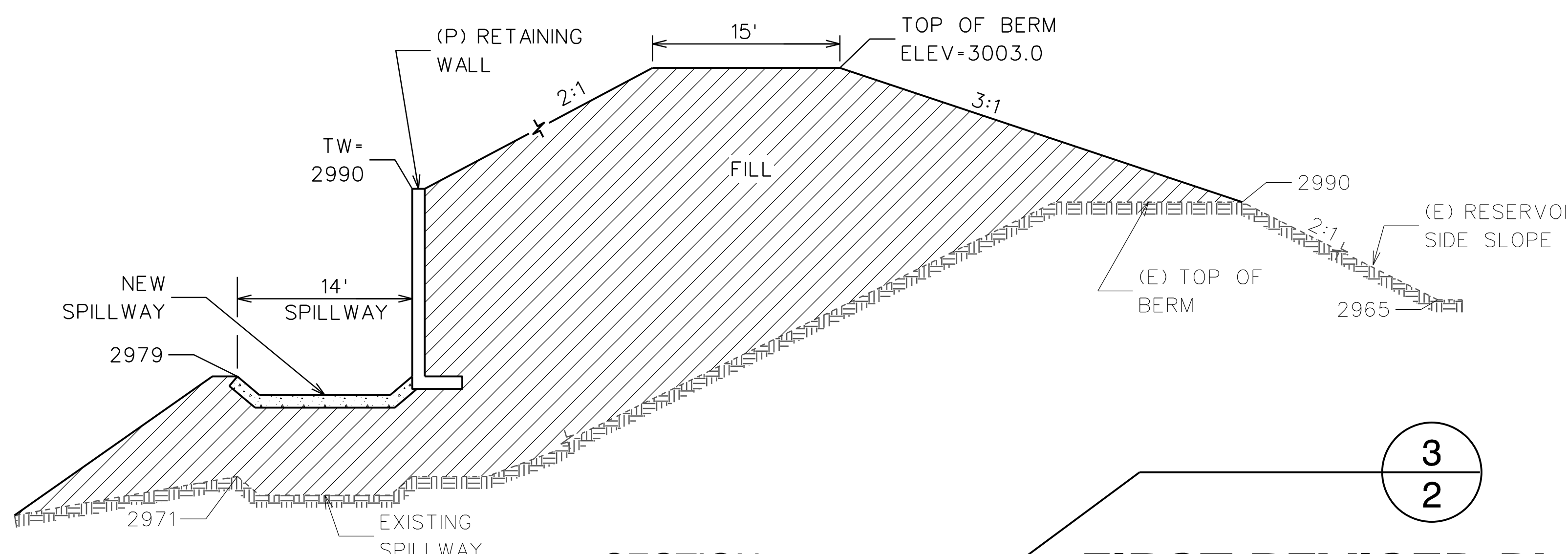

SECTION 3

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ENGINEERS

FIRST REVISED PLAN FOR INCREASING CAPACITY AT RESERVOIR CRITICAL SECTIONS

REGULATING RESERVOIR
WEST POINT

FIGURE 17

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
2980	28.7	149,500
2982	36.0	170,340
2984	44.3	192,200
2986	53.7	219,800
2988	64.5	248,240
2990	76.6	279,550
2992	90.4	317,700
2994	105.7	351,900
2995	114.0	365,300
2996	122.5	378,000
2997	131.3	391,000
2998	140.4	401,800
2999	150.0	412,900

BUBBLE NOTES
BOX CULVERT INFORMATION

1 = FG=3003, TC=3003, INV=2999

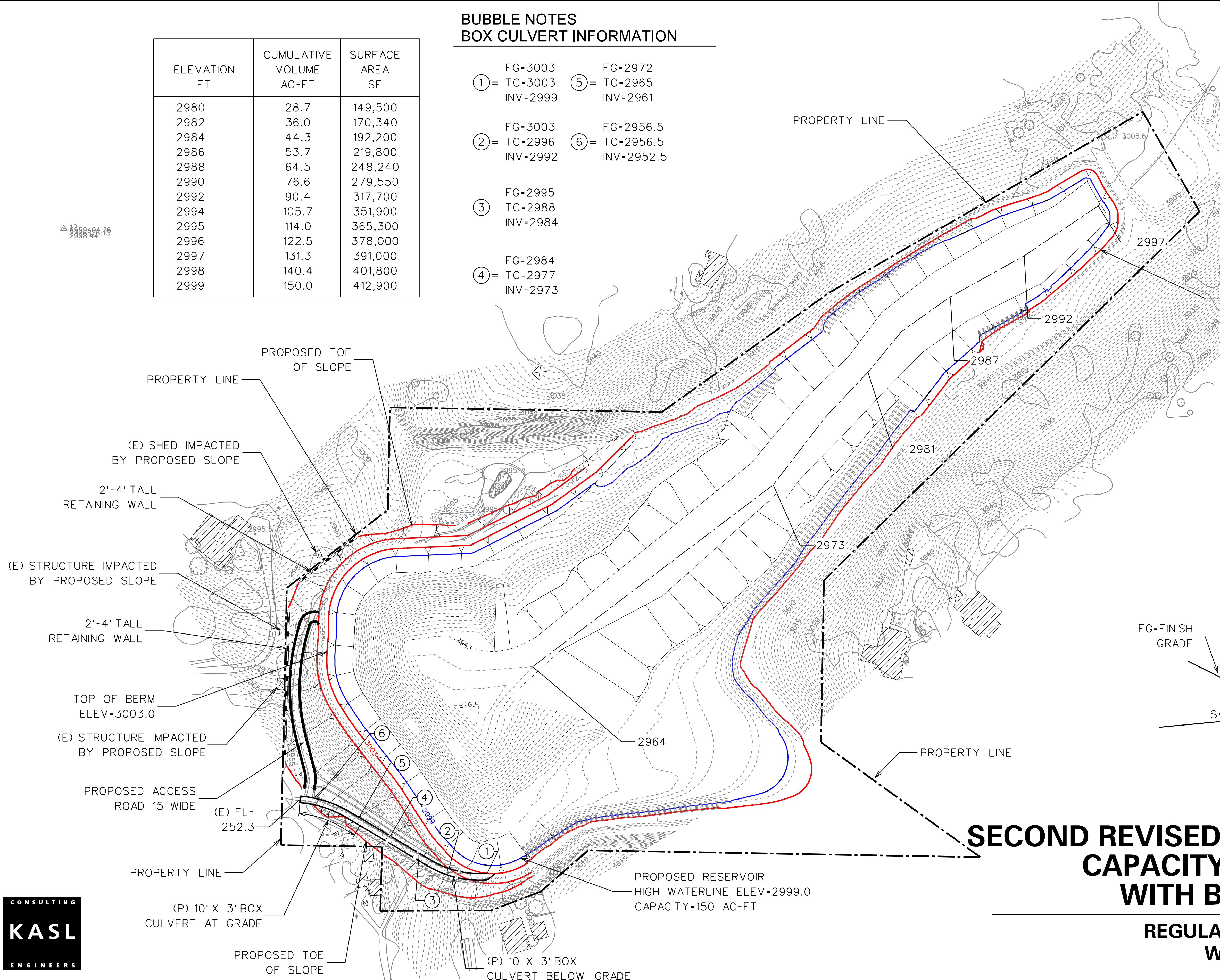
2 = FG=3003, TC=2996, INV=2992

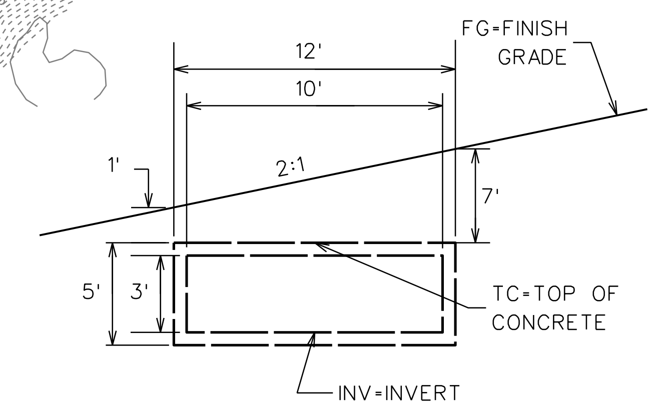
3 = FG=2995, TC=2988, INV=2984

4 = FG=2984, TC=2977, INV=2973

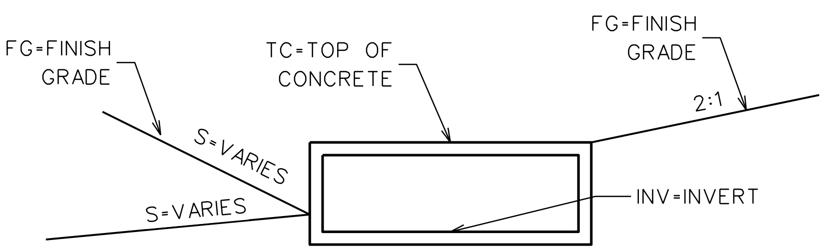
5 = FG=2972, TC=2965, INV=2961

6 = FG=2956.5, TC=2956.5, INV=2952.5





3' HIGH X 10' WIDE BOX CULVERT (BELOW GRADE CONDITION)



3' HIGH X 10' WIDE BOX CULVERT (AT GRADE CONDITION)

SECOND REVISED PLAN FOR INCREASING CAPACITY AT RESERVOIR WITH BOX CULVERT

REGULATING RESERVOIR WEST POINT

FIGURE 18

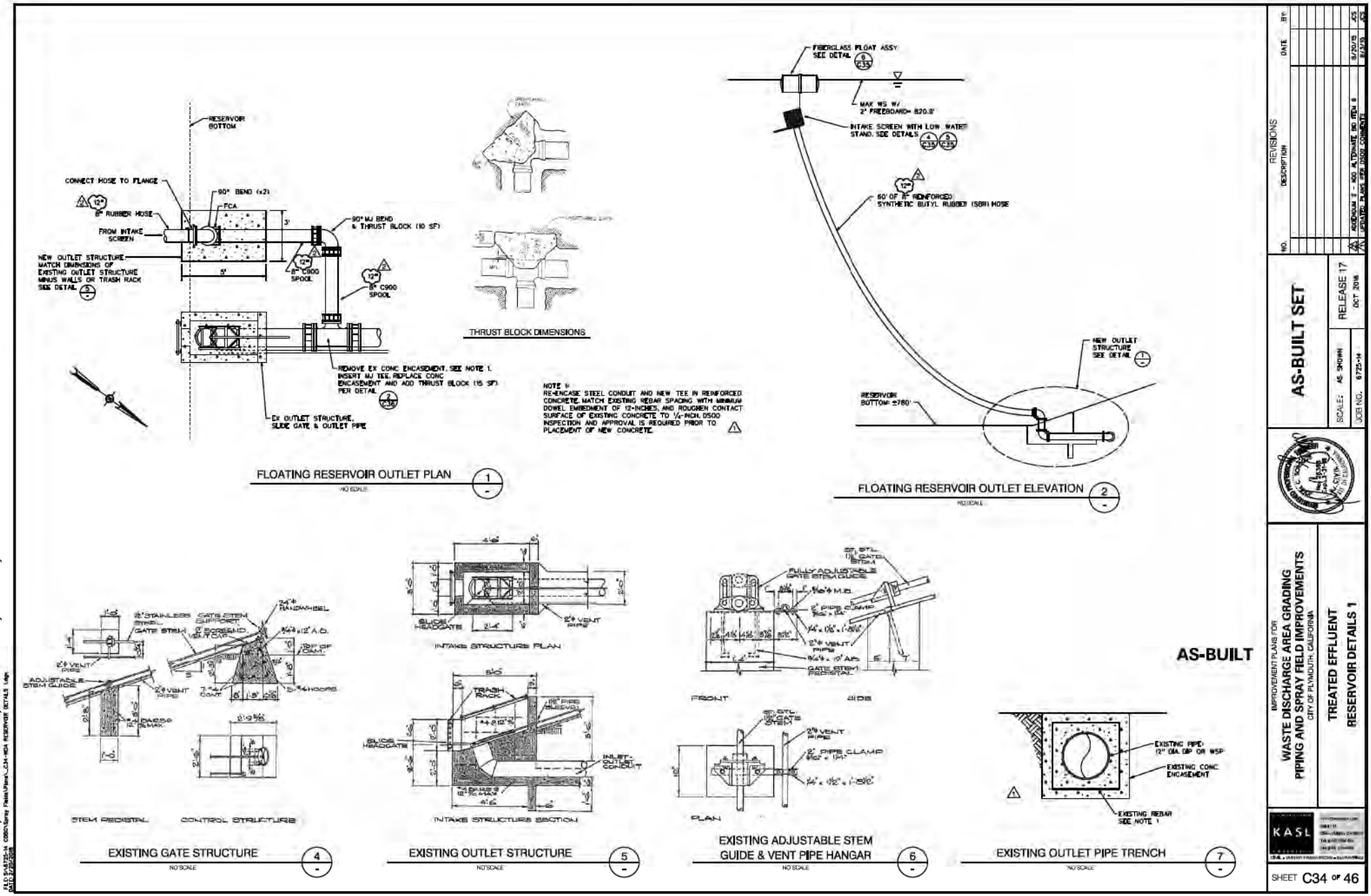
CONSULTING KASL ENGINEERS

Table 4. Cost Estimate for the Second Revised Plan for Increasing the Capacity at the West Point Regulating Reservoir to 150 AF

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Mobilization,(1) Clearing and Grubbing	$ 85,000.00	LS	1	$ 85,000
2	Remove Existing Structure	$ 2,000.00	EA	3	$ 6,000
3	Remove Existing Fence	$ 10.00	LF	350	$ 3,500
4	Remove Existing Concrete Spillway	$ 250.00	CY	80	$ 20,000
5	Remove Existing 24" CMP	$ 50.00	LF	200	$ 10,000
6	Reservoir and Reservoir Embankment Excavation	$ 6.50	CY	45000	$ 292,500
7	Place and Compact Reservoir Embankment (2)	$ 10.00	CY	60000	$ 600,000
8	Install Erosion Control Netting	$ 2.50	SY	5250	$ 13,125
9	Construct 15' Wide Access Road (Class 2 A.B)	$ 125.00	TONS	145	$ 18,125
10	Construct 10' x 3' Reinforced Concrete Box Culvert	$ 800.00	CY	400	$ 320,000
11	Install Chain Link Fence	$ 40.00	LF	350	$ 14,000
12	Rebuild Structures	$ 10,000.00	EA	3	$ 30,000
13	Construct Perimeter Retaining Walls	$ 100.00	LF	350	$ 35,000
14	Furnish and Install 24" CMP Drain	$ 250.00	LF	300	$ 75,000
15	Furnish and Install Drain Trash Rack and Gate Control	$ 65,000.00	LS	1	$ 65,000
				Estimated Construction Cost	$ 1,587,250
				20% Construction Cost Contingencies	$ 317,450
				Planning & Engineering Design (10% of Construction)	$ 158,725
				Permitting and Environmental Clearance (7% of Construction)	$ 111,100
				Construction Administration (8% of Construction)	$ 127,000
				Administrative and Legal Costs (4% of Construction)	$ 63,500
				Total Estimated Costs	$ 2,365,025

(1) Estimated at 5% of Construction Cost.

(2) Assumes 30% Shrinkage and that Suitable Onsite Sources of Fill Material are Available.



