Solano Irrigation District
Water Management Plan
2008 Criteria

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Section 1: Description of the District

District Name: Solano Irrigation District

Contact Name: David Mansfield

Title: General Manager

Telephone: (707) 455-4009

E-mail: dmansfield@sidwater.org

Web Address: *www.sidwater.org*

A. History

The Solano Irrigation District (District) is located in Solano County, midway between San Francisco and Sacramento. The District was organized in 1948 under the provisions of the California Irrigation District Law for the purpose of contracting surface water supplies from the U.S. Bureau of Reclamation's Solano Project. Upon formation of the District, the District and Solano County made a substantial effort to obtain authorization and congressional funding for the construction of Monticello Dam and Lake Berryessa, the Putah Diversion Dam, the Putah South Canal (PSC) and the District's water distribution system. The Solano Project was authorized by the Secretary of the Interior on November 11, 1948 under the terms of the Reclamation Project Act of 1939. The Solano County Flood Control and Water Conservation District entered into a contract with the U.S. Bureau of Reclamation on behalf of the Solano Project Member Units. The Solano County Flood Control and Water Conservation District was dissolved subsequently and the Solano County Water Agency now represents the Solano Project Member Units. The Solano Project was completed approximately six years after construction began, and the first Solano Project water was delivered in the spring of 1959. The Solano Project consists of Lake Berryessa, Monticello Dam, Putah Diversion Dam on Putah Creek, Putah South Canal and the conveyance facilities that deliver surface water to the member units. By the spring of 1963 all lands within the District had water available. The average annual deliveries from the Solano Project are approximately 200,000 acre feet, of which the District receives approximately 141,000 acre feet.

The Solano County Flood Control and Water Conservation District entered into a Master Contract with the U.S. Bureau of Reclamation for water service and for the operation and maintenance of certain works of the Solano Project on March 7, 1955. The District entered into a contract for water service on June 28, 1955.

1. Date district formed: 1948 *Date of first Reclamation contract*: June 28, 1955
Original size (acres): 77,853 (USBR) *Current year (last complete calendar year)*: 2008

The verified acreage of the District on 1-1-73 and calculating back based on the annexations and detachments of the District, the original size in 1954 was 77,364 acres.

2. Current size, population, and irrigated acres

	2008
Size (acres)	71,522
Population served	1,485
Irrigated acres	37,145

3. Water supplies received in current year

Water Source	*AF*
Federal urban water (Tbl 1)	8,410
Federal agricultural water (Tbl 1)	132,590
State water (Tbl 1)	0
Other Wholesaler (define) (Tbl 1)	0
Local surface water (Tbl 1)	0
Upslope drain water (Tbl 1)	0
District ground water (Tbl 2)	6,143
Banked water (Tbl 1)	0
Transferred water (Tbl 6)	(2,168)
Recycled water (Tbl 3)	10,555
Other (define) (Tbl 1)	0
Total	155,530

4. Annual entitlement under each right and/or contract

	AF	*Source*	*Contract #*	*Availability period(s)*
BOR Urban AF/Y				
BOR Agriculture AF/Y	141,000	Lake Berryessa	14-06-200-4090	Year Round
Other AF/Y				
Other AF/Y				

5. Anticipated land-use changes

The construction of subdivisions has dramatically reduced due to the current economy. The next two to three years should show very little change in regards to land-use. Towards the end of this 5-year plan, the conversion of farm land into subdivisions may start to increase. The District is aware of a couple of proposed subdivision masterplans in the Dixon and Vacaville areas, but it is likely to take between ten and fifteen years for those developments to reach build out. The District has an agreement with the city of Vacaville to serve pressurized non-potable water for landscaping, parks and schools in the areas of its agricultural pipelines for the farmland that will be developed into subdivisions. As of this report, these areas are being served potable landscape water by the city of Vacaville through the District's pipelines and the developer is being billed directly from the city. Once the developer constructs the pumping plant, the District will continue to serve these areas with raw project water.

6. Cropping patterns (Agricultural only)

List of current crops (crops with 5% or less of total acreage) can be combined in the 'Other' category.

Original Plan (1997)		*Previous Plan (2003)*		*Current Plan*	
Crop Name	*Acres*	*Crop Name*	*Acres*	*Crop Name*	*Acres*
Corn	3,563	Alfalfa	7,600	Alfalfa	7,978
Wheat	7,608	Field Corn	7,600	Pasture	3,213
Alfalfa	8,227	Tomatoes	4,300	Sudan Grass	3,147
Pasture	2,722	Grapes	2,600	Field Corn	2,726
Beans	2,349	Beans	2,300	Tomatoes	2,529
Sugar Beats	5,938	Pasture	2,200	Sunflowers	2,494
Tomatoes	5,155			Grapes	2,236
				Walnuts	2,200
Other (<5%)	11,340	*Other (<5%)*	14,900	*Other (<5%)*	10,622
Total	46,902	*Total*	41,500	*Total*	37,145

(See Planner, Chapter 2, Appendix A for list of crop names)

7. Major irrigation methods (by acreage) (Agricultural only)

Original Plan (1997)		*Previous Plan (2003)*		*Current Plan*	
Irrigation Method	*Acres*	*Irrigation Method*	*Acres*	*Irrigation Method*	*Acres*
Furrow	37,300	Furrow	21,000	Level Basin	12,167
Sprinklers	9,000	Border Strip or Basin	12,000	Furrow	14,563
Center Pivot	600	Micro Spray or Drip	5,000	Sprinkler	4,428
		Permanent Sprinklers	2,500	Low Volume	2,411
		Hand Move Sprinklers	1,000	Multiple	3,576
Other	0	*Other*	0	*Other*	0
Total	46,900	*Total*	41,500	*Total*	37,145