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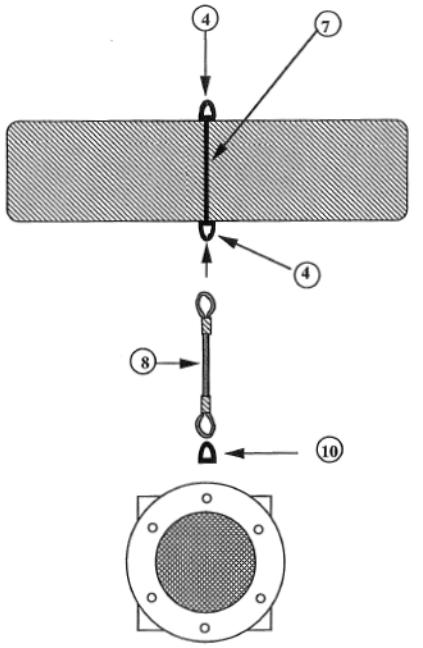
DATE: 3/29/2018

CONSULTING KASL ENGINEERS

Sample Floating, Screened Reservoir Outlet Plan

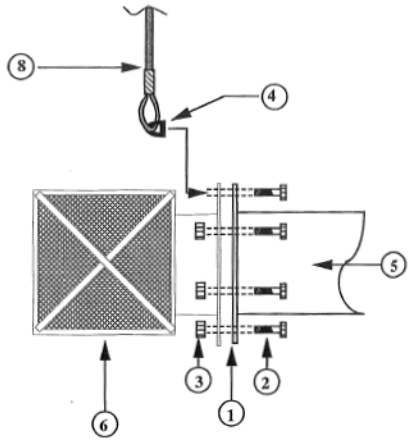
FIGURE 19



Item #	Description
4	Stainless Steel Eye Nut
7	Stainless Steel All Thread
8	Stainless Steel Cable
10	Stainless Steel Eye Nut

FLOAT / INTAKE SCREEN CONNECTION — 4 / -

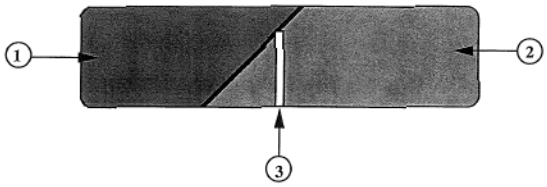
NO SCALE



Item #	Description
1	Flange
2	Stainless Steel Bolt
3	Stainless Steel Nut
4	Stainless Steel Eye Nut
5	SBR Hose
6	Stainless Steel Screen

INTAKE SCREEN DETAIL — 5 / -

NO SCALE



Item #	Description
1	Fiberglass Cover
2	Foam Insert
3	PVC Sleeve

FIBERGLASS FLOAT ASSEMBLY — 6 / -

NO SCALE

FILE: S:\2517-01 West Point, Mokelumne River\Study A - West Point Water System\Master Plan\Figure\FIG_20.dgn
DATE: 3/29/2018

CONSULTING KASL ENGINEERS

Floating Screened Reservoir Outlet Assembly Details

FIGURE 20

Table 5. Cost Estimate of the Suggested Floating, Screened, Reservoir Outlet Improvements to Regulating Reservoir

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Modify Existing Outlet Structure; Piping, Fittings, Concrete Foundation(1)	$ 25,000.00	LS	1	$ 25,000
2	Furnish & Install HDPE Outlet Piping	$ 250.00	LF	60	$ 15,000
3	Screen & Float Attachment	$ 35,000.00	LS	1	$ 35,000
4	Install Bar Rack on Existing Bottom Outlet	$ 15,000.00	LS	1	$ 15,000
5	Furnish and Install Aluminum Staff Gauge in Concrete Footing	$ 3,500.00	LS	1	$ 3,500
6	Furnish and Install Pressure Sensor in Outlet Pipe; Provide Radio Transmittal of Data to West Point WTP	$ 12,500.00	LS	1	$ 12,500
			Estimated Construction Cost		$ 106,000
			20% Construction Cost Contingencies		$ 21,200
			Planning and Engineering Design (10% of Construction)		$ 10,600
			Construction Administration (8% of Construction)		$ 8,500
			Total Estimated Costs		$ 146,300

(1) Existing Gate Operator to Remain.

It is recommended that an aluminum staff gauge be installed in the reservoir near the reservoir bottom and visible from the embankment levee. The staff gauge will serve as a visual check of the reservoir operating level. With expansion of the Regulating Reservoir a water surface elevation (depth) to volume curve will be prepared for the West Point Operators.

To provide an electronic monitoring of the reservoir level, a pressure sensor is proposed on the outlet pipe. The pressure in the outlet pipe can be converted to provide the relative elevation difference between the reservoir outlet pipe and the water surface elevation. Regulating Reservoir water surface elevations can be electronically transmitted to the West Point WTP along with the Bear Creek flow meter data.

3.0 MIDDLE FORK MOKELUMNE RIVER SUPPLY, PUMP STATION AND PIPELINE IMPROVEMENTS

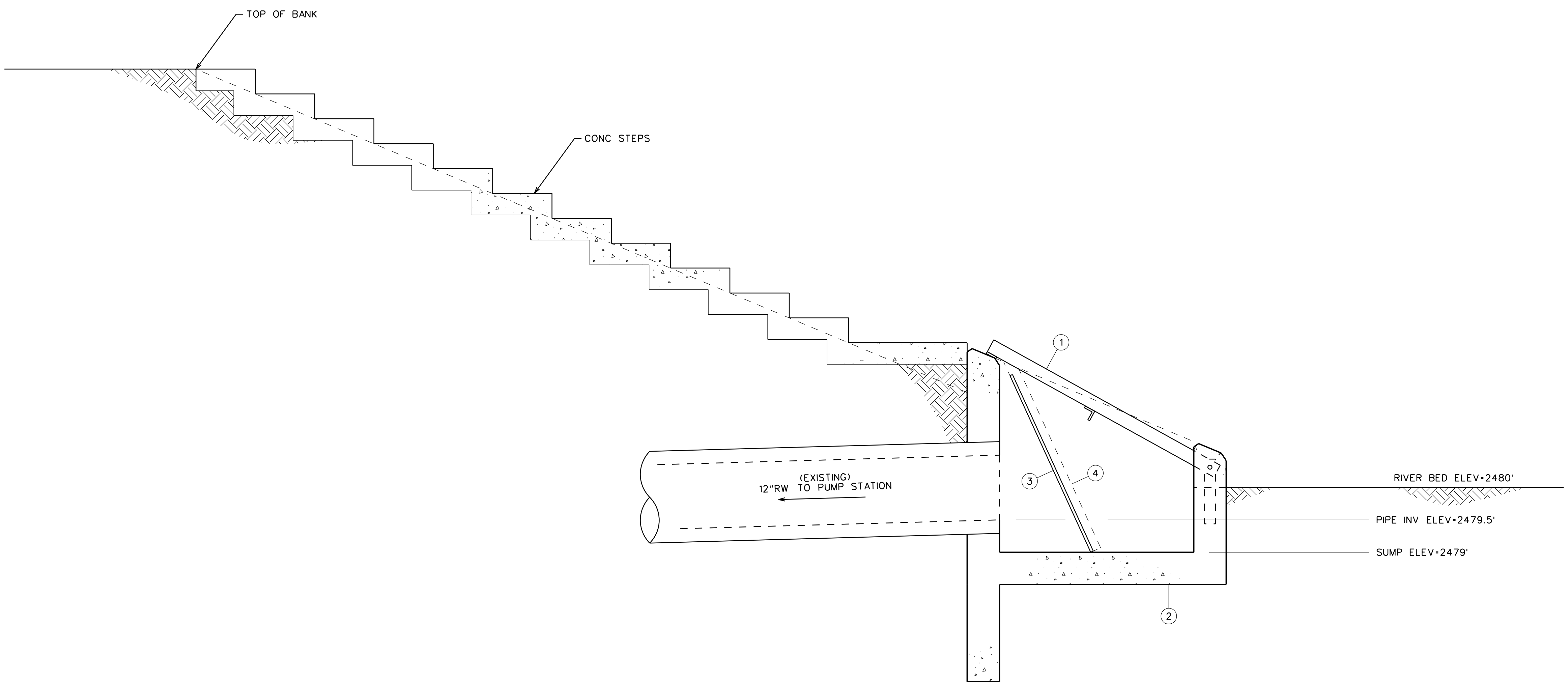
In this section of the West Point Water Master Plan improvements to the existing Middle Fork Mokelumne River (MFMR) supply system, including modifications to the Middle Fork Pump Station intake facilities, replacement of the existing MFMR Pump Station and the replacement of the pipeline that delivers MFMR water from the MFMR Pump Station to the West Point WTP, are discussed. In addition, the estimated cost of redundant West Point Water Treatment Plant capacity improvements, additional improvements to the Bummerville water distribution system and the estimated cost and benefits of either expanding Schaads Reservoir and/or constructing a new reservoir below the confluence of the Forest Creek-Middle Fork Mokelumne River (Forest Creek – Middle Fork Reservoir) are developed.

The District currently has an agreement to purchase up to 200 acre-ft. per year of MFMR water from CPUD.

3.1 Middle Fork Mokelumne River Pump Station Intake

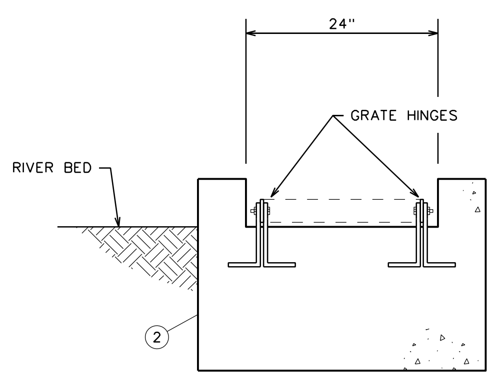
As previously discussed in Section 1.0 of this Report, the MFMR Pump Station intake facilities consist of two, 12-inch diameter, perforated or slotted, pipelines placed in the gravel material upstream of the MFMR diversion structure and, a 12-inch diameter perforated pipe placed along the upstream face of the diversion structure. During the winter of 2016-2017, high flows in the Middle Fork damaged the near surface perforated pipe collector and the perforated pipeline sections were removed by District Staff. Reinstallation by CCWD staff was completed in July 2018.

With the vulnerability of the exposed perforated pipe intake to damage from high water flows, alternative, longer term pump station intake solutions are considered here. The first option to improving the existing intake facilities includes replacing the near surface perforated pipe collector with a screen inlet placed in a concrete inlet structure. Water which is not collected by the pump station intake pipe would be allowed to flow through the inlet structure and return to the River. The existing diversion structure constructed across the River channel would remain with stop logs placed on the diversion structure except for that section closest to the new screened inlet. During low flows the river would be diverted toward the inlet screen and pump station intake. The inlet screen would be designed with access from above so that an operator standing on top of the concrete inlet structure could remove the screen through a hinged top grate, clean the interior screen and top grate of any debris and return the screen to a precast slot constructed in the inlet structure. With minimal disturbance to the river channel it is believed that a new screened inlet structure placed at the intake of the pump station intake pipe could be more easily permitted by the California Department of Fish and Wildlife than other alternatives that require excavation within the river channel. District Engineering Staff reviewed the preliminary plan presented in **Figure 21**. Staff directed modifications of this proposal with features similar to a "Ranney" type collector which would include excavation within the MFMR channel and include installation of perforated or screened collector pipes in the riverbed.

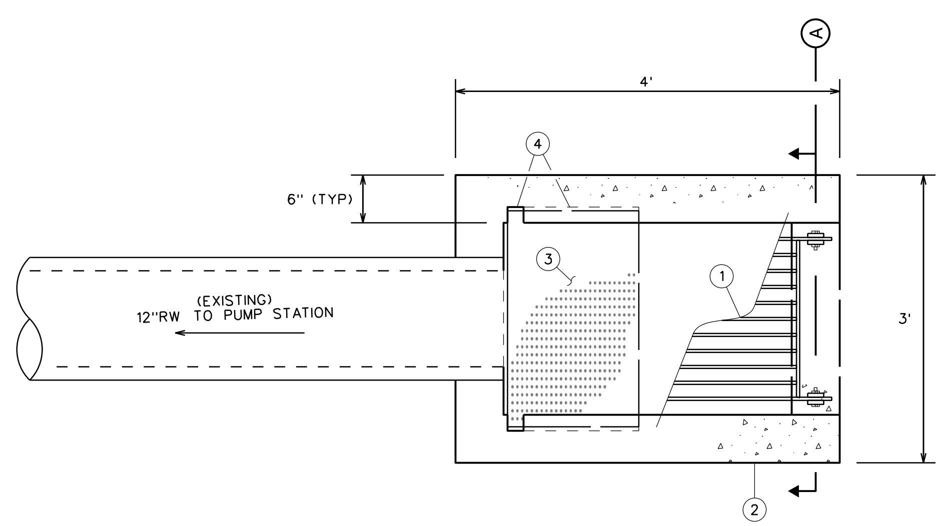


RIVER INTAKE PROFILE 1
SCALE: 1"=1'

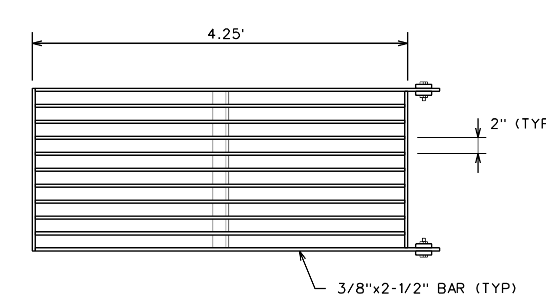
1. HINGED GRATE
2. CONC INTAKE STRUCTURE
3. PERF SS SCREEN (1/4" MESH) W/ HANDLE & SCRREN SUPPORTS
4. 2"x2" NOTCH IN CONC (TO ACCEPT PERF SCREEN)



SECTION A
SCALE: 1"=1'



RIVER INTAKE PLAN 2
SCALE: 1"=1'



HINGED GRATE DETAIL 3
SCALE: 1"=1'

REVISIONS

NO.	DESCRIPTION	DATE	BY

BENCHMARK
DESCRIPTION:
ELEV.
DATUM: NGVD 1929

SCALE: 1"=1'
JOB NO. 2517-01

30% PLANS
RELEASE 2
NOV 2017

REVIEW COPY

CALAVERAS COUNTY WATER DISTRICT MIDDLE FORK RAW WATER PUMP STATION, WEST POINT

CALAVERAS COUNTY, CALIFORNIA

RIVER INTAKE STRUCTURE

CONSULTING KASL ENGINEERS
7777 Greenback Lane
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Tel. (916) 722-1800
Fax (916) 722-4595
CIVIL - WATER RESOURCES - SURVEYING

FIGURE 21

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

Figure 22 presents a modification to the initial pump station intake proposal that includes the installation of a series of 8-inch diameter perforated pipes placed within, and aligned parallel to, the river. A ± 100-foot-long intake collection gallery is proposed with six, 8-inch diameter, perforated collectors that would connect to a 12-inch diameter manifold which would, in turn, discharge to the MFMR pump station sump. With further design development, the length and number of perforated pipe collectors would be reviewed. Either C900 PVC or high strength HDPE pipe could be used for the collection gallery and manifold piping. The perforated pipe collectors would be set in 1- to 2-inch diameter drain rock bedding and initial backfill material. Final backfill would utilize larger diameter (2- to 6-inch diameter) cobble and existing riverbed material. The design presented in Figure 22 is similar to the river collection gallery installed in the Calaveras River for the Jenny Lind Water Treatment Plant. The Jenny Lind raw water collection system was placed into operation in the early 1990s and has been in continuous service since that time. For the Jenny Lind Project, the Contractor received approval from the California Department of Fish and Game (now Wildlife) to construct coffer dams to divert portions of the Calaveras River during construction.

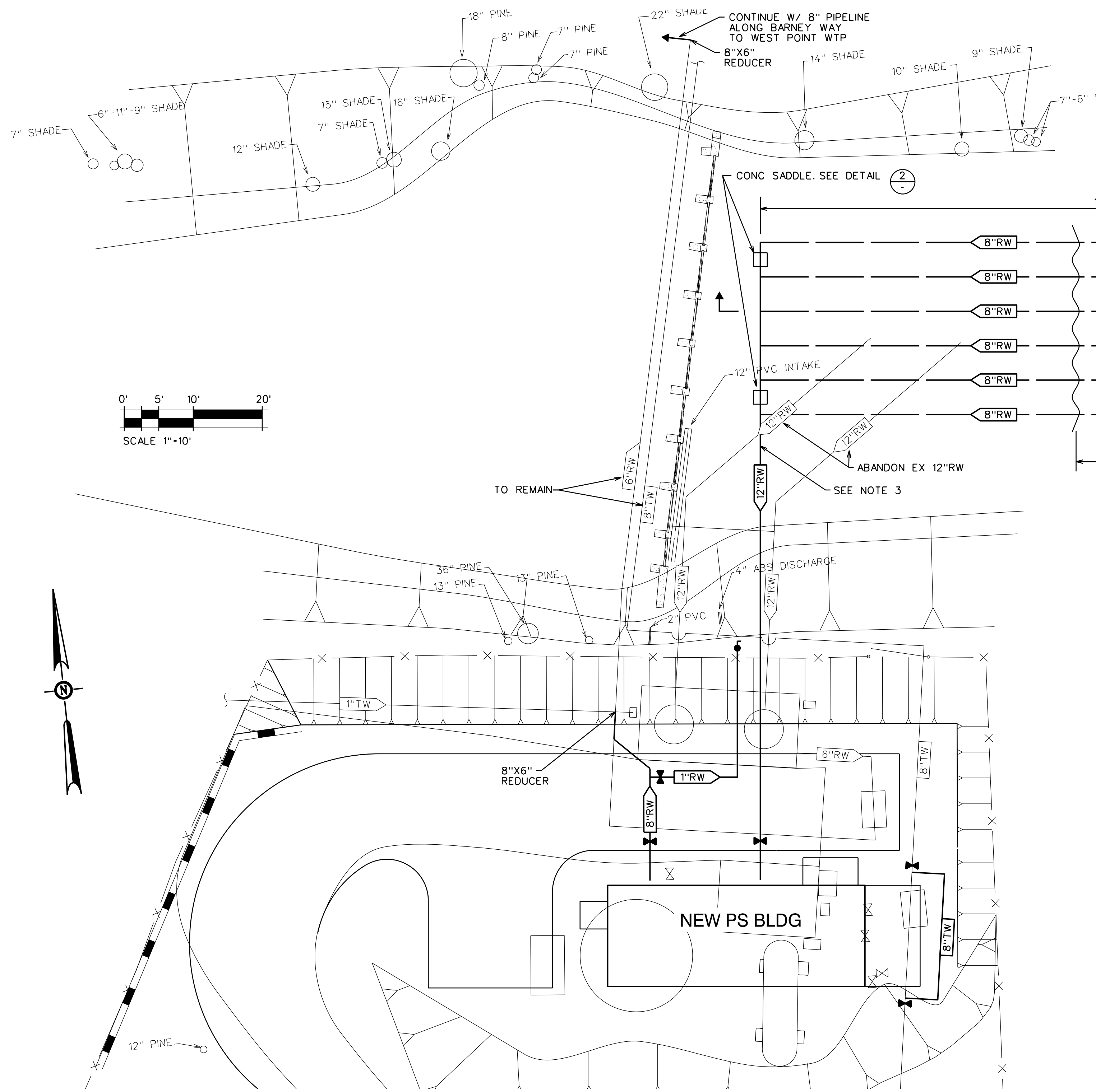
CCWD Engineering Staff also reviewed the MFMR pump station intake facilities shown in Figure 22 and suggested that further modifications may be warranted.

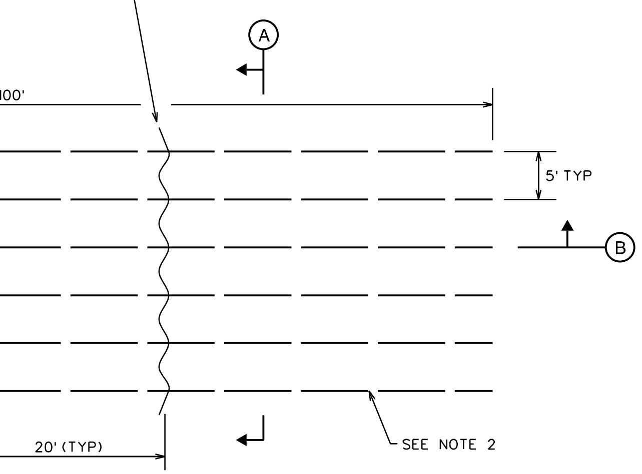
The estimated costs of the currently proposed MFMR pump station intake facilities are presented in **Table 6**.

3.2 Middle Fork Mokelumne River Pump Station

The existing MFMR Pump Station is constructed with a capacity of 200 gpm. As previously discussed in Section 1.0, the pump station capacity should be increased to provide 100% of the West Point service area water supply during periods when water from Bear River is not available or Bear River water quality is not acceptable. According to the Mokelumne River Long-Term Needs Water Study, a MFMR pump station capacity of 500 gpm would be expected to meet the demands of the West Point service area at least through the year 2100. The District has suggested that a smaller, satellite, water treatment plant with approximately 200 gpm capacity could be constructed in the future to serve the Wilseyville area. If this did occur the capacity of the MFMR pump station could be further reduced. A future Wilseyville WTP constructed in the vicinity of Blue Mountain Road would require approval, design and construction of a Middle Fork Ditch Pipeline and a new water appropriation agreement with CPUD. For the purpose of this Supplemental Master Plan Report, MFMR pump station improvements with 500 gpm capacity are proposed. The pumps could be driven by variable frequency drive (VFD) motors which would allow a range (reduction) of flows in the future.

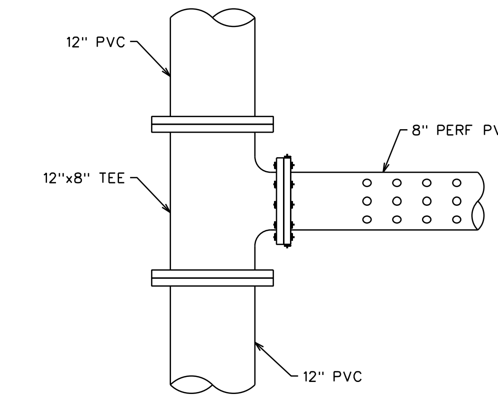
As further described in this Supplemental Master Plan Report, the design of the MFMR Pump Station is based on the replacement of the existing 6-inch diameter MFMR Pump Station to West Point WTP supply pipeline with an 8-inch diameter pipe. The new MFMR pump station pumps would lift the Middle Fork supply to the West Point WTP (static lift of ±450 feet) without the continued operation of the intermediate pump station on Acorn Way. This existing intermediate pumping facility would be removed from service.





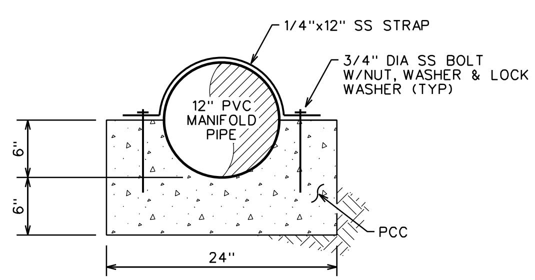
RIVER INTAKE PLAN

SCALE: 1"=10'



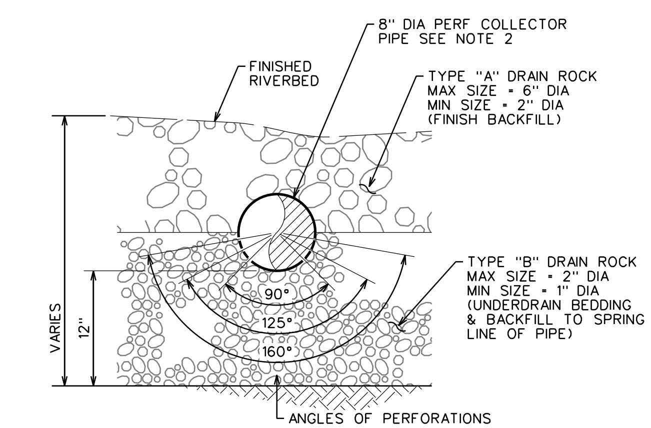
CONNECTION DETAIL 1/-

NO SCALE



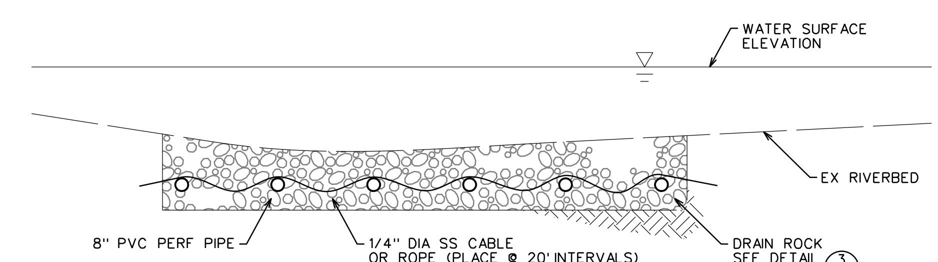
CONC SADDLE DETAIL 2/-

NO SCALE



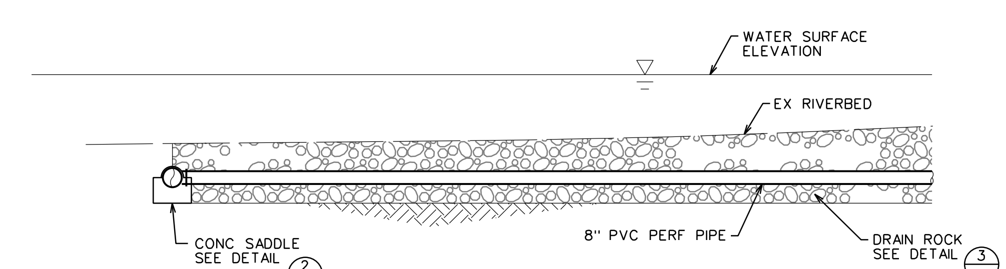
DRAIN ROCK DETAIL 3/-

NO SCALE



SECTION A

NO SCALE



SECTION B

NO SCALE

LOOP 1/4" DIA SS CABLE OR ROPE AROUND COLLECTOR PIPES AND BURY CABLE OR ROPE BETWEEN PIPES

NOTES:

1. WATER SURFACE ELEV. 2482' AS RECORDED ON MAY 4, 2017
2. 8" PERFORATED COLLECTOR PIPE SHALL BE SCHEDULE 40 PVC PERFORATED UNDERDRAIN PIPE WITH SOLVENT WELD JOINTS OR EQUAL. PERFORATION HOLE SIZE: 1/2", HOLE SPACING: 3-1/4".
3. 12" MANIFOLD PIPE TO PROPOSED INFLUENT PUMP STATION SHALL BE 12" CL 305 PVC.
4. RETURN RIVER BED TO EXISTING ELEVATIONS AFTER INTAKE MANIFOLD AND INTAKE COLLECTORS ARE PLACED.

NO.	DESCRIPTION	DATE	BY
REVISIONS			

BENCHMARK DESCRIPTION:

ELEV.
DATUM: NGVD 1929

SCALE: 1"=10'

JOB NO. 2517-01

30% PLANS
RELEASE 2
NOV 2017

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CALAVERAS COUNTY WATER DISTRICT MIDDLE FORK RAW WATER PUMP STATION, WEST POINT

CALAVERAS COUNTY, CALIFORNIA

RAW WATER INTAKE

KASL CONSULTING ENGINEERS
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Tel. (916) 722-1800
Fax (916) 722-4595
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FIGURE 22

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

Table 6. Estimated Costs of the Currently Proposed MFMR Pump Station Intake Facilities

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	12" Diameter Intake Manifold	$ 150.00	LF	40	$ 6,000
2	8" Diameter Perforated Pipe Collectors	$ 100.00	LF	600	$ 60,000
3	Concrete Saddles and SS Straps	$ 750.00	EA	2	$ 1,500
4	1/4" Diameter Stainless Steel Cable	$ 15.00	LF	250	$ 3,750
5	Type A Drain Rock	$ 100.00	CY	220	$ 22,000
6	Type B Drain Rock	$ 120.00	CY	110	$ 13,200
7	12" Diameter Piping to MFMR PS Building	$ 150.00	LF	80	$ 12,000
				Estimated Construction Cost	$ 118,450
				20% Construction Cost Contingencies	$ 23,750
				Planning and Engineering Design (10% of Construction)	$ 12,000
				Permitting (est.)	$ 15,000
				Construction Administration (8% of Construction)	$ 9,500
				Administration and Legal Costs (5% of Construction)	$ 6,000
				TOTAL ESTIMATED COSTS	$ 184,700

The new MFMR pumps would also provide head for 20 psi of losses through the 1 MGD microfloc plant at the West Point WTP. A total design head (TDH) of approximately 550 feet is calculated with the new 8-inch supply pipe and a design flow at 500 gpm. To respond to the high static and dynamic pressures which must be carried by the new pipeline, high strength, Class 305, PVC C900 pipe is proposed. If the MFMR flow delivered by the new pump station exceeds the demands of the West Point WTP, excess flow would be diverted to the West Point Regulating Reservoir via the existing supply line placed between the Regulating Reservoir and the West Point WTP.

The finished floor elevation at the existing MFMR pump station is too low. High water levels in the MFMR at the pump station can exceed the existing MFMR pump station floor elevation (±2,487.2), as evidenced by flooding of the building housing the MFMR pumps in the winter of 2016-17.

Figure 23 presents the proposed MFMR Pump Station Demolition Plan. The existing pump station building, storage building, abandoned filter, standby generator building and fuel tank pad would be removed together with existing pavement. The pavement removed could be ground and reused as subgrade for the new pump station construction. Demolition of existing improvements will need to protect the 8-inch diameter treated water line which crosses through the pump station site and serves nearby Wilseyville residents. Similarly, the existing 6-inch diameter raw water supply line that crosses the Middle Fork within

the MFMR pump station diversion structure must also remain. This short section of existing 6-inch raw water would remain and would connect, on both sides of the river crossing, with the new 8-inch diameter pipe improvements.

Figure 24 presents the proposed MFMR Pump Station Site Plan. The new pump station is proposed with a finished floor of 2490.15, approximately 3 feet higher than the finished floor elevation of the existing pump station. As shown in Figure 24, site grades are also raised 3 to 4 feet and the site surfaced with 3-inch-thick AC over 8-inch thick Class 2 AB pavement. Rock slope protection is proposed to transition the new site grades to existing grades at the top of bank. No fill is proposed within the Middle Fork Mokelumne River as part of these pump station improvements. A new standby generator is proposed on a separate concrete pad with cover attached to the east side of the new MFMR Pump Station building.

The new, 2 pump, pump station plan and section is presented in **Figure 25.** Two, multistage vertical turbine pumps (100% redundancy) are proposed. To deliver 500 gpm with a TDH of approximately 550 feet will require 100 horsepower variable frequency drive motors. The VFDs will provide a "soft start" to protect the supply pipeline from "pump on" surges. A surge anticipation and pressure relief valve is proposed to protect piping from reverse surges when a sudden power loss occurs. The pump station will be supplied with a flow meter. A pressure gauge would be installed at the discharge of the pumps to monitor pump performance and provide shut down alarms in the event of discharge pressures or surges outside of acceptable ranges. The Motor Control Center (MCC) installation will include a Human-Machine Interface (HMI) panel. The information available on this panel (flow rate, pump operating station discharge pressure, standby generator status, standby generator fuel level, generator oil pressure level, pump fail, building intrusion alarms and the like) will be relayed, via radio telemetry, to the West Point WTP. CCWD electrical and instrumentation staff have confirmed that radio transmission of MFMR pump station conditions and remote Supervisory Control and Data Acquisition (SCADA) is available between the West Point WTP and the MFMR Pump Station. Information displayed on the MFMR Pump Station Programmable Logic Controller (PLC) will also be available for display and response at the West Point WTP central computer.

Further refinement of new MFMR pump station facilities will occur at the design stage. The District may elect to install a 3 pump, pump station with any two pumps capable of delivering the Master Plan raw water demands to the West Point Water Treatment Plant. Under these conditions, each of the three multistage vertical turbine pumps could be driven by ± 75 hp variable frequency drive motors.

LEGEND

- REMOVE EXISTING STRUCTURE
- REMOVE EXISTING PAVEMENT
- REMOVE EXISTING UTILITY

NOTES

1. REMOVE EX PUMP STATION BUILDING, STORAGE BUILDING, ABANDONED FILTER, GENERATOR BUILDING, ABANDONED VALVES & METER VAULT.
2. REMOVED PAVEMENT MAY BE RECYCLED AND REUSED AS SUBGRADE MATERIAL AS ON OPTION TO THE CONTRACTORS. RECYCLED MATERIAL SHALL MEET SUITABLE FILL REQUIREMENTS AS NOTED IN THE SPECIFICATION.