(See Planner, Chapter 2, Appendix A for list of irrigation system types)

B. Location and Facilities

See Attachment A for points of delivery, turnouts (internal flow), and outflow (spill) points, measurement locations, conveyance system, storage facilities, operational loss recovery system, wells, and water quality monitoring locations

(Attached CD with operation maps printed as PDFs)

1. Incoming flow locations and measurement methods

Location Name	*Physical Location*	*Type of Measurement Device*	*Accuracy*
Hemmingway Pipe	W½Sec.34,T8N,R1W (PSC Sta. 117+64)	Propeller Meter	±5%
Karnopp Pipeline	SW¼Sec.34,T8N,R1W (PSC Sta. 140+34)	Propeller Meter	±5%
Vaughn Canal	NE¼Sec.3,T7N,R1W (PSC Sta. 183.63)	Doppler Meter	±1%
Tonai Pipeline	W½Sec.11,T7N,R1W (PSC Sta. 249+35)	Propeller Meter	±5%
Weyand Canal	E½Sec.15, T7N,R1W (PSC Sta. 308+90)	Doppler Meter	±1%
Kilkenny Canal	NW¼Sec.23,T7N,R1W (PSC Sta. 347+00)	Propeller Meter	±5%
#3 Canal	N½Sec.34,T7N,R1W (PSC Sta. 450+50)	Propeller Meter	±5%
#4 Canal	N½Sec.3,T6N,R1W (PSC Sta. 511+40)	Propeller Meter	±5%
Lateral 6	W½Sec.10,T6N,R1W (PSC Sta. 592+90)	Propeller Meter	±5%
Eldredge Lateral	W½Sec.15,T6N,R1W (PSC Sta. 634+50)	Magnetic Meter	±1%
Allison-Ulatis PP	W½Sec.22,T6N,R1W (PSC Sta. 688+00)	Propeller Meter	±5%
Byrnes Pipeline	E½Sec.22,T6N,R1W (PSC Sta. 696+00)	2: Propeller Meters	±5%
Cemetery Pipeline	SE¼Sec.22,T6N,R1W (PSC Sta. 705+24)	Propeller Meter	±5%
Frost Pipeline	N½Sec.27,T6N,R1W (PSC Sta. 745+42)	Propeller Meter	±5%
Notre Dame Pipeline	N½Sec.27,T6N,R1W (PSC Sta. 745+42)	Propeller Meter	±5%
McCrory Pipeline	S½Sec.27,T6N,R1W (PSC Sta. 780+18)	Propeller Meter	±5%
Dally Canal	SW¼Sec.34,T6N,R1W (PSC Sta. 857+50)	Propeller Meter/Weir	±5%
Peabody Lateral	SW¼Sec.3,T5N,R1W (PSC Sta. 917+40)	Propeller Meter	±5%
Breen Lateral	N½Sec.9,T5N,R1W (PSC Sta. 933+10)	Propeller Meter	±5%
Cement Hill WTP	W½Sec.8,T5N,R1W (PSC Sta. 1058+47)	Propeller Meter	±5%
Paradise Valley PP	W½Sec.7,T5N,R1W (PSC Sta. 1109+00)	Propeller Meter	±5%
Dickson Lateral	S½Sec.12,T5N,R1W (PSC Sta. 1138+50)	Propeller Meter	±5%
Lateral 42	N½Sec.21,T5N,R1W (PSC Sta. 1315+80)	Propeller Meter	±5%
Chadbourne Lateral	S½Sec.16,T5N,R1W (PSC Sta. 1349+00)	Propeller Meter	±5%
Pierce Lateral	E½Sec.17,T5N,R1W (PSC Sta. 1392+50)	Propeller Meter	±5%
Lateral 45-R	N½Sec.17,T5N,R1W (PSC Sta. 1413+20)	Propeller Meter	±5%
Lateral 45	NW¼Sec.17,T5N,R1W (PSC Sta. 1421+30)	Propeller Meter	±5%
Lambert Lateral	W½Sec.17,T5N,R1W (PSC Sta. 1442+37)	Propeller Meter	±5%
Meddock Pipeline	S½Sec.18,T5N,R1W (PSC Sta. 1472+95)	Propeller Meter	±5%
Lateral 49	S½Sec.18,T5N,R1W (PSC Sta. 1484+08)	Propeller Meter	±5%
Lateral 49-R	S½Sec.18,T5N,R1W (PSC Sta. 1484+18)	Propeller Meter	±5%
Lateral 50	W½Sec.19,T5N,R2W (PSC Sta. 1515+50)	Propeller Meter	±5%
Lateral 50-R	W½Sec.19,T5N,R2W (PSC Sta. 1515+50)	Propeller Meter	±5%
Lateral 51	S½Sec.19,T5N,R2W (PSC Sta. 1558+00)	Propeller Meter	±5%
Lateral 51-1	N½Sec.30,T5N,R2W (PSC Sta. 1575+80)	Propeller Meter	±5%
Lateral 52	E½Sec.30,T5N,R2W (PSC Sta. 1592+03)	Propeller Meter	±5%
Young Lateral	N½Sec.31,T5N,R2W (PSC Sta. 1621+00)	Weir	±5%
Lateral 54-N	S½Sec.31,T5N,R2W (PSC Sta. 1667+59)	Propeller Meter	±5%
North Cordella	S½Sec.31,T5N,R2W (PSC Sta. 1673+90)	Propeller Meter	±5%
Green Valley Conduit	S½Sec.36,T5N,R2W (PSC Sta. 1732+40)	Propeller Meter	±5%
Lateral 56.5	NW¼Sec.1,T4N,R3W (PSC Sta. 1751+76)	Propeller Meter	±5%
Lateral 57-A	E½Sec.2,T4N,R3W (PSC Sta. 1782+00)	Propeller Meter	±5%