NO.	DESCRIPTION	DATE	BY

REVISIONS

BENCHMARK DESCRIPTION:

ELEV. DATUM: NGVD 1929

30% PLANS RELEASE 2 NOV 2017

SCALE:

JOB NO. 2517-01

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CALAVERAS COUNTY WATER DISTRICT MIDDLE FORK RAW WATER PUMP STATION, WEST POINT

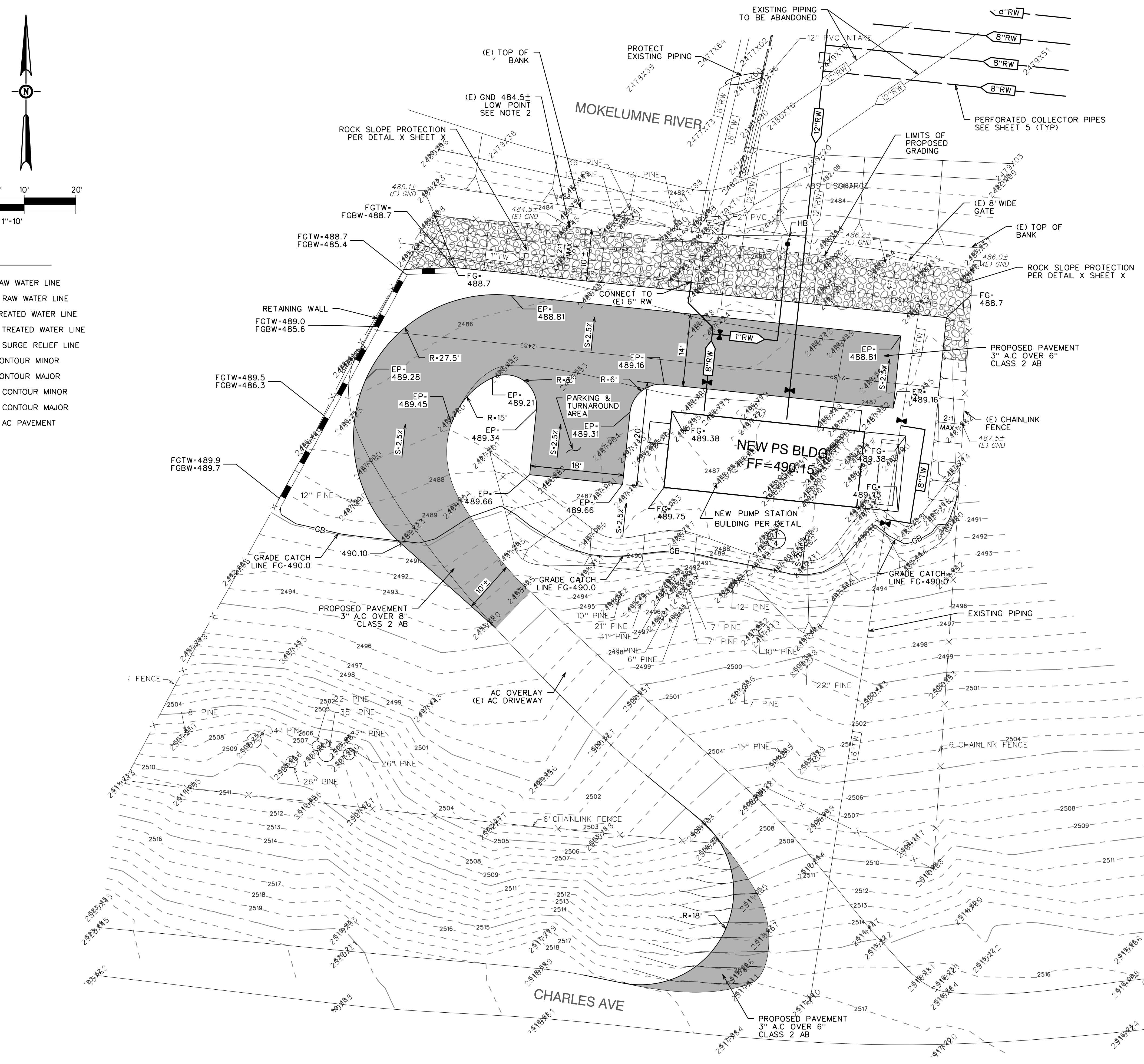
CALAVERAS COUNTY, CALIFORNIA

MOKELUMNE RIVER PUMP STATION DEMOLITION PLAN

KASL CONSULTING ENGINEERS
7777 Greenback Lane Suite 104 Citrus Heights, CA 95610
Tel. (916) 722-1800
Fax (916) 722-4595
CIVIL - WATER RESOURCES - SURVEYING

FIGURE 23

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



LEGEND

- 12"RW — EXISTING RAW WATER LINE
- 12"RW — PROPOSED RAW WATER LINE
- 6"TW — EXISTING TREATED WATER LINE
- 8"TW — PROPOSED TREATED WATER LINE
- 3"SR — PROPOSED SURGE RELIEF LINE
- 2488 — EXISTING CONTOUR MINOR
- 2485 — EXISTING CONTOUR MAJOR
- 2488 — PROPOSED CONTOUR MINOR
- 2490 — PROPOSED CONTOUR MAJOR
- PROPOSED AC PAVEMENT
- HB HOSE BIBB

NOTES

1. DATUM: ADD 2000' TO THE PROPOSED AND EXISTING SPOT ELEVATIONS SHOWN.
2. LOW POINT OF SITE ALONG FENCE ELEV=2484.5 APPARENT HIGH WATER MARK ELEVATION APPROXIMATELY 2485.

NO.	REVISIONS DESCRIPTION	DATE	BY

BENCHMARK DESCRIPTION:

ELEV.
DATUM: NGVD 1929

30% PLANS
RELEASE 2
NOV 2017

SCALE: 1"=10'
JOB NO. 2517-01

REVIEW COPY

CALAVERAS COUNTY WATER DISTRICT MIDDLE FORK RAW WATER PUMP STATION, WEST POINT

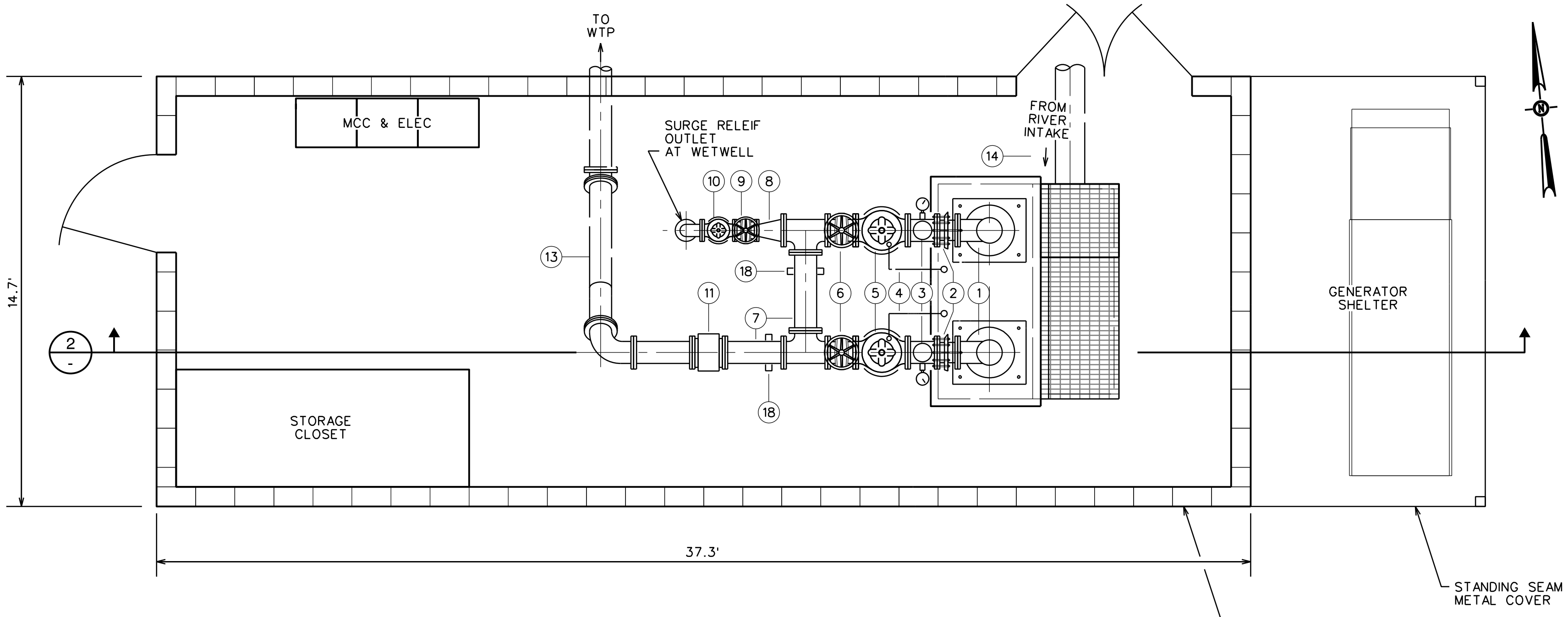
CALAVERAS COUNTY, CALIFORNIA

MOKELUMNE RIVER PUMP STATION SITE AND GRADING PLAN

CONSULTING KASL ENGINEERS
7777 Greenback Lane
Suite 104
Citrus Heights, CA 95610
Tel. (916) 722-1800
Fax (916) 722-4595
CIVIL - WATER RESOURCES - SURVEYING

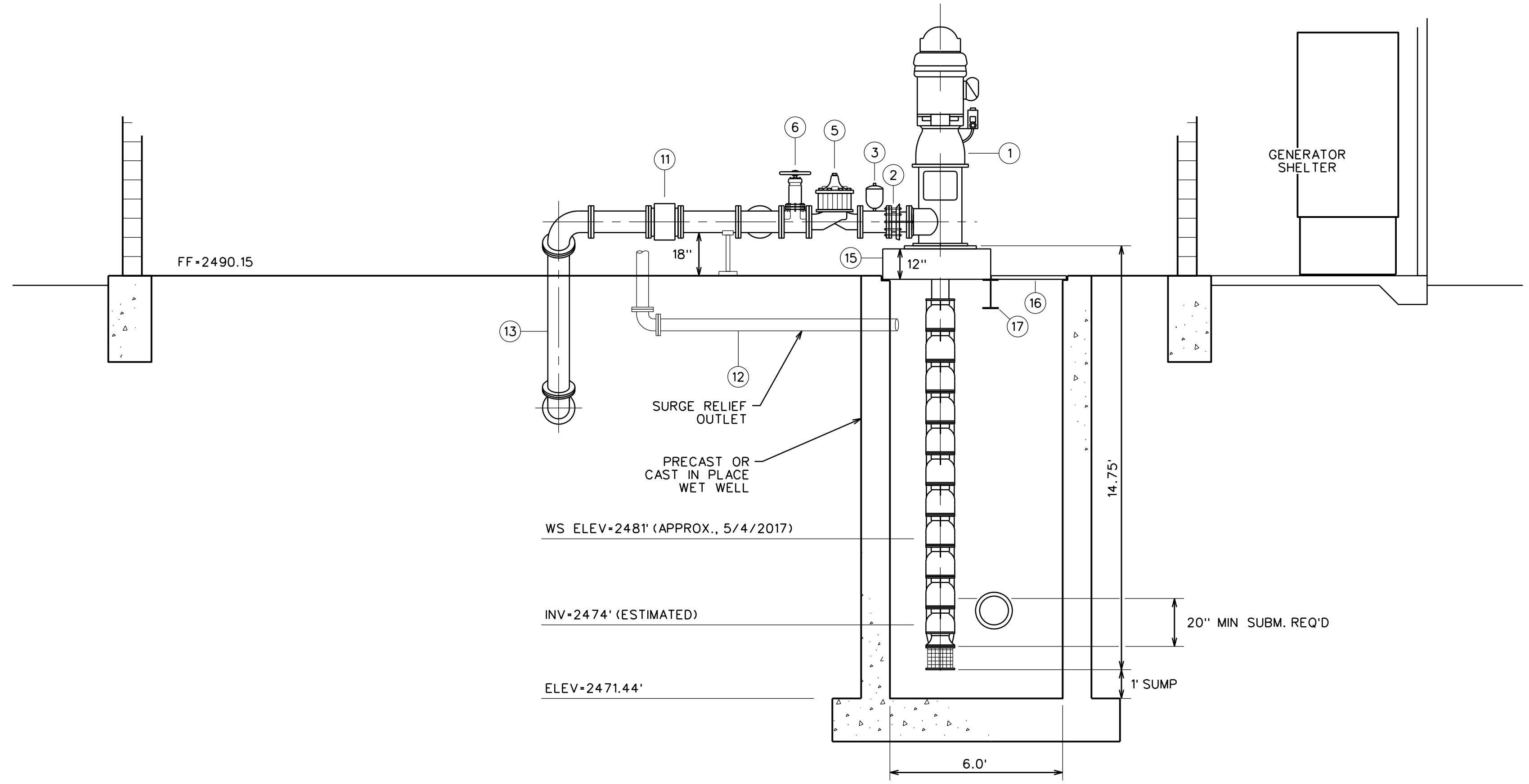
FIGURE 24

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



PUMP STATION PLAN (1/-)
SCALE: 1"=3'

1. VERTICAL TURBINE PUMP
2. 8" DISMANTLING JOINT
3. 1" AVRV, PRESSURE GAUGES & 8" DIP SPOOL
4. PUMP CONTROL VALVE DRAIN LINE
5. 8" PUMP CONTROL & CHECK VALVE
6. 8" GATE VALVE
7. 8" DIP SPOOL
8. 8"x3" REDUCER
9. 3" GATE VALVE
10. 3" SURGE ANTICIPATION & PRESSURE RELIEF VALVE
11. 8" MAGNETIC FLOW METER
12. 3" DIP
13. 8" DIP
14. 12" DIP
15. PUMP BASE
16. GALVANIZED BAR GRATING
17. I BEAM
18. PIPE SUPPORT



PUMP STATION SECTION (2/-)
SCALE: 1"=3'

REVISIONS

NO.	DESCRIPTION	DATE	BY

BENCHMARK
DESCRIPTION:
ELEV.
DATUM: NGVD 1929

30% PLANS
RELEASE 2
NOV 2017

SCALE:
JOB NO. 2517-01

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CALAVERAS COUNTY WATER DISTRICT
MIDDLE FORK RAW WATER PUMP STATION, WEST POINT
CALAVERAS COUNTY, CALIFORNIA

PUMP STATION PLAN AND SECTION

CONSULTING KASL ENGINEERS
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Fax (916) 722-4595
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FIGURE 25

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY

As shown in Figure 25, a concrete masonry unit (CMU) block wall pump station building is proposed (dimensions approximately 15 feet (width) by 37 ½ feet (length)) with standing metal seam roof. The pump station roof will include skylights or hatches centered over the pumps to permit removal of the vertical turbine pumps through the skylights or the roof access hatches, if necessary, for pump repair or for pump replacement. A seven-foot-wide equipment access and 3'-6" wide personnel access doors are also proposed.

The MFMR pump station replacement plans shown in Figures 23, 24 and 25 were reviewed with the CCWD District Engineer. The preliminary pump station improvements were approved, in concept, for the purpose of this Master Plan. A cost estimate of the proposed MFMR pump station is presented in **Table 7**.

3.3 Middle Fork Pump Station to West Point WTP Pipeline

To deliver 500 gpm from the Middle Fork Pump Station to the West Point WTP will require replacement of the existing 6-inch diameter pipeline with a new 8-inch diameter pipeline. Three alternative alignments were considered and are shown in **Figure 26**.

3.3.1 Alternative Pipeline Alignment 1

This alternative would replace the existing MFMR supply pipeline with a new pipeline constructed along the same route as the existing. The disadvantage of this alignment include construction along an existing (15-foot-wde) CCWD pipeline easement located between Acorn Way and Barney Way and along an existing (15-foot-wide) CCWD pipeline easement located between Bald Mountain Road and Smitty Lane. This alternative alignment also requires crossing the Middle Fork within the existing MFMR diversion structure. The advantage of this alternative is that it is the shortest of the three alternative alignments considered (approximately 10,225 lineal feet).

3.3.2 Alternative Pipeline Alignment 2

With this option the new supply pipeline would not cross the MFMR between Charles Avenue and Barney Way at the existing MFMR pump station. Instead, the Alternative 2 pipeline alignment continues along Charles Way to State Route 26 and would cross the MFMR at the existing SR 26 Bridge. This is a relatively new bridge structure and includes a utility chase within the bridge structure. The West Point sewer outfall to the West Point WWTP is included in this structure. There is adequate space (in the utility chase) to also place an 8-inch diameter raw water line. Alignment 2 continues along State Route 26 through Central West Point to Winton Road and then along Winton Road and Smitty Lane and to the West Point WTP.

The advantage of this alignment is that the pipeline could be placed along and within public road rights of way from the MFMR Pump Station to the West Point WTP. The disadvantages of this alternative is that more than 1.5 miles of this route is within State Highway 26 and would require encroachment permits from Caltrans. Typically, Caltrans does not permit utilities placed longitudinally within the paved roadway section. With adequate cover (min. 42 inches) the new pipeline could be placed along the unpaved shoulder. There are, however, portions of State Route 26 within the Alternative 2 Alignment where there is little or no shoulder available. Alternative 2 is the longest of the three alternative routes considered (approximately 13,900 feet) and nearly 3700 feet longer than Alternative 1.

Table 7. Cost Estimate of the Proposed MFMR Pump Station

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Mobilization, Site Clearing and Grubbing	$ 50,000.00	LS	1	$ 50,000
2	Remove Existing Structures	$ 5,000.00	EA	4	$ 20,000
3	Remove Existing Fence	$ 10.00	LF	50	$ 500
4	Remove Existing Pavement	$ 2.00	SF	2300	$ 4,600
5	Remove Existing Raw Water Piping	$ 25.00	LF	160	$ 4,000
6	Earthwork Embankment	$ 20.00	CY	600	$ 12,000
7	Rock Slope Protection	$ 200.00	CY	150	$ 30,000
8	Type A A.C.	$ 250.00	TONS	50	$ 12,500
9	Class 2 A.B.	$ 100.00	TONS	85	$ 8,500
10	Install 4' Tall CMU Retaining Wall	$ 150.00	LF	55	$ 8,250
11	Install 6' Tall Chain Link Fence & Gate	$ 50.00	LF	50	$ 2,500
12	1" Raw Water Pipe	$ 20.00	LF	30	$ 600
13	8" Raw Water Pipe	$ 100.00	LF	30	$ 3,000
14	12" Raw Water Pipe (included in MFMR)				
15	1" Gate Valve	$ 250.00	EA	1	$ 250
16	8" Gate Valve	$ 2,000.00	EA	1	$ 2,000
17	12" Gate Valve	$ 3,000.00	EA	1	$ 3,000
18	Pump Station Building	$ 350.00	SF	570	$ 199,500
19	Vertical Turbine Pumps	$ 75,000.00	EA	2	$ 150,000
20	Pump Station VFD Controls, MCC	$ 80,000.00	LS	1	$ 80,000
20	Pump Station Electrical Panel	$ 95,000.00	LS	1	$ 95,000
21	Pump Station Wet Well	$ 25.00	CY	2000	$ 50,000
22	Pump Station Piping & Valves	$ 20,000.00	LS	1	$ 20,000
22	Underslab Conduits & Piping	$ 5,000.00	LS	1	$ 5,000
23	Fans & Louvers, HVAC	$ 5,000.00	LS	1	$ 5,000
24	Standing Seam Metal Roof	$ 50.00	SF	900	$ 45,000
25	150 kw Standby Generator and ATS	$200,000.00	LS	1	$ 200,000
26	Surge Anticipation and Pressure Relief Valves	$ 10,000.00	LS	1	$ 10,000
27	6" Flow Meter and Misc. Instrumentation	$ 10,000.00	LS	1	$ 10,000
28	SCADA Antennae and Radio Telemetry Equipment	$ 85,000.00	LS	1	$ 85,000
	Estimated Construction Cost all items				$ 1,116,200.00
		20%	Contingency		$ 223,250.00
	Planning & Engineer Designs (10% of Construction Cost)				$ 112,000.00
	Construction Administration (5% of Construction Cost)				$ 56,000.00
	Administration and Legal Costs (2% of Construction Cost)				$ 22,325.00
		TOTAL ESTIMATED COSTS			$ 1,529,775.00

ALTERNATIVE PIPELINE ROUTES
MFMR WATER SUPPLY PIPELINE
MIDDLE FORK PUMP STATION TO
WEST POINT WATER TREATMENT PLANT

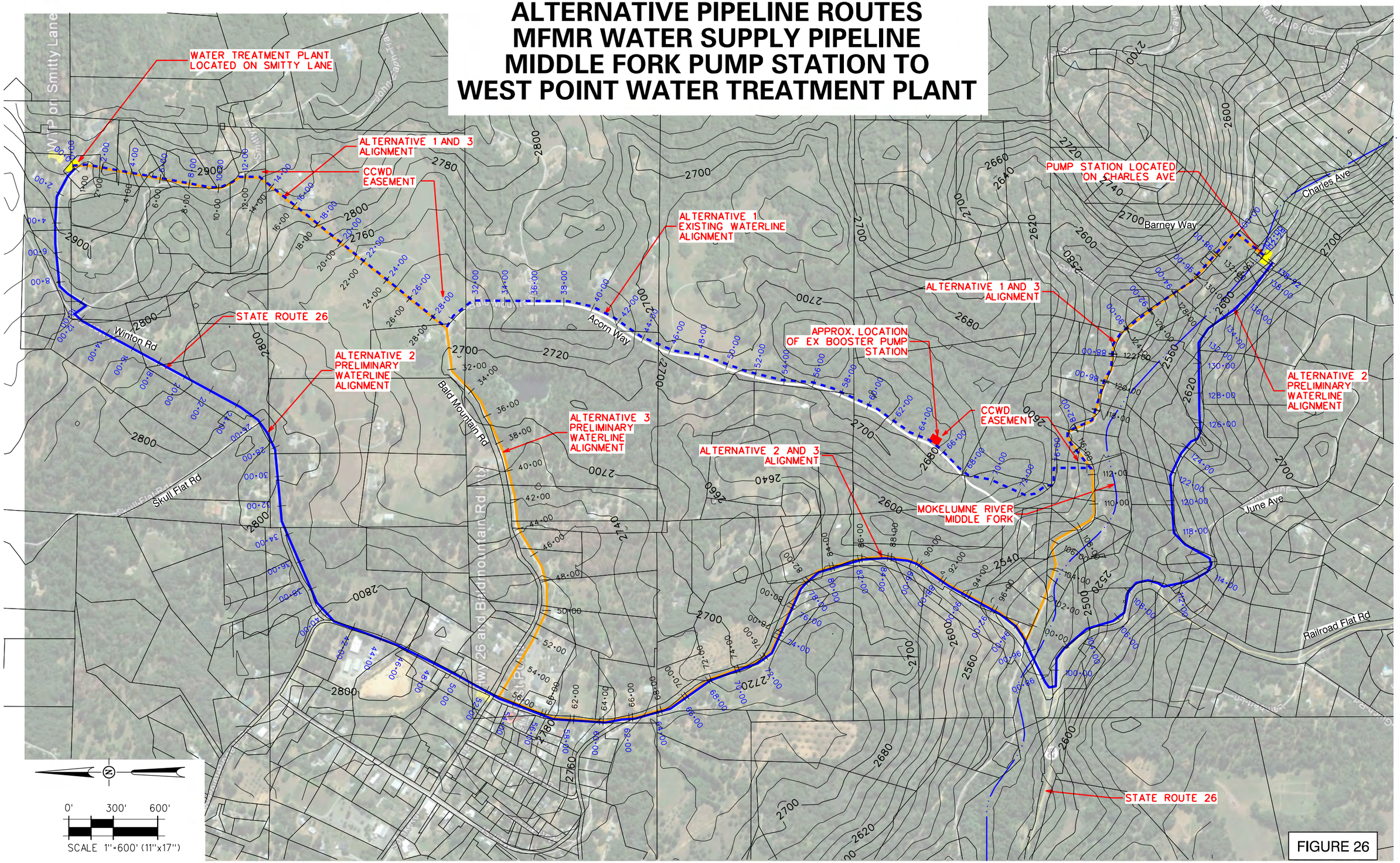

FIGURE 26

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DATE: 3/29/2018

3.3.3 Alternative Pipeline Alignment 3

Alternative 3 is a "hybrid" route combining portions of Alternative 1 and Alternative 2. Along this route the pipeline would utilize the existing MFMR crossing at the MFMR diversion structure and then continue west along Barney Way. Rather than follow the easement between Barney Way and Acorn Way, Alternative 3 would continue along Barney Way to State Route 26 and follow State Route 26 to Bald Mountain Road, continuing north and east along Bald Mountain Road to the existing CCWD easement and Alternative Pipeline Alignment 1 to Smitty Lane and the West Point WTP.

Alternative 3 is approximately 13,625 lineal feet and is, therefore, some 3400 feet longer than Alternative 1, but shorter than Alternative 2. Some of State Route 26 footage and the Acorn Way to Barney Way easement are avoided with this alignment, however, an encroachment permit from Caltrans would still be required and portions of SR 26 with little or no shoulder width are still included.

Based on this analysis and our field review of all three options, the existing alignment, Alternative 1, was selected. Selection of this alignment will require maintenance of the existing CCWD easements and improved easement access, especially during winter months. It is recommended that with the construction of the new pipeline along the Alternative 1 route a minimum 12-foot-wide section of the existing 15-foot-wide easement be surfaced with not less than 6-inch thick Class of Aggregate Base to help provide all weather access.

A profile of the selected, Alternative 1 alignment is presented in **Figure 27.** As noted, higher pressure (CL 305) pipe will be needed for the lower (Barney Way) portions of the pipeline replacement. Construction of the new MFMR water supply pipeline with higher strength pipe is considered a reasonable tradeoff to the continued operation of the Acorn Pump Station which is difficult to access and maintain, especially during winter months.

With the Alternative 1 Alignment and the use of PVC C900 pipe materials, a Hazen Williams C=130 coefficient was assumed consistent with CCWD Design Standards. At 500 gpm the delivery velocity would be 3.19 ft./sec. An automatic flow control regulating valve is proposed near the connection of the MFMR pipeline to the West Point WTP to permit bypass of excess flows to the Regulating Reservoir when the WWTP is in filter backwash or clarifier scour modes. The flow regulating valve would be programmed to divert MFMR flows to the Regulating Reservoir and then return the MFMR supply to the West Point WTP when the treatment plant is in normal filtration mode.

The estimated cost of the Middle Fork Mokelumne River Water Supply Pipeline, along the recommended Alternative 1 Alignment, is presented in **Table 8**.

C900 CLASS 165 PSI (DR 25)

HYDRAULIC PROFILE - PROPOSED REPLACEMENT PIPELINE MFMR PUMP STATION TO WEST POINT WTP

EXISTING HYDRAULIC PROFILE SEE NOTE 1

DYNAMIC HEAD SEE NOTE 3

STATIC HEAD SEE NOTE 3

STORAGE TANK ELEVATION= 2925 (FULL) SEE NOTE 2

WTP @20 PSI

WATER TREATMENT PLANT LOCATED ON SMITTY LANE (ASSUME 20 PSI REQUIRED AT WTP) FOR REPLACEMENT PUMP STATION AND PIPELINE.

PRESSURE = 48 PSI DYNAMIC

PRESSURE = 56 PSI DYNAMIC

PRESSURE OUT = 127 PSI ACORN PS

PRESSURE = 115 PSI STATIC

PRESSURE = 170 PSI STATIC

PRESSURE = 119 PSI MF PS

H = 46.2 WTP PSI

H = 97.2 FRICTION

H = 450 STATIC

TDH ±595 FEET

EXISTING HYDRAULIC PROFILE SEE NOTE 1

C900 CLASS 235 PSI (DR 18)

C900 CLASS 305 PSI (DR 14)

(E) PRESSURE IN ACORN PS = 20 PSI

(E) ACORN PUMP STATION

(TO BE ABANDONED)

NEW MIDDLE FORK MOKELUMNE RIVER PUMP STATION LOCATED ON CHARLES AVENUE FLOOR EL ±2490 MIN WATER SURFACE EL ±2474

NOTES:

1. HYDRAULIC PROFILE OF EXISTING 6" PIPELINE, PER CCWD WEST POINT/WILSEYVILLE WATER SYSTEM INTERTIE PLANS DATED 8-10-88.
2. MAXIMUM WATER SURFACE ELEVATION OF 2925 ESTABLISHED FROM PAGE 7 OF THE CCWD WEST POINT/WILSEYVILLE WATER SYSTEM INTERTIE PLANS DATED 8-10-88.
3. HYDRAULIC PROFILE OF REPLACEMENT PUMP STATION AND PIPELINE (700 GPM).

HYDRAULIC AND GROUND PROFILE ALTERNATIVE 1 REPLACEMENT 8" DIAMETER WATER LINE MIDDLE FORK PUMP STATION TO WEST POINT WATER TREATMENT PLANT EXISTING WATERLINE ALIGNMENT

CALAVERAS COUNTY WATER DISTRICT

FIGURE 27

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Table 8. Cost of the Middle Fork Mokelumne River Water Supply Pipeline Along the Recommended Alternative 1 Alignment

ITEM NO.	DESCRIPTION	ESTIMATED UNIT COST	UNIT	ESTIMATED QUANTITY	ESTIMATED COST
1	Mobilization (1)		LS	1	$ 82,000
2	8" PVC C900 CL 165 (DR 25)	$ 125.00	LF	7000	$ 875,000
3	8" PVC C900 CL 235 (DR 18)	$ 150.00	LF	1800	$ 270,000
4	8" PVC C900 CL 305 (DR 14)	$ 175.00	LF	1450	$ 253,750
5	Air Release Valve	$ 5,000.00	EA	9	$ 45,000
6	Automatic Flow Control Regulating Valve	$ 10,000.00	EA	1	$ 10,000
7	CCWD Easement Area All Weather Surfacing (6" Thick Class 2 A.B.)	$ 40.00	LF	2700	$ 108,000
			Estimated Construction Cost		$ 1,643,750
	20%		Construction Cost Contingencies		$ 328,750
			Planning & Engineering Design (10% of Construction)		$ 164,375
			Construction Administration (5% of Construction)		$ 82,200
			Administrative and Legal Costs (3% of Construction)		$ 49,300
			Total Estimated Costs		$ 2,268,375

(1) Estimated at 5% of Construction Cost.

3.4 Redundant Water Treatment Plant Capacity

The existing West Point Water Treatment Plant has adequate capacity (700 gpm) to meet the current and projected year 2100 treated water demands of the West Point service area. The plant is relatively new being placed into operation in the early 2000's. The existing facility consists of a single "train", 1 MGD, MicroFloc type plant. A second, parallel, 1 MGD Water Treatment Plant, similar to the existing is critical for system redundancy and reliability. With a second, parallel, water treatment plant either facility could be removed from service for repair, cleaning or improvements without loss of service to the West Point community. Concept level plans for the future installation of the second 1 MGD capacity plant were reviewed with CCWD Engineering staff. The existing West Point WTP building is not large enough to house a second WTP with capacity similar to the existing. To facilitate operation and maintenance, it would be preferred to modify / enlarge the existing WTP building to permit a second, parallel, WTP. There are older, abandoned, water

filtration units adjacent to the existing WTP building. These could be removed and the existing building expanded to the east. Other alternatives include evaluation of smaller redundant WTP units that encompass a smaller footprint and may be more easily accommodated with less modifications and /or expansions of the existing building.

Design development of the redundant West Point filter will result in the selection of the best option. For the purpose of this Supplemental Master Plan Report the cost of the redundant WTP can be estimated from the year 2000 Construction Bids received for the existing 1 MGD plant. The average of the 10 Construction Bids received was approximately $1,630,000. Escalating these mid-2000 bid prices (Engineering News Record Construction Cost; ENRCC=6233) to current dollars would result in an estimated cost of $2,925,000 for the redundant West Point Water Treatment Plant (current ENRCC = 11,183).

3.5 Bummerville Water System Distribution Improvements

In the 2004 West Point / Wilseyville / Bummerville System Improvements, Final Feasibility Report (HDR, November 2004) Bummerville supply and distribution system improvements were recommended to improve system reliability and fire flows. These primarily included improvements to replace existing undersized mains with 6 inch and 8 inch diameter pipe. Since 2004, a booster pump was installed at the West Point WTP to better serve Bummerville. Approximately 1200 lineal feet of 8 inch diameter water transmission was constructed between the West Point WTP and the Bummerville Water Storage Tank. A new water tank was installed. Downstream of the new Bummerville tank distribution system improvements recommended in the 2004 Final Feasibility Report have not been constructed. Remaining improvements needed to serve the Bummerville community include:

- 5500 LF of 6 inch diameter water main
- 4550 LF of 8 inch diameter water main
- 18, each, 6 inch diameter gate valves and 17, each, 8 inch diameter gate valves
- Miscellaneous pavement repairs
- 43 water service connections

The estimated cost of these improvements including design, construction management and construction cost is $1,811,000.

3.6 Schaads Reservoir

Schaads Reservoir, owned and operated by the Calaveras Public Utility District, is located on the Middle Fork of the Mokelumne River approximately 5 miles upstream of the intake to the Middle Fork Mokelumne River Pump Station. At a maximum pool elevation of 2,907, Schaads Reservoir has a capacity of approximately 1,700 AF. Expansion of Schaads Reservoir by 250 AF to a capacity of 1,950 AF is included in one of the alternatives (Alternative 2) evaluated by ECORP in the Calaveras County Mokelumne River Long-Term Water Needs Study. Expansion of Schaads Reservoir by 250 AF, restoration of Wilson Dam and Reservoir to 50 AF capacity, increasing the capacity of the West Point Regulating Reservoir to 150 AF, increasing the capacity of the MFMR Pump Station construction of an 8,000-AF capacity Forest Creek-

Middle Fork Reservoir are all included in Alternative 2 of the Long-Term Needs Study to meet the projected year 2100 Calaveras County demands.

Figure 28 presents existing limits of Schaads Reservoir and limits of the Reservoir should it be expanded to meet the recommendations of the Long-Term Water Needs Study. While most of the Reservoir is located within property owned by the Calaveras Public Utility District (APN 010-021-028), upstream reservoir limits do extend into U.S. Forest Service land and onto land owned by Sierra Pacific Industries.

Schaads Reservoir is regulated by the California Division of Safety of Dams (DSOD) and is licensed by Federal Energy Regulating Commission (FERC). Expansion of Schaads Reservoir will require updated agreements / easements with the U.S. Forest Service and Sierra Pacific Industries, approval by DSOD and updated licensing by FERC.