Datum: Mount Diablo Base and Meridian

2. Current year Agricultural Conveyance System

Miles Unlined - Canal	*Miles Lined - Canal*	*Miles Piped*	*Miles - Other*
95	6	77	0

3 Current year Urban Distribution System

Miles AC Pipe	*Miles Steel Pipe*	*Miles Cast Iron Pipe*	*Miles – Other**
0	0	0	104

*Other = PVC pipe

4. Storage facilities (tanks, reservoirs, regulating reservoirs)

Name	*Type*	*Capacity (AF)*	*Distribution or Spill*
Bascherini	Reservoir	21.100	Distribution
Geopfert	Reservoir	5.000	Distribution
Green Valley	Reservoir	2.800	Distribution
Devling	Reservoir	1.380	Distribution
Jones	Reservoir	1.000	Distribution
Quail Canyon	Tank	0.246	Distribution
Carrington	Tank	0.832	Distribution
Pleasant Hills No. 1	Tank	0.074	Distribution
Pleasant Hills No. 2	Tank	0.074	Distribution
Simpson	Tank	0.178	Distribution
Boles	Tank	0.258	Distribution
Yarrington	Tank	0.061	Distribution
Gibson Canyon (Res. #1)	Tank	0.009	Distribution
Stocking Ranch	Tank	0.032	Distribution
Elmira	Tank	0.184	Distribution
Blue Ridge	Tank	0.138	Distribution
Paradise Valley	Tank	1.841	Distribution
Green Valley Ranch Estates No. 1	Tank	0.003	Distribution
Green Valley Ranch Estates No. 2	Tank	0.003	Distribution

5. Outflow locations and measurement methods (Agricultural only)
Provide this information in Section 2 F.

6. Description of the agricultural spill recovery system

The District owns and operates fifty-five (55) recovery pumps throughout our service area. These pumps are located on the District's drainage ditches which collect the farmer's tailwater. The District re-delivers this water to other parcels for their irrigation requirements. The majority of water delivered by the recovery pumps is from tailwater. When the need arises or when the quantity of recovered water is not adequate, the District has the capability to purposely spill water from the irrigation canals or pipelines, collect the water in the drainage ditches and serve the farmers with recovery pumps.

In addition the District operates and maintains four recovery dams located in the Ulatis Flood Control Channels. The channels are operated and maintained by Solano County Water Agency (SCWA). The drainage water is checked, stored and pumped for the District's re-use. During the

2008 irrigation season, the District was able to recover 2,681 AF. The drainage flows not recovered by the District continue down the various channels where, by exchange, they are utilized by the Maine Prairie Water District (MPWD) for its irrigation purposes. Drainage flows into MPWD include tailwater from upslope farmers, operational spills, and actual deliveries ordered from MPWD.

7. Agricultural delivery system operation (check all that apply)

On-demand	*Scheduled*	*Rotation*	*Other (describe)*
X	**X**	**X**	

On-Demand: The District has a few agricultural pipelines that have large capacity with low volume users. These areas are typically operated as on-demand systems.

Scheduled: The majority of the agricultural deliveries are scheduled. Everyday of the irrigation season, the watertenders meet at 2 pm at a centralized location for their service area to receive the water orders. The water orders include the desired start time, quantity and duration of the delivery. The watertender keeps a running tally for each pipeline and canal for his beat and calls in his water order for the following day. When pipelines and canals are at capacity, the additional users are placed on a stand-by list and these customers receive their water as it becomes available.

Rotational: Although these are classified as urban customers by the USBR, the District's rural ranch parcels are served from our agricultural canals and pipelines. Typically these parcels are between 2.5 and 10 acres and are served on a rotational irrigation schedule. At the beginning of every irrigation season, the Operations Department sends out inquire cards to these potential customers. Based on the response, the District will assign each parcel one or two irrigation day(s) per week to be used for the entire season. On a case-by-case basis, these parcels can call into the District office and "schedule" additional irrigation times.

8. Restrictions on water source(s)

Source	*Restriction*	*Cause of Restriction*	*Effect on Operations*
Lower Vaughn Lateral 5 Pipeline	Physical	Capacity	Longer waiting list or time on the list
Vaughn Lateral B Pipeline	Physical	Capacity	Longer waiting list or time on the list
Weyand Lateral 4 Pipeline	Physical	Capacity	Longer waiting list or time on the list
Lower Kilkenny Canal	Physical	Capacity	Longer waiting list or time on the list

During the original planning of the Solano Project over sixty years ago, the District's distribution system was designed as a secondary water source and several of the pipelines were designed for lower water requiring crops. Since that time, the District has evolved into the primary source for irrigation water and the cropping patterns have changed. In addition, the District has taken over ownership of smaller distribution systems that were originally under-designed. The combination of these circumstances has created less than desirable service areas, particularly near the end of gravity pipeline systems and downstream of the highway and railroad tracks.

The District's R&B Program continues to address capacity issues and as pipelines are replaced, their flow calculations are based on not only the current demand, but for the foreseeable future demand. When development of agricultural land occurs, the District requires the developer to carry

the canal or pipeline capacity through the development and this increases the available irrigation water for downstream customers.

In addition to system capacity restraints, the splitting of parcels causes delays in delivery and capacity available. For example, when a forty acre parcel originally designed to receive 2 cfs of irrigation water is split into four ten acre parcels, the District requires each new parcel to have its own service, but each parcel must share the original 2 cfs. This causes the newly formed parcels to be served on a rotational schedule.

9. *Proposed changes or additions to facilities and operations for the next 5 years*

Fifteen years ago the District adopted its Rehabilitation and Betterment Program. The program was implemented due to the District's aging and often failing infrastructure. At the time of its implementation, projects were ranked primarily based on their down time during the irrigation season and followed by their length of waiting lists. Over the last fifteen years the District has concrete lined 4.52 miles of earthen canal and replaced almost 27 miles of pipelines ranging from 12" to 54". To specify the plan for the next five years is like "hitting a moving target". The plan is not maintenance driven anymore but is driven by an operational need, primarily geared towards capacity problems, operational efficiency and water conservation. In the next five years, we should see an increase in replacement deepwells, canal lining projects, water storage tank replacements, metering of flatrate customers, drainage monitoring and increased SCADA locations.

C. Topography and Soils

1. *Topography of the district and its impact on water operations and management*

The majority of District lands lie to the east of the Vaca Mountains in the triangular area between the cities of Winters, Vacaville, and Davis. This area consists of a broad gently sloping plain of old alluvial material with a southeasterly gradient of approximately six feet (6') per mile. Westerly of the Sacramento Valley area, the District lands extend into smaller recent alluvial valleys. These include Vaca Valley, Suisun Valley, and Green Valley. These valleys extend northerly into the foothills of the Vaca Mountains. The Putah South Canal is the major service facility for the District. Lands lying below the canal are provided water through gravity service. The District lands served in upper Vaca Valley, Suisun Valley, and Green Valley are at an elevation greater than the Putah South Canal and are served with pump lift systems.

2. *District soil association map (Agricultural only)*

See Attachment B, District Soils Map

(Attached CD with soil map printed as PDF)

3. *Agricultural limitations resulting from soil problems (Agricultural only)*

Soil Problem	*Estimated Acres*	*Effect on Water Operations and Management*
Salinity	0	
High-water table	0	
High or low infiltration rates	0	
Other (define*)	3,100	Unsuitable for irrigation

*Other = extreme limitations in soil, topography or drainage.

D. Climate

1. General climate of the district service area

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Avg Precip.	3.50	3.33	2.37	1.19	0.45	0.15	0.01	0.03	0.23	0.87	2.04	3.23	17.41
Avg Temp.	45.04	49.67	53.44	58.25	64.82	71.18	74.73	73.45	70.52	63.22	52.79	45.67	60.20
Max. Temp.	53.5	59.8	65.2	72.2	80.6	88.6	94.1	92.8	88.5	78.9	64.9	54.4	74.5
Min. Temp	36.6	39.6	41.7	44.3	49.1	53.8	55.3	54.1	52.5	47.5	40.7	36.9	46.0
ETo	1.49	2.34	4.54	7.13	10.19	12.17	12.77	11.28	9.08	6.35	2.89	1.45	81.68

Weather station ID Davis (042294) *Data period: Year* 1917 *to Year* 2005

Average wind velocity Not Available *Average annual frost-free days:* 338

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Avg Precip.	5.70	4.51	3.21	1.41	0.55	0.11	0.03	0.05	0.33	1.21	3.18	5.13	25.43
Avg Temp.	45.85	50.72	54.42	59.02	65.59	71.76	76.01	74.91	71.83	64.15	53.53	46.35	61.11
Max. Temp.	54.7	61.5	66.7	73.3	81.3	89.0	95.2	93.9	89.7	79.8	65.1	55.3	75.5
Min. Temp	36.9	39.9	42.3	44.7	49.8	54.5	56.9	55.9	53.9	48.6	41.6	37.4	46.9
ETo	na	na	na	na	na	na	na	na	na	na	na	na	na

Weather station ID Vacaville (049200) *Data period: Year* 1948 *to Year* 2005

Average wind velocity 6.0 mph (Nut Tree AP) *Average annual frost-free days:* 339

	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Avg Precip.	4.95	3.99	3.13	1.31	0.54	0.17	0.02	0.07	0.26	1.21	2.86	4.40	22.90
Avg Temp.	46.48	51.35	54.72	58.52	64.20	69.25	72.56	72.46	70.49	64.10	53.97	46.92	60.43
Max. Temp.	55.3	61.7	66.0	71.2	78.1	84.5	89.0	88.9	86.5	78.5	65.4	56.0	73.4
Min. Temp	37.4	41.0	43.4	45.9	50.3	54.0	55.9	56.1	54.4	49.7	42.6	37.8	47.4
ETo	1.45	2.25	4.00	5.72	8.07	9.82	10.7	8.93	6.88	4.33	2.10	1.55	65.79

Weather station ID Fairfield (042934) *Data period: Year* 1950 *to Year* 2005

Average wind velocity 12.7 mph (Travis AFB) *Average annual frost-free days:* 347

2. Impact of microclimates on water management within the service area

There are slightly different microclimates located throughout the District. Temperatures are typically cooler in Green Valley and Suisun Valley during the summer months but increased winds in these areas create a comparable evapotranspiration rate as those District lands located easterly of the Vaca Mountains in the Vacaville and Dixon areas. Precipitation also varies significantly from Green Valley to the Davis area, which would influence the annual effective precipitation estimates.

E. Natural and Cultural Resources

1. Natural resource areas within the service area

Name	*Estimated Acres*	*Description*
Creek and Channel Habitat	500	Creeks and channels that extend through the District boundaries

There are numerous creeks, arroyos and flood control channels, which have been constructed or naturally carry surface runoff and drainage from the Vaca Mountains, English Hills and District land southeasterly to the Sacramento River sloughs. These streams, arroyos and channels provide a natural resource within the District.

2. Description of district management of these resources in the past or present

The District does not provide any specific management of these resources.