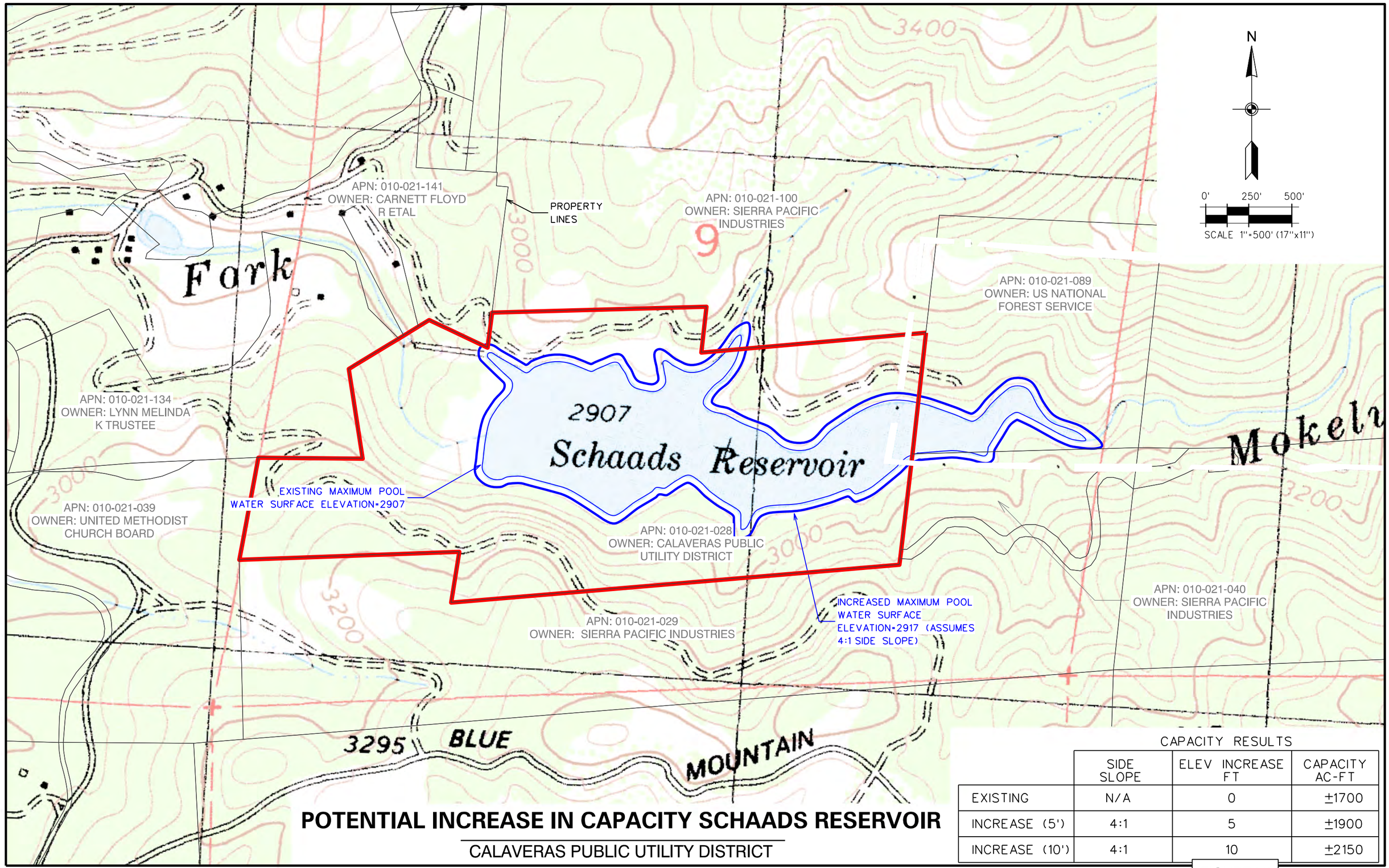
To increase the capacity of Schaads Reservoir by 250 AF will require increasing the maximum pool water surface elevation (and the heights of the dam spillway and reservoir embankment) by approximately 6 feet. The cost to increase the capacity of Schaads, not including updated easements, licensing agreements and permits, is estimated at $3.7 Million.

3.7 Forest Creek-Middle Fork Mokelumne River Reservoir

Evaluation of the region-wide Mokelumne River Long-Term Water Needs included consideration of construction of a new reservoir on the Middle Fork Mokelumne River downstream of Schaads Reservoir and downstream of the confluence with Forest Creek. This project was not ultimately evaluated as an alternative in this study. Alternative 3 of the Long-Term Needs Study suggested the construction of a 12,000-AF capacity Forest Creek-Middle Fork Reservoir without the restored / rehabilitated Wilson Dam, enlarged West Point Regulating Reservoir or expanded Schaads Reservoir. The main beneficiary as outlined in the Long-Term Water Needs Study would be CPUD to meet their forecasted demands in their service area.

The Forest Creek-Middle Fork Reservoir was first considered by CCWD in the late 1950s and has been reconfigured and reevaluated a number of times by both CCWD and CPUD. Forest Creek-Middle Fork Reservoir capacities ranging from 4300 to 18,000 AF in capacity have been considered. A reservoir with a capacity of approximately 12,000 AF and a maximum water surface elevation of 2,787 is shown in **Figure 29**. As shown, the center of the Forest Creek-Middle Fork embankment would be located approximately 350 feet downstream of the confluence of Forest Creek and the Middle Fork Mokelumne River. The reservoir pool would extend ±1.0 mile upstream along Forest Creek and approximately 1.5 miles upstream along the Middle Fork to a point approximately 600 feet downstream of Schaads Reservoir. At maximum pool, the Forest Creek-Middle Fork Reservoir would encompass approximately 180 acres. The construction cost of the 12,000-AF capacity reservoir is estimated at $19.3 million. This estimated cost does not include environmental permitting or agency approvals.

While the expansion of Schaads Reservoir and the construction of a new Forest Creek-Middle Fork Reservoir are long-term improvements that will not be considered in the shorter-term West Point Water System Master Plan, these future water storage improvements do provide solutions for meeting the long-term water needs of Calaveras County.



POTENTIAL INCREASE IN CAPACITY SCHAADS RESERVOIR

CALAVERAS PUBLIC UTILITY DISTRICT

CAPACITY RESULTS

	SIDE SLOPE	ELEV INCREASE FT	CAPACITY AC-FT
EXISTING	N/A	0	±1700
INCREASE (5')	4:1	5	±1900
INCREASE (10')	4:1	10	±2150

FIGURE 28

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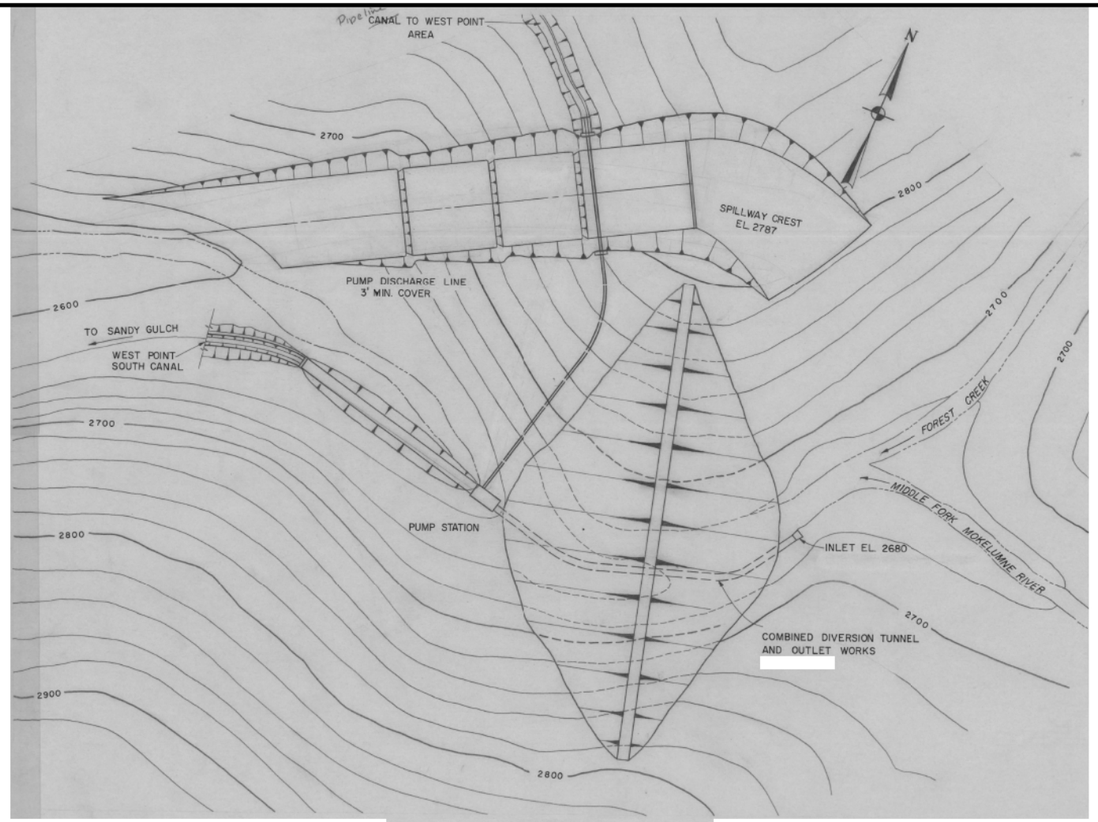
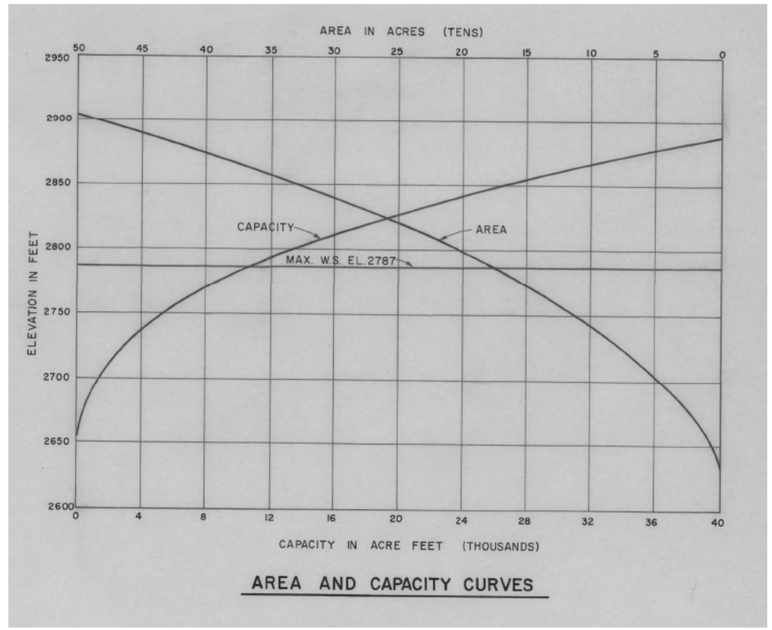


PLAN

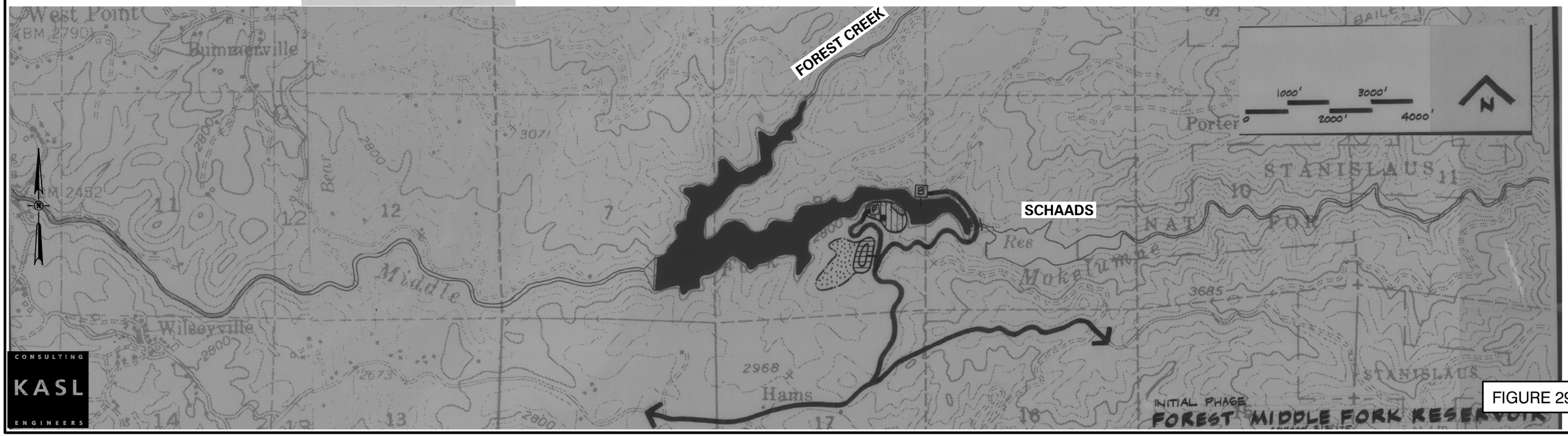
SCALE: 100 50 0 100 200 FEET

CONTOUR INTERVAL 20 FEET



AREA AND CAPACITY CURVES

CONCEPT PLAN ±12,000 AC-FOOT CAPACITY FOREST CREEK MIDDLE FORK RESERVOIR



CONSULTING KASL ENGINEERS

FIGURE 29

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4.0 EVALUATION OF WATER MASTER PLAN IMPROVEMENTS AND PRIORITIES

The purpose of this Supplemental Water System Master Plan is to recommend facilities that will improve water supply quantity and quality for the West Point Service Area. Previously prepared Master Plans and Feasibility Studies did not fully assess the limitations of the Bear Creek supply especially during seasonal dry periods and prolonged droughts. This document provides guidance to improve water supply reliability in the West Point Area.

The Calaveras County Water District has, in place, an agreement with the Calaveras Public Utility District for purchase of up to 200 AF annually of Middle Fork Mokelumne River water. This source supplements CCWD's West Point Service Area supplies provided by Bear Creek. The District's Agreement with CPUD has been in effect for a number of years and is subject to review and renewal every five years. The current contract will be up for renewal in 2021. The water supply developed by Schaads Reservoir is hydraulically disconnected from CPUD's service area. The historic Middle Fork Ditch is in disrepair and no longer used to transport water to CPUD's service areas. If constructed, the Proposed Middle Fork Ditch Pipeline could carry water supply developed by Schaads Reservoir to Jeff Davis Reservoir for treatment and delivery to CPUD customers. Until the pipeline is constructed, Schaads Reservoir can continue to reliably deliver at least 200 AF annually to the West Point Service Area.

In the Mokelumne River Long-Term Water Needs Study, ECORP projected the year 2100 annual surface water demand for the West Point Service Area at 327 AF/year. This demand is equivalent to 106.5 million gallons annually, or, on average, a daily annual average demand of approximately 292,000 gallons per day (.292 MGD). Assuming that maximum day demands could be as much as 2.5 times average annual daily demands, a projected year 2100 maximum day demand of approximately 730,000 gallons per day (.730 MGD) results. Current maximum day demands are estimated at 470,000 gpd (.470 MGD). CCWD's current agreement to purchase up to 200 AF annually of Middle Fork Mokelumne River water from CPUD would be equivalent to satisfying up to 90 days of projected year 2100 maximum day demands. Better utilization of the high quality raw water supply available from the Middle Fork Mokelumne River should be the highest priority of the West Point Water System improvements. Currently, the Middle Fork Mokelumne River intake, pump station and water supply pipeline improvements do not have the capacity to deliver existing or projected maximum day West Point Service Area demands.

Long-Term planning for the West Point water supply reliability includes consideration of the contract supply CCWD currently receives from CPUD. Results of the operations studies done in support of the Mokelumne River Long-Term Water Needs Study indicate that CPUD will need the Schaads Reservoir supplies to meet the buildout demands in their service areas. The buildout condition may require CCWD to develop a new water supply to replace the 200 AF currently supplied by CPUD from Schaads Reservoir. The water supply need could be partially mitigated by expanding Schaads reservoir to increase capacity by approximately 250 AF.

Each water supply improvement was evaluated to determine water supply benefits using the Mokelumne River operations model developed for the Mokelumne River Long Term Water Needs Study. Once the water supply benefits were determined, cost of each project was used to determine cost per acre foot of water produced. Some of the improvements were designed to maximize the use of the highest quality

Mokelumne River supply. Others were designed to improve the quality of the existing supply at Regulating Reservoir. The projects were then ranked by cost of supply, quality of supply, timing and need. The following sections discuss the priority ranking.

4.1 Cost of Supply

The intent of the improvements proposed for the West Point Water Supply system is to improve water supply, water quality or reliability. A series of operations studies were conducted using a simulation model to test the water supply benefits of each of the proposed improvements to identify the increase in yield. The simulation model mathematically runs historic unimpaired flow, sequentially from 1934 to 2016, through existing and proposed facilities on Bear Creek and the Middle Fork Mokelumne River. The historic flow provides a range of hydrologic conditions used to evaluate the performance of each facility. Yield is defined as the maximum quantity of water which can be delivered during a critically dry period. For the Mokelumne River System, the critically dry period is based upon the hydrology that occurred in 1976-1977. The 1976-1977 period is used throughout the Sierra Nevada by most operators for planning purposes because it is the driest period on record. In general, if the existing facilities with the addition of the proposed facilities can meet the anticipated demands during a period as dry as 1976-1977, there is a reasonable expectation that the water supply developed by these facilities will be sufficient to meet future anticipated demands under drought conditions. For this analysis, the proposed projects are layered on the Baseline study to determine water supply benefits. The Baseline study represents the existing facilities and existing operating criteria. Each improvement scenario is briefly described below.

1. Scenario 1: Evaluates benefits of the updated Middle Fork Pump Station. For the purposes of this evaluation, the Updated Middle Fork Pump Station includes the improved intake, pump station and pipeline to the West Point Water Treatment Plant.
2. Scenario 2: Evaluates benefits of the enlarged Regulating Reservoir.
3. Scenario 2A: Evaluates cumulative benefits of both the updated Middle Fork Pump Station (Scenario 1) and the enlarged Regulating Reservoir.
4. Scenario 3: Evaluates benefits of the enlarged Wilson Dam.
5. Scenario 3A: Evaluates cumulative benefits of the updated Middle Fork Pump Station (Scenario 1), the enlarged Regulating Reservoir (Scenario 2), and enlarged Wilson Dam.
6. Scenario 4: Evaluates Enlarged Schaads Reservoir assuming CPUD will need all of the existing Schaads Reservoir Supply to meet its own buildout demands.
7. Scenario 4A: Evaluates cumulative benefits of updated Middle Fork Pump Station (Scenario 1), the enlarged Regulating Reservoir (Scenario 2), enlarged Wilson Dam (Scenario3) and enlarged Schaads Reservoir.

Table 9, below, illustrates the projects included in each scenario.

Table 9. Scenario Descriptions for the Mokelumne River System

Facilities	Scenarios							
	Baseline	1	2	2A	3	3A	4	4A
Existing Wilson Dam	✓	✓	✓	✓			✓	
Existing Regulating Reservoir	✓	✓			✓		✓	
Existing Middle Fork Pumping Station	✓		✓		✓		✓	
Existing Schaads Reservoir	✓	✓	✓	✓	✓	✓		
Enlarged Wilson Dam					✓	✓		✓
Enlarged Regulating Reservoir			✓	✓		✓		✓
Updated Middle Fork Pumping Station		✓		✓		✓		✓
Enlarged Schaads Reservoir							✓	✓

Comparing the results of each scenario gives an indication of the water supply benefit of each project. Table 10, below, illustrates the water supply benefit by scenario. For example, comparing the Scenario 1 system yield of 316 AF to the Baseline yield of 305 AF results in an increase in system yield of 11 AF. This indicates that the proposed improvements to the Middle Fork Pump Station (Intakes, Pumps and Pipeline) would provide an 11 AF benefit to the system in a critically dry year like 1977.

Table 10. Water Supply Summary (With CPUD 200 AF Contract Supply)

Facilities	Scenarios					
	Baseline	1	2	2A	3	3A
Yield, AF	305	316	310	>327	305	>327
Years of Shortage	25	1	2	None	14	None
Average Shortage in Shortage Years, AF	6	7	8	None	6	None

Scenarios 4 and 4A assume that CPUD would need the contracted 200 AF currently reserved for CCWD for their own use and that CCWD would need the additional 250 AF of Schaads storage capacity to meet buildout demands. To evaluate the benefit of the additional Schaads reservoir storage, the No Contract Baseline was developed. The No Contract Baseline assumes that the 200 AF contracted water supply from Schaads reservoir would be used for CPUD purposes and not available to CCWD. The results of the studies are shown in Table 11, below.

Table 11. Water Supply Summary (No CPUD 200 AF Contract Supply)

Facilities	Scenarios		
	No Contract Baseline	4	4A
Yield, AF	128	247	288
Years of Shortage	66	24	1
Average Shortage in Shortage Years, AF	54	17	36

Table 12, below provides a summary of the water supply benefits by facility, both individually and cumulatively.

Table 12. Water Supply Benefits

Facilities	Water Supply Benefit, AF	Cumulative Water Supply Benefit, AF
Updated Middle Fork Pumping Station	11	11
Enlarged Regulating Reservoir	5	16
Enlarged Wilson Dam	0	16
Enlarged Schaads Reservoir	119	160

The analysis indicates that in the 1976-1977 critically dry period hydrology, Wilson, Regulating, and Schaads Reservoirs do not fill. In January of 1977, Wilson stores about 5 AF of water and releases the supply over the next few weeks. The Regulating Reservoir fills to 49 AF in Scenario 1. With scenarios 1 and 2 combined, Regulating Reservoir fills to 63 AF in part because the Middle Fork Pump Station was able to take more water earlier in the year filling the additional capacity at an enlarged Regulating Reservoir. This operation doesn't significantly increase yield; however, it allows for operational flexibility in the seasonal pattern of diversion. In a 1977 (critically dry) water year hydrology, Schaads reservoir fills to 908 AF by the end of March. This is far short of the existing storage capacity and would not make use of any additional storage. By April 1, the South Fork Pumping Plant demands are higher than Schaads inflow, resulting in an early drawdown of the reservoir. The benefits of Schaads reservoir is from the unused CCWD carryover supply from the previous year (1976) operations. This additional volume can be used to meet shortages as a result of the dry conditions of the 1977 hydrology. Table **13**, below, illustrates the construction costs of each project, water supply benefit, and the resulting Cost/Benefit ratio.

Table 13. Cost/Benefit Analysis

Project Description	Cost Estimate			Water Supply Benefit	Cost/Benefit Ratio
	Construction	Environmental	Total	(Yield - AF)	$/AF
New MFMR Pump Station	$1,529,775	$20,000	$1,549,775	11	$378,895
New intake facilities at the MFMR pump station	$184,700	$80,000	$264,700		
Replacement of MFMR pipeline from the MFMR pump station to the West Point WTP	$2,268,375	$85,000	$2,353,375		
Increase capacity of Regulating Reservoir	$2,365,025	$160,000	$2,525,025	5	$527,195
Floating Screened Outlet at Regulating Reservoir	$146,300	0	$146,300	0	N/A
Modifications to the Bear Creek Diversion	$82,950	$28.000	$110,950	0	N/A
Increase Capacity and Stability of Wilson Dam 50 AF	$2,136,750	$143,000	$2,279,750	0	N/A
Increase Capacity and Stability of Wilson Dam 40 AF	$1.234,750	$143,000	$1,377,750	0	N/A
Schaads Reservoir Expansion	$3,700,000	$1,000,000	$4,700,000	119	$39,495
Redundant West Point WTP	$2.925,000	$60,000	$2,985,000	0	N/A
Bummerville Water Distribution Improvements	$1,811,000	$80,000	$1,891,000	0	N/A

The analysis performed to support the development of this water supply plan indicates Wilson Dam provides no significant improvement in water supply in the 1976-77 critical dry period and therefore is not needed to meet consumptive demands. Based on the current condition of the dam, the District should consider one of three options:

- Option 1: Rehabilitation - 50 AF Wilson Dam
- Option 2: Rehabilitation – 40 AF Wilson Dam
- Option 3: Decommission Dam and restore the meadow

These options are discussion further in **Section 4.7 Medium Term Water Master Plan Improvements**

4.2 Quality of Supply

4.2.1 Middle Fork Pump Station Improvements

Although West Point's water has always been safe to drink, there are occurrences when taste and odor problems arise, usually in the summer, when CCWD's Bear Creek water supply diminishes due to natural runoff patterns. At that time, water levels are lower in Regulating Reservoir and algae blooms in the impoundment create taste and odor problems. The contract supply from CPUD's Schaads Reservoir provides a fresh supply of water at a time when Bear Creek flows don't provide enough supply to serve the increased summer demands. Improvements to the Middle Fork Pumping Station will increase the capacity of the pump station allowing for additional supplies to be pumped up to the West Point Water Treatment Plant.

4.2.2 Regulating Reservoir Floating Intake

A floating screened intake would prevent sediment and debris from entering the headworks of the West Point WTP from the Regulating Reservoir and allow for operational flexibility to select source water in the water column for optimal treatability. With the floating inlet located near the surface outlet rather than near the bottom, the best water quality available in the Reservoir would be delivered to the West Point WTP.

4.2.3 Regulating Reservoir Expansion

The expansion of Regulating Reservoir from 50 AF to 150 AF will mitigate some of the taste and odor and other aesthetic water quality issues. Shallow Reservoirs are more susceptible to a warming of the water column resulting in algal blooms. By adding an additional 100 AF of storage, deepening the reservoir, the magnitude of the summer algal blooms should be reduced.

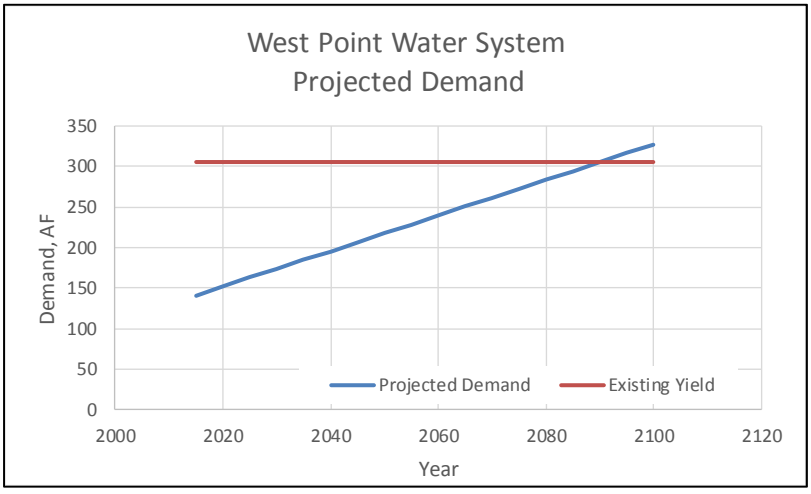
4.2.4 Schaads Reservoir Expansion

If future demands approach buildout, additional supplies from Schaads reservoir may be needed. This additional supply from Schaads would be high quality runoff from the Middle Fork Mokelumne River. Prior to diversion at the Middle Fork Pump Station, the water released from Schaads Reservoir will travel approximately 5.5 miles down the Middle Fork Mokelumne River undergoing natural aeration before being diverted at the Middle Fork Pump Station.

4.3 Need for Additional Supply

The scenarios performed for this study indicate that existing facilities and agreements will provide about 305 AF of water supply in the driest years. Demand projections for the West Point area indicate consumptive demand approaches project yield sometime around the year 2090, as shown in **Figure 30** below. CPUD future demands may change CCWD's water supply at buildout demand in the future. Until West Point demands exceed about 305 AF, CCWD has the water supply needed to deliver a full supply in every year. If CPUD demands increase to the point where the Middle Fork Ditch Pipeline is constructed, CCWD may need to consider construction of additional storage at Schaads Reservoir.

Figure 30. West Point Demand Projections



4.4 Regulatory Requirements

Although the measurement of the Bear Creek Diversion and the installation of the storage Gage at Regulating Reservoir do not provide improvement to water supply or quality, they are required by Senate Bill 88. These measurement devices will also support the annual water usage reporting required by the State Water Resources Control Board.

4.5 Project Priorities

Each of the projects have been evaluated for water supply improvements, water quality improvements, timing of need, and regulatory requirements. Table 14, below, illustrates the results of the evaluation and provides a ranking of the benefit and need of each project. A total score was calculated by adding the rankings. Project priorities were determined by ranking the scores from lowest to highest.

Table 14. Project Ranking

Project	Raw Cost Rank	Water Supply Cost/Benefit	Water Quality Benefit	Regulatory Requirement (If any)	Timing of Need	Total Score	Priority
New MFMR Pump Station	8	2	1	N/A	3	14	5
New intake facilities at the MFMR pump station							
Replacement of MFMR pipeline from the MFMR pump station to the West Point WTP							
Increase capacity of Regulating Reservoir	6	3	3	N/A	4	16	6
Floating Screened Outlet at Regulating Reservoir	2	N/A	2	N/A	2	6	3
Modifications to the Bear Creek Diversion (Gaging)	1	N/A	N/A	1	1	3	1
Increase Capacity and Stability of Wilson Dam 50 AF	5	4	5	N/A	6	20	9
Increase Capacity and Stability of Wilson Dam 40 AF	3	5	5	N/A	6	20	8
Schaads Reservoir Expansion	9	1	4	N/A	5	19	7
Redundant West Point WTP	7	N/A	N/A	N/A	1	8	4
Bummerville Water Distribution Improvements	4	N/A	N/A	N/A	1	5	2

4.6 Highest Priority Short-Term Master Plan Improvements

The highest priority, most immediately needed, West Point Water System Master Plan improvements include:

- Construction of new Middle Fork Mokelumne River (MFMR) Intake System
- Replacement of the existing MFMR Pump Station
- Replacement of the existing MFMR Pump Station to West Point Water Treatment Plant Water Supply Pipeline
- Construction of New West Point Regulating Reservoir Floating, Screened Outlet

- West Point Regulating Reservoir Staff Gauge and Bear Creek Discharge Meter
- Redundant West Point Water Treatment Plant Capacity
- Bummerville Water Distribution Improvements

It is recommended that these improvements be planned, designed, funded and constructed during the next 10 years (2019-2029). Administrative and permitting tasks, engineering design and capital improvement program elements proposed for each of the above listed, short-term, highest priority master plan improvements are discussed herein.

4.6.1 Middle Fork Mokelumne River (MFMR) Intake and Pump Station and Supply Pipeline Improvements

Construction of the MFMR intake, pump station and supply pipeline improvements could be phased but engineering planning, design and environmental documents should be prepared together for these Master Plan elements and initiated as soon as possible. The surface collection facilities which feed the existing pump station were damaged and partially removed during the winter of 2016-2017. These facilities were reinstalled with FEMA funds in July 2018. Alternative long-term surface collector and "in channel" collection facilities, as previously presented in this Master Plan, should be reviewed with CCWD Engineering Staff and then modified or expanded as appropriate.

The Preliminary Plans prepared for the new Middle Fork Pump Station and shown in Section 3.0 of this Master Plan were approved, in concept, by CCWD Engineering Department staff. There is sufficient information included in these preliminary plans to evaluate the potential environmental impacts of the MFMR Pump Station improvements. Similarly, alternative water supply alignments from the MFMR Pump Station to the West Point WTP were evaluated as part of this Master Plan Report. The alignment selected is the same as existing and no additional easements will be required to construct the new pipeline. The alignment selected follows existing road rights and way and CCWD easements. There is sufficient information provided in this Master Plan to evaluate the potential environmental impacts of the water supply pipeline improvements.

Construction of redundant water treatment plant improvements at West Point can be completed with little or no disturbance to surrounding CCWD property and could be permitted with the filing of a Notice of Exemption. It is intended that the redundant WTP facilities strictly serve as a backup and not provide additional capacity or expand the West Point treated water service area.

The Bummerville water distribution improvements discussed in this Supplemental Master Plan were previously described in the West Point / Wilseyville / Bummerville System Improvements Final Feasibility Report and in the 2005 Master Plan. Environmental documents were previously certified for these improvements and may only require updating to permit remaining distribution improvements to be constructed.

The suggested sequence of highest priority, short-term, MFMR Master Plan improvements follows. This suggested schedule is intended to provide ongoing operation of the existing MFMR supply during the most critical (hottest) summer months when supplies from Bear Creek are expected to be at their lowest levels.

Master Plan Year 1-2

- Obtain CCWD approval of West Point Supplemental Water System Master Plan.
- Complete preliminary design of permanent MFMR pump station intake facilities and obtain concept approval by CCWD.
- CCWD to request proposals from qualified environmental consultants to prepare an environmental document for MFMR Intake, Pump Station and Water Supply Pipeline to West Point WTP.
- CCWD selects environmental consultant; environmental field investigations are initiated.
- Preparation of MFMR Intake, Pump Station and Water Supply Pipeline Environmental Document. It is anticipated that an Initial Study/ Mitigated Negative Declaration would include sufficient impact mitigation and environmental safeguards to satisfy environmental regulations.
- CCWD receives proposals for engineering design of MFMR Pump Station to West Point WTP supply pipeline improvements.
- CCWD receives proposal for engineering design of redundant West Point WTP improvements.