3. Recreational and/or cultural resources areas within the service area

Name	*Estimated Acres*	*Description*
Cypress Lakes GC	203	Public golf course
Paradise Valley GC	166	Public golf course
Green Valley CC	142	Private golf course

F. Operating Rules and Regulations

1. Operating rules and regulations

See Attachment C, District Rules and Regulations (water related)

2. Water allocation policy (Agricultural only)

See Attachment C, Page 56 (Section III-1.a)

Summary – The District does not have an official water allocation policy, but currently is drafting a plan of action to implement a new policy. The District will review and consider adopting a formal water allocation policy as part of the updates to its Rules and Regulations. Work has already begun on the Rules and Regulations updates.

The District's Goals to update the Rules and Regulations:

- 2010 – Include section(s) in regulations to outline the water allocation policies
- 2011 – Board approval and adoption of the revised Rules and Regulations.

3. Official and actual lead times necessary for water orders and shut-off (Agricultural only)

See Attachment C, Pages 56 and 57 (Sections III-2, III-5 and III-7)

Summary - Water orders taken by in-person, phone or fax must be made by 2 pm on the day before a 6 am water delivery. If the required water is not available in the system, it takes approximately 12.5 hours for the water to travel from the Monticello Dam to the District's upper service area and an additional 21.75 hours to reach the lower service areas. Usually the District's systems are operated at capacity and it is a matter of "moving" the water from one area of a system to another.

4. *Policies regarding return flows (surface and subsurface drainage from farms) and outflow (Agricultural only)*

See Attachment C, Page 60 and 61 (Sections V-1 to V-7)

Summary - The District requires each landowner that receives irrigation water to manage and control their runoff. This is usually accomplished by the use of privately owned ditches that flow into District owned and maintained drainage ditches. Because tailwater contains a high amount of suspended silt and other contaminants, the District does not allow farmers to discharge their drainage water directly into our irrigation canals or pipelines.

5. *Policies on water transfers by the district and its customers*

See Attachment C, Page 54 (Section I-3)

Summary - Historically the water supplies of the District have been adequate to meet the needs of the landowners in the District. During the 1987-1992 California drought, the District reduced the water available to landowners. The District Board allowed the transfer of water within the District to improve the opportunities for efficient water management. The District has participated in selling water to other Solano Project agencies in the past in times of shortage. The District intends to continue this cooperative relationship with other agencies in the future.

The Solano Irrigation District Board of Directors, working with the Solano County Water Agency, has established a policy which allows water transfers or exchanges between Solano Project Member units on a year to year basis. The District does not however, allow the transfer of Solano Project water by landowners to Non-District parties.

G. Water Measurement, Pricing, and Billing

1. Agricultural Customers

a. *Number of farms* 1,808

b. *Number of delivery points (turnouts and connections)* 1,798

c. *Number of delivery points serving more than one farm* 10

d. *Number of measured delivery points (meters and measurement devices)* 1,798

e. *Percentage of delivered water that was measured at a delivery point* 100%

f. *Delivery point measurement device table (Agricultural only)*

Measurement Type	*Number*	*Accuracy (+/- %)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
Orifices	0				
Propeller meter	561	5	Monthly	None	When Requested
Weirs	0				
Flumes	0				
Venturi	0				
Metered gates	1,209	5	Monthly	None	When Requested
Acoustic doppler	28	1	Monthly	When Requested	When Requested
Total	1,798				

The ten delivery points serving more than one farm are multiple parcels being served by a single service but are farmed as a single unit. These instances result from landowner parcel splits and from farmers cultivating adjoining parcels owned by different landowners. When these parcels are sold or are farmed by multiple farmers, the District requires that each parcel have its own metered service.

The District does not calibrate propeller meters. Per the meter manufacturer, calibration requires that the meter be sent back to the manufacturer or other qualified location. Usually due to the meter's age, maintenance reports, irrigator's and watertender's input, the meter is replaced by the District's recurring meter replacement program under the Rehabilitation and Betterment Program. In some instances, the District is able to utilize our portable Panametric's meter to verify the calibration of the existing meter. Usually the inaccuracy of the meter is due to the required flow of the meter is not being met. When landowners change their irrigation method from surface to micro, the resulting flow is less and outside of the meter's range. The District has addressed this particular problem with the implementation of the Ag. Meter Replacement program, outlined in Section 3.B.3.

Every winter all of the open-flow propeller meters are pulled from service and receive a complete rebuild and overhaul. Also, during the winter any meter that is reported to be registering incorrect flow measurements is rebuilt and overhauled. The District has a few cable-driven meters that receive routine maintenance and cable replacement. As these meters age or frequency of repairs increases, they are replaced with a direct or magnetic-drive meter under the meter replacement program.

2. Urban Customers

a. *Total number of connections* 1,949

b. *Total number of metered connections* 1,278

c. *Total number of connections not billed by quantity* 671

d. *Percentage of water that was measured at delivery point* See note below

e. *Percentage of delivered water that was billed by quantity* See note below

f. *Measurement device table*

Meter Size and Type	*Number*	*Accuracy (+/-percentage)*	*Reading Frequency (Days)*	*Calibration Frequency (Months)*	*Maintenance Frequency (Months)*
5/8-3/4"	414	2	Bi-Monthly	When Requested	When Requested
1"	317	2	Bi-Monthly	When Requested	When Requested
1 ½"	351	2	Bi-Monthly	When Requested	When Requested
2"	170	2	Bi-Monthly	When Requested	When Requested
3"	7	2	Bi-Monthly	None	When Requested
4"	17	2	Bi-Monthly	None	When Requested
6"	1	2	Bi-Monthly	None	When Requested
8"	1	1	Bi-Monthly	None	When Requested
10"	0				
Compound					

Turbo					
Other (define)					
Total	1,278				

Note for 2.d & 2.f: At this time, it is extremely difficult to determine the percentage of measured and billed quantities at the delivery points. The new criterion set by the USBR defines an urban customer as one that receives irrigation water but does not have a "cash crop". The District has 671 rural ranch customers that receive their irrigation water at a flatrate based on acres served. Of these, 118 are 1½" to 6" services that are billed as a flatrate. The BMPs will outline their modification to metered serves. The remaining 553 are served through an alfalfa valve. The District has for several years, working with ITRC, examined different methods of measuring theses services, but to date, it has been very cost prohibitive. The District will be addressing this issue in our Agricultural BMPs.

The District does not have the facilities to calibrate its large urban meters. Per the meter manufacturer, calibration requires that the meter be sent back to the manufacturer or other qualified location. Usually due to the meter's age and maintenance reports, the meter is replaced by the District's recurring meter replacement program under the Rehabilitation and Betterment Program. When an accuracy issue arises, the District will remove and check the calibration of meters up to 2 inch in size. Based on the findings the meter will either be rebuilt or replaced. The District is currently working on updating the District's inventory of our facilities and is proactively moving forward with an Asset Management Program which will include a formalize schedule for meter maintenance and replacement. The meters that the District utilizes do not require routine maintenance, but the District does routinely pull meters in our raw systems to clean the meter screens.

3. Agriculture and Urban Customers

a. *Current year agriculture and /or urban water charges - including rate structures and billing frequency*

See Attachment C, Page 58 (Section III-17 and III-18), for current year rate ordinance

The District's current adopted Rules and Regulations (Attachment C) does not directly address the current year rate ordinance. It does state that the Board of Directors will establish the upcoming water rates for the irrigation season before April 1st each year for the following irrigation season and will furnish copies of the rates as requested. The different rates and charging units are shown in the following table.

The District's Goals to update the Rules and Regulations:

- 2010 – Include sections in regulations to: outline the water allocation policies; describe the basis for agricultural water charges; describe the basis for urban water charges.
- 2011 – Board approval and adoption of the revised Rules and Regulations.

Annual charges collected from customers (current year data)

Fixed Charges			
Charges ($ unit)	*Charge units ($/acre), ($/customer) etc.*	*Units billed during year (acres, customer) etc.*	*$ collected ($ times units)*
$36.61 (70)	Stock Water (Head ≤ 30)	8 customers	$292.88
$45.77 (71)	Stock Water (Head > 30)	14 customers	$640.78
$58.58 (72)	Flatrate per Acre	1,376 acres	$80,633.00
$89.52 (74)	Flatrate per Acre	42 acres	$7,548.33
		Total:	$89,114.99

Volumetric charges			
Charges ($ unit)	*Charge units ($/AF), ($/HCF), etc.*	*Units billed during year (AF, HCF) etc.*	*$ collected ($ times units)*
$1.02 (M14)	HCF	20,035	$20,435.70
$1.04 (M16)	HCF	106,424	$110,680.96
$0.36 (M19)	HCF	165,418	$33,971.76
$0.35 (M22)	HCF	262,287	$1,706.60
$1.20 (M23)	HCF	21,235	$25,482.00
$0.48 (M31)	HCF	27,524	$13,211.52
$5.47 (M43)	HCF	4,245	$23,220.15
$0.39 (M65)	HCF	15,617	$1,760.85
$1.02 (M68)	HCF	2,604	$2,656.08
$0.37 (M69)	HCF	22,949	$8,491.13
$0.29 (M79)	HCF	33,346	$9,670.34
$0.30 (M94)	HCF	339,035	$101,710.50
	Urban Totals:	1,020,719	$352,997.59
$16.65 (22)	AF	1,379	$22,954.50
$135.04 (26)	AF	653	$88,106.22
$18.31 (30)	AF	114,955	$2,104,827.13
$27.98 (38)	AF	2,655	$74,278.16
$30.98 (39)	AF	315	$9,761.85
$45.90 (45)	AF	648	$29,726.71
$135.04 (49)	AF	33	$4,482.25
$117.61 (98)	AF	280	$32,855.98
	Ag. Totals:	120,918	$2,366,992.80

See Attachment D, Current Year's Rate Ordinance and District Sample Bills

b. Water-use data accounting procedures

Solano Irrigation District (The District) serves water to both agricultural and urban (municipal and industrial or M & I) customers. A distinct rate structure is used for each type of service.

The agricultural customers are divided into two categories: flat rate and ag water. Each of these categories is further subdivided as above or below the Putah South Canal (to which water is released from). Above the Canal requires the water to be pumped and below- gravity takes effect.

Both the flat rate and ag water consumers are billed based upon a different set of fees. The flat rate customers are billed based upon consumption using a rate assigned to the specific service area in which the water is delivered. These customers are billed on a monthly basis. The ag water customers must attest at the beginning of the water season (as determined by the board of directors) whether or not they will be irrigating their fields. If they choose to irrigate (as indicated by signing the attestation), they will be billed based on the number of acres and the rate assigned to the service area. If the attestation is not received from the customer, a tax assessment will be levied against them based upon the number of acres on record.

Municipal and industrial customers are billed based upon consumption and the rate assigned to the specific service area. These customers are billed on a bi monthly basis.
If payment is not received a tax assessment will be levied against them once a year. Additional fees can be applied if the customer has a back flow preventer.

Below is a listing of the water rate codes and unit fee.

Agricultural Water (per AF)		Municipal & Industrial (per HCF)	
22	$19.04	M19	$0.37
26	$139.32	M22	$0.32
30	$19.04	M65	$0.44
38	$31.73	M69	$0.33
39	$31.73	M14	$1.07
45	$47.73	M16	$1.15
49	$139.32	M23	$1.19
55	$182.95	M31	$0.31
59	$139.82	M33	$8.45
70	$38.08	M43	$6.05
71	$47.60	M68	$6.69
72	$60.93		
74	$101.54		
98	$139.40		

Back Flow Preventer

Back flow fixed fees are $10.00, $20.00 and $70.00 dependent upon the area of service.