Year 3-4

- Design of MFMR supply pipeline improvements is completed. Contract Documents are approved by CCWD and ready to bid.
- Design of redundant West Point WTP improvements is completed.
- CCWD applies to California Department of Fish and Wildlife for new MFMR intake facilities.
- MFMR Supply Pipeline Project Bid Period and Approval to Award to lowest responsive, responsible bidder.
- Redundant West point WTP Improvements are Bid and Approval to Award to lowest responsible bidder.

Year 5-6

- Notice to Proceed issued to Selected MFMR Contractor.
- Notice to Proceed issued to redundant West Point WTP Contractor.
- Pipeline and WTP Contractors submits shop drawings, receives approvals, orders materials.
- CCWD obtains permit to construct new, permanent, MFMR intake facilities.

- Pipeline improvements are constructed, existing pump station is connected to new pipeline during interim until new pump station improvements are designed and constructed.
- Redundant West Point WTP improvements are constructed.

- CCWD receives proposals for engineering design of MFMR intake and pump station improvements.
- CCWD receive proposals for engineering design of Bummerville Water Distribution System Improvements.

- Design of pump station intake and pump station improvements is completed. Contract Documents are approved by CCWD and ready to bid.

- MFMR intake and pump station construction bids received and Approval to Award to lowest responsive, responsible bidder.

Year 7-8

- Notice to Proceed issued to selected MFMR intake and pump station Contractor.
- Design of remaining Bummerville Water System Distribution improvements is completed.

- Pump Station Contractor submits shop drawings, receives shop drawing approvals and orders pump station equipment.

Year 9-10

- Pump Station intake and Pump Station improvements are constructed. Contractor is required to provide temporary pumping equipment to deliver MFMR flows to the West Point WTP while the MFMR pump station is under construction.
- Remaining Bummerville Water Distribution Improvements are completed.

With the above sequence, the new MFMR Pump Station Intake, Pump Station and Water Supply Pipeline facilities, the redundant West Point WTP and the remaining Bummerville water distribution system improvements are complete and on line by 2029. During the initial 10-year Master Plan period, MFMR supplies would continue to be supplied to the West Point WTP, as needed during low flow Bear Creek periods, using first, temporary, then, interim and then, completed, MFMR intake, pump station and pipeline improvements.

4.6.2 West Point Regulating Reservoir Outlet Pipe and Staff Gauge; Bear River Flow Meter

Coincident with improving Middle Fork Mokelumne River water supplies, improvements at the West Point Regulating Reservoir should be conducted in the short-term as a high priority to improve the quality of water delivered from the West Point Regulating Reservoir to the West Point WTP. Modification to the Regulating Reservoir outlet with placement of a floating screen would benefit the operations of the West Point WTP delivering the best water quality available in the Regulating Reservoir. The floating, screened,

outlet would collect water in the reservoir with the highest available dissolved oxygen and the lowest levels of total suspended solids. While the West Point WTP is capable of treating raw water with a wide range of constituents, optimum plant performance will be achieved when the WTP is supplied the best raw water available. Outlet screen backflushing would be available from the connection to the Middle Fork Mokelumne River pumped supply.

Recommended West Point Water Master Plan improvements include expansion of the Regulating Reservoir. The Regulating Reservoir expansion is suggested as an intermediate term or "mid-level priority" improvement. While not the highest priority, planning and preliminary design of the Regulating Reservoir expansion must be conducted in the short-term to properly design and implement the floating, screened, outlet pipe modifications.

Other, relatively low cost but high priority master plan improvements include placement of a reservoir staff gauge to monitor the water surface levels and available volume in the Regulating Reservoir. A water surface elevation to volume curve would be developed to provide the WTP operators with a quick checkpoint of reservoir operating conditions. It is further recommended that a pressure sensor be placed on the Regulating Reservoir outlet pipe. Static pressures available in the outlet pipe could be converted to reservoir levels based on the relative difference in elevation between the outlet pipe and the Regulating Reservoir water surface. The outlet pipe pressures / Regulating Reservoir water surface elevation could then be transmitted, via radio signal, to the West Point WTP.

Monitoring of Bear Creek influent supplies to the Regulating Reservoir is proposed using a critical flow device. Raw water entering the West Point WTP is metered. Middle Fork Mokelumne River water pumped to the West Point WTP is metered. While, in large part, the net difference between the flow entering the WTP and the flow leaving the Middle Fork Mokelumne River pump station is water delivered from Bear Creek supplies, this approach does not take into account supplies that back flow into the Regulating Reservoir from the MFMR supply pipeline and do not account for "sidewater" that drains into the Regulating Reservoir. Per Senate Bill 88, the District is required to provide to the State Water Resources Control Board an accurate, annual accounting of Bear Creek water diverted to the Bear Creek pipeline and discharged to the West Point Regulating Reservoir. Replacement of flow monitoring and flow transmitting equipment at the existing Bear River diversion structure is proposed.

The sequence for completing the planning, environmental, design and construction of the highest priority Regulating Reservoir improvements is outlined herein. Preliminary design level plans for expansion of the Regulating Reservoir to 150 AF should be prepared sufficient to obtain concurrence from CCWD regarding the maximum water surface elevation, reservoir footprint, reservoir embankment design and appurtenances needed to increase capacity. The Regulating Reservoir operates under a DSOD permit. Preliminary expansion plans should be reviewed with DSOD before final plans are prepared. An environmental document will be required for the Regulating Reservoir expansion and new Regulating Reservoir outlet improvements. Modifications to the existing reservoir outlet is within the area of DSOD jurisdiction and are subject to review and approval by DSOD.

The suggested schedule to plan, permit, design and construct, short-term, highest priority Regulating Reservoir improvements follows:

Year 1-2

- Obtain approval of West Point Water Master Plan.
- Prepare preliminary design of West Point Regulating Reservoir expansion plans.
- CCWD requests proposals from qualified environmental consultants to prepare environmental document for West Point Regulating Reservoir Expansion, Regulating Reservoir Outlet and Gauge Facilities and Bear Creek Flow Meter.
- CCWD selects environmental consultant; environmental field investigations are initiated.
- Preparation of Regulating Reservoir Expansion, Outlet Structure, Gauge Facilities, Bear Creek Flow Meter environmental document.
  It is anticipated that an Initial Study / Mitigated Negative Declaration would provide sufficient impact mitigation and environmental safeguards to satisfy environmental regulations.

Year 3-4

- CCWD receives proposals for engineering design of outlet, gauge and flow meter improvements.
- Outlet, gauge and flow meter improvement plans designed and approved by CCWD.
- Outlet modifications permitted by DSOD.
- Outlet, gauge and flow meter Project Bid period. Approval to Award to lowest, responsive, responsible bidder.
- Notice to Proceed: Construction begins mid-October during low Bear Creek flow periods and low Regulating Reservoir storage levels; Temporary Reservoir bypass improvements constructed as needed.
- Outlet, gauge, flow meter improvements are complete.

The above sequence does not include final design permitting or construction of the Regulating Reservoir expansion. It is proposed that these improvements be deferred to the recommended Medium Term Master Plan Improvements.

A summary schedule of the highest priority West Point Water Master Plan Improvements is presented in **Figure 31.**

WEST POINT WATER MASTER PLAN
PROPOSED SCHEDULE OF HIGHEST PRIORITY MASTER PLAN IMPROVEMENTS
(2019-2029)

MASTER PLAN ELEMENTS	YEAR 1-2	YEAR 3-4	YEAR 5-6	YEAR 7-10
MFMR INTAKE FACILITIES				
PLANNING/PERMITTING				
ENVIRONMENTAL				
DESIGN				
CONSTRUCTION				
MFMR PUMP STATION				
PLANNING				
ENVIRONMENTAL				
DESIGN				
CONSTRUCTION				
MFMR SUPPLY PIPELINE				
PLANNING				
ENVIRONMENTAL				
DESIGN				
CONSTRUCTION				
WEST POINT REGULATING RESERVOIR				
PLANNING				
ENVIRONMENTAL				
DESIGN				
CONSTRUCTION (1)				
REGULATING RESERVOIR OUTLET SCREEN & GAUGE				
PLANNING/PERMITTING				
ENVIRONMENTAL				
DESIGN				
CONSTRUCTION				
REDUNDANT WEST POINT WTP				
PLANNING/PERMITTING				
ENVIRONMENTAL				
DESIGN				
CONSTRUCTION				
BUMMERVILLE WATER DISTRIBUTION IMPROVEMENTS				
PLANNING/PERMITTING (2)				
ENVIRONMENTAL (2)				
DESIGN				
CONSTRUCTION				

(1) CONSTRUCTION OF REGULATING RESERVOIR PLANNED FOR MEDIUM TERM,(10–20 YEAR PERIOD 2029–2039)

(2) COMPLETED WITH 2004/2005 REPORTS AND MASTER PLAN

FIGUR E3I

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DATE: 10/24/2018

4.7 Medium Term Water Master Plan Improvements

The focus of the proposed "medium term" West Point Water Master Plan improvements is expansion of storage for the Bear Creek supply. These facilities are described in Section 2.0 of this Master Plan and include increasing the capacity of the West Point Regulating Reservoir to 150 AF and decommissioning of Wilson Dam. As mentioned in **Section 4.1 Cost of Supply**, study results developed as part of this Supplemental West Point Water System Master Plan indicate that different configurations of Wilson Dam provide no additional water supply in dry years. Three options for Wilson Dam are provided later in this section for District consideration. Medium term improvements are those warranted for construction 10 to 20 years hence or for the period ranging from year 2029 to 2039. Typically, these improvements are costlier and will require more extensive environmental and permitting than the short-term highest priority improvements previously itemized.

In the Calaveras County Mokelumne River Long-Term Water Needs Study, ECORP projected that, during the next 20-year period, annual runoff volumes in the Project area should be expected to decrease with a shift in runoff patterns. Peak runoff is more likely to occur in February or March rather than in March or April. To adequately capture and store this reduced runoff for beneficial use within the West Point Service Area will require additional storage.

The expansion of the Regulating Reservoir will require an amended permit (license) from Division of Safety of Dams. Decommissioning Wilson Dam and meadow restoration will require cooperation with Sierra Pacific Industries. Updated or new permits from the Division of Safety of Dams, California Department of Fish and Wildlife, Regional Water Quality Control Board and U.S. Army Corp of Engineers will be required.

The estimated cost to expand the West Point Regulating Reservoir (in current dollars) is $2,365,025. This cost includes estimated Project construction, planning, design, permitting and environmental costs.

The analysis performed to support the development of this water supply plan indicates Wilson Dam provides no significant improvement in water supply in the 1976-77 critical dry period hydrology and therefore is not needed to meet consumptive demands. Based on the current condition of the dam, the District should consider the following options discussed below.

Option 1: Rehabilitation - 50 AF Wilson Dam

Historical information about Wilson Dam, indicated it had a capacity of 45–50 AF. As discussed in Section 4.1. *Cost of Supply*, Wilson Dam provides no significant increase in water supply. Rehabilitating the dam may provide recreational opportunities in some years. Preliminary design work completed by KASL Engineers indicates that restoring the dam to a 50 AF capacity would inundate Winton Road. Rehabilitation would include raising the road to provide the necessary freeboard for safe passage.

The estimated cost to deconstruct, remove, and replace the existing Wilson Dam with a facility that will provide 50 AF of capacity is estimated at $2,136,750. This cost includes estimated construction, planning, design, agency permitting and estimated administrative and legal costs but does not include the estimated cost to amend the operating permit with Sierra Pacific Industries or, alternatively, to purchase the site. These costs are unknown at this time.

Option 2: Rehabilitation - 40 AF Wilson Dam

After discovering that restoring Wilson Dam and reservoir to 50 AF would inundate Winton Road, KASL Engineers revised the design. A second preliminary design was created, resulting in the largest dam that would not inundate Winton Road. The second design resulted in a reservoir that could impound 40 AF. The design analysis indicates that a 40 AF Wilson Dam and reservoir was most likely the original size.

Option 3: Decommissioning Dam / Meadow Restoration

For several years, CCWD staff have considered various options for conservation of water from Bear Creek at Lili Gap. In 2015, Pat McGreevy, with contributions from Bob Dean and Steve Wilensky, conducted a detailed study exploring various options. The study considers a comprehensive restoration of the Bear Creek area including Lili Riparian and Bald Mountain Riparian Corridors. The project includes removal or thinning of invading conifers to maintain meadow area and reduce evapotranspiration, elevating creek bed so water spills onto floodplain, and removal of surface and ladder fuels to minimize risk of catastrophic fire.

Lili Gap Project - Planning, Design and Permitting

Plumas Corporation was contacted by Pat McGreevy to request a cost estimate to provide survey data collection, analysis and restoration design for the meadow and riparian corridors along the Bald Mountain and Bear Creek drainages. Additional budget amounts include botany, wildlife and archaeology surveys to satisfy CEQA and NEPA. The project will require a CDFW 1600 permit, Army Corps of Engineers 404 review under NWP 27 authority, Regional Water Board 401 certification. If USFS participates, they will also require a NEPA review decision process. Planning, permitting, design and implementation is estimated to cost approximately $207,600.

Table 15, below, summarizes the costs and water supply benefits of the proposed Wilson Dam and Reservoir treatment options.

Table 15. Wilson Dam and Reservoir Treatment

Project Description	Cost Estimate			Water Supply Benefit (Yield - AF)	Priority
	Construction	Environmental	Total		
Wilson Dam Rehabilitation 50 AF	$2,136,750	$143,000	$2,279,750	0	3
Wilson Dam Rehabilitation 40 AF	$1.234,750	$143,000	$1,377,750	0	2
Bear Creek Restoration	$170,000	$37,600	$207,600	0	1

Based on the analysis of the proposed options, decommissioning Wilson Dam and performing the Bear Creek meadow restoration is the recommended approach. Since none of the Wilson Dam rehabilitation options provide a water supply benefit, the most cost-effective approach is to decommission the dam and reservoir and restore the area to a meadow and flood plain. The resulting restoration could potentially improve water quality through natural processes.

4.8 Long-Term Master Plan Improvements

Long-term surface water needs for the West Point Service Area are estimated in the Long-Term Water Needs Study at 327 AF. The District's current agreement with CPUD to purchase up to 200 AF annually from

the Middle Fork Mokelumne River (MFMR) combined with the District's right to divert up to 4 cfs and 150 AF or storage from Bear Creek would meet this requirement, except for the driest years. Future adjustments to the agreement to purchase MFMR water from CCWD may occur, especially if CCWD and CPUD can develop, jointly, MFMR storage improvements with the expansion of Schaads Reservoir or construction of the Forest Creek-Middle Fork Reservoir.

These relatively high cost improvements are long-term and will require extensive permitting but are reasonable solutions to meeting long-term water demands. The time line for long-term Master Plan improvements is estimated at 20 to 50 years (2038 to 2068) but long-term planning will be required to allow implementation.

The cost to expand Schaads Reservoir to provide an additional 250 AF of capacity is estimated (in current dollars) at $3.7 Million. This cost includes estimated Project construction, planning and design. Long-term permitting and environmental costs are estimated at $1,000,000. The Schaads expansion will affect U.S. Forest Service land. A combined CEQA / NEPA environmental document will be required.

Evaluation of the long-term demands projected from the West Point Water Service Area and the storage / supply provided by the Schaads Reservoir expansion was also completed (ECORP). As shown in Table 13 Project Priorities, the Schaads Reservoir Expansion would result in an additional yield of 119 AF.

The cost to construct a new Forest Creek-Middle Fork Reservoir that will provide 12,000 AF of storage capacity is estimated at (in current dollars) $19.3 Million. This cost includes estimated construction, planning and design costs. Future environmental and permitting costs that would address these improvements are unknown at this time. The Forest Creek-Middle Fork reservoir could provide additional supply to the West Point area; however, construction of this facility is only recommended as a regional supply alternative. In most years, the Schaads Reservoir and Regulator Reservoir expansions plus existing supplies would provide enough water supply to meet anticipated demands in most years. Our yield studies indicate that a shortage would only occur during the driest year on record. During the 1976-77 critical period hydrology a portion of the water supply at the expanded Schaads Reservoir would be used in 1976. A carryover storage supply at Schaads Reservoir along with the Bear Creek supply would provide about 288 AF. The 39 AF deficit is equivalent to about 12% of the total buildout demand. Development of a conservation policy during dry years could further ease the impacts of the shortage by spreading it over two years.