Currently the District utilizes a DOS based program which is outdated, has few reporting capabilities, and does not lend itself to implementing BMP's. Municipal and industrial customers get a graphical summary showing their water usage back for one year; see Attachment D. Customers wishing to see a more complete history can request a copy from the finance department. Once the request is made the water account is exported from the software to Excel and sent to the customer. The accounting software utilized by Ag billing only retains the information electronically for the current irrigation season. Customers wishing to review past water usage must submit a request to the Ag operations department. Once the request has been made, staff can tabulate the water usage by manually extracting the data from the year-end print out. The District maintains these records for many years back.

The District is in the process of reviewing new accounting software (including Enterprise Resource Planning). The District will have completed the Needs Analysis by the end of 2009. In 2010, the District anticipates selecting a solution vendor and moving forward with an implementation.

H. Water Shortage Allocation Policies

1. *Current year water shortage policies or shortage response plan - specifying how reduced water supplies are allocated*

See Attachment E, District Water Shortage Plan

2. *Current year policies that address wasteful use of water and enforcement methods*

See Attachment C, Page 60 (Section V-1 and V-2)

Section 2: Inventory of Water Resources

A. Surface Water Supply

1. Acre-foot amounts of surface water delivered to the water purveyor by each of the purveyor's sources
See Water Inventory Tables, Table 1

2. Amount of water delivered to the district by each of the district sources for the last 10 years
See Water Inventory Tables, Table 8

B. Ground Water Supply

1. Acre-foot amounts of ground water pumped and delivered by the district
See Water Inventory Tables, Table 2

2. Ground water basin(s) that underlies the service area

Name	*Size (Square Miles)*	*Usable Capacity (AF)*	*Safe Yield (AF/Y)*
Solano Subbasin (Sac. Valley)	664	Unknown	Unknown
Suisun-Fairfield Valley	Unknown	Unknown	Unknown

Note: the Department of Water Resources has not completed the "Unknown" data at this time.

3. Map of district-operated wells and managed ground water recharge areas
See Attachment F, District Map of Ground Water Facilities
(Attached CD with well map printed as PDF)

4. Description of conjunctive use of surface and ground water

The groundwater available to the District is of good quality and is suitable for municipal and agricultural use. Based on the information available from the United States Geological Society (USGS), the storage capacity of the two basins that underlies the District is unknown. What is known, as shown in Plate 5 of Attachment G, is the groundwater level today is much higher now than it was in 1959 at the beginning of the Solano Project. Historical District documents indicate that because of the high groundwater pumping in the early fifties was a major motivator for bringing surface water to this area and was what started Solano Project.

The District does not utilize dedicated recharge sites; it uses an indirect method of recharge by way of deep percolation through the farmers' fields and in-stream through tailwater ditches and drain channels. As shown in Table 7, the resulting recharge to the aquifers is approximately 11,000 AF per year during the irrigation season. In the future, the District will be investigating possible recharge sites in order to further improve deep percolation during the rainy season.

5. Ground Water Management Plan
See Attachment G, Ground Water Management Plan

6. Ground Water Banking Plan
~~See Attachment H, Ground Water Banking Plan~~
The District does not have a Ground Water Banking Plan.

C. Other Water Supplies

1. "Other" water used as part of the water supply
See the Water Inventory Tables, Table 1

D. Source Water Quality Monitoring Practices

1. Potable Water Quality (Urban only)
See Attachment I – District Annual Water Quality Report

2. Agricultural water quality concerns: *Yes* _____ *No* **X**
(If yes, describe)

3. Description of the agricultural water quality testing program and the role of each participant, including the district, in the program
Currently the District annually takes water samples from four of its thirty-four agricultural deepwells. The District also monitors all of the deepwells for its potable water systems and partnership systems. The combination of Ag. and M&I wells are spread out enough to provide a reasonable look at the water quality for the entire District.

4. *Current water quality monitoring programs for surface water by source (Agricultural only)*

Analyses Performed	*Frequency*	*Concentration Range*	*Average*
None			

The District does not monitor its surface water for quality.

Current water quality monitoring programs for groundwater by source (Agricultural only)

Analyses Performed	*Frequency*	*Concentration Range*	*Average*
Alkalinity (as CaCO3)	Annual	260 – 350 mg/L	307.50 mg/L
Arsenic (As)	Annual	*ND* – 5.2 ug/L	2.63 ug/L
Bicarbonate (as CaCO3)	Annual	260 – 350 mg/L	307.50 mg/L
Boron (B)	Annual	0.33 – 0.54 mg/L	0.46 mg/L
Calcium (Ca)	Annual	32 – 51 mg/L	41.25 mg/L
Carbonate (as CaCO3)	Annual	*ND* mg/L	*ND* mg/L
Chloride (Cl)	Annual	12 – 16 mg/L	13.75 mg/L
Conductivity-Specific (EC)	Annual	620 – 820 umho/cm	717.50 umho/cm
Hydroxide (as CaCO3)	Annual	*ND* mg/L	*ND* mg/L
Magnesium (Mg)	Annual	36 – 68 mg/L	53.25 mg/L
Nitrate (NO3)	Annual	10 – 38 mg/L	25.25 mg/L
Nitrate (NO3-N)	Annual	2.2 – 8.6 mg/L	5.68 mg/L
Percent Sodium	Annual	14 – 30 %	19.25 %
pH	Annual	8.0 – 8.2	8.10
Phosphorus-Total (P)	Annual	*ND* mg/L	*ND* mg/L
Potassium (K)	Annual	*ND* – 2.5 mg/L	0.63 mg/L
Sodium (Na)	Annual	22 – 45 mg/L	32.25 mg/L
Sulfate (SO4)	Annual	29 – 50 mg/L	39.75 mg/L
Total Dissolved Solids (TDS)	Annual	340 – 470 mg/L	407.50 mg/L
Sodium Absorption Ratio	Annual	0.57 – 1.8	0.86

E. Water Uses within the District

1. Agricultural
See Water Inventory Tables, Table 5 - Crop Water Needs

2. Types of irrigation systems used for each crop in current year

Crop name	*Total Acres*	*Level Basin - acres*	*Furrow - acres*	*Sprinkler - acres*	*Low Volume - acres*	*Multiple methods - acres*
Alfalfa	7,978	7,978	0	0	0	0
Pasture	3,213	3,213	0	0	0	0
Sudan Grass	3,147	0	3,147	0	0	0
Field Corn	2,726	0	2,726	0	0	0
Tomatoes	2,529	0	2,529	0	0	0
Sunflowers	2,494	0	2,494	0	0	0
Grapes	2,236	0	0	0	2,236	0
Walnuts	2,200	0	0	2,200	0	0
Almonds	1,225	0	0	1,225	0	0
Wheat	1,200	0	1,200	0	0	0
Beans	1,073	0	1,073	0	0	0
Truck Farm	981	0	0	0	0	981
Hay	976	976	0	0	0	0
Turf Farm	634	0	0	634	0	0
Cucumbers	396	0	396	0	0	0
Curcurbit	396	0	396	0	0	0
Prunes/Plums	369	0	0	369	0	0
Sweet Corn	336	0	336	0	0	0
Safflower	266	0	266	0	0	0
Nursery	175	0	0	0	175	0
Peaches	115	0	0	0	0	115
All Other	2,480	0	0	0	0	2,480
Total:	**37,145**	**12,167**	**14,563**	**4,428**	**2,411**	**3,576**

3. Urban use by customer type in current year

Customer Type	*Number of Connections*	*AF*
Single-family	450	418
Multi-family	0	
Commercial	73	380
Industrial	16	See Note 1
Institutional	121	891
Landscape irrigation	617	655
Recycled	0	
Wholesale (by customer)	0	
Flatrate	671	See Note 2
(specify)		
(specify)		
Unaccounted for	0	
Total	1,948	

Note 1: Although the District has broken out the number and types of connections based on our meter records and geographic areas served, currently the District's accounting system categorizes the commercial and industrial areas under a single billing category. Therefore the quantity of water served to each category cannot be determined. We are in the process of changing our accounting software that should allow this separation. Future WMP updates should report these as two separate categories.

Note 2: Of the 671 flatrate customers, the District has 553 alfalfa valve services and 108 small services. All of these are rural ranch parcels and the services are un-metered. The alfalfa valves systems are operated by putting a measured amount of water into the pipeline and the customers open their own alfalfa valves on their scheduled irrigation day. If the customer does not irrigate, the water is spilled back into a District irrigation canal or is spilled into a drainage ditch. The water that enters the drainage ditch is not lost because it is "delivered" to the Maine Prairie Water District for their agricultural irrigation needs. The 108 small services are located in systems that, until recent changes in the USBR's criteria, were exempt. These services will be modified to accept meters as outlined in the BMPs.

4. Urban Wastewater Collection/Treatment Systems serving the service area – current year

Treatment Plant	*Treatment Level (1, 2, 3)*	*AF*	*Disposal to / uses*
None		0	
	Total	0	
Total discharged to ocean and/or saline sink			

5. Ground water recharge/management in current year (Table 6)

Recharge Area	*Method of Recharge*	*AF*	*Method of Retrieval*
None		0	
	Total	0	

6. Transfers and exchanges into or out of the service area in current year (Table 6)

From Whom	*To Whom*	*AF*	*Use*
Maine Prairie Water District	Solano Irrigation District	10,000	Agricultural
Solano Irrigation District	City of Vacaville	(2,653)	Urban Potable
Solano Irrigation District	City of Fairfield	(2,969)	Urban Potable
Solano Irrigation District	City of Suisun	(2,864)	Urban Potable
Solano Irrigation District	Maine Prairie Water District	(14,942)	Agricultural, Spill & drain
	Total	(13,428)	

Note: In Table 6 the total transfer water is shown as -2,168 AF. The difference between the two tables is the District's spill water total of 11,260 AF is subtracted out because the District's spill water is delivered to MPWD for their agricultural use.

7. Trades, wheeling, wet/dry year exchanges, banking or other transactions in current year (Table 6)

From Whom	*To Whom*	*AF*	*Use*
None		0	

8. Other uses of water in current year

Other Uses	*AF*
None	0

F. Outflow from the District (Agricultural only)

Districts included in the drainage problem area, as identified in "A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990)," should also complete Water Inventory Table 7 and Appendix B (include in plan as Attachment L)

Solano Irrigation District is not part of this management plan.

See Facilities Map, Attachment A, for the location of surface and subsurface outflow points, outflow measurement points, outflow water-quality testing locations

1. Surface and subsurface drain/outflow in current year

Outflow point	*Location description*	*AF*	*Type of measurement*	*Accuracy (%)*	*% of total outflow*	*Acres drained*
1	Sweeny Creek	4,344	Weir	±5	25	NA
2	Ulatis Measuring Weir	3,906	Weir	±5	22	NA
3	Sawtelle Measuring Weir	2,003	Weir	±5	11	NA
4	Brown-Alamo Measuring Weir	7,262	Weir	±5	41	NA

Note: Main Prairie Water District (MPWD) diverts a large immeasurable portion of the tailwater at the Sweeny Creek weir before it goes over that weir. The 4,344 AF only represents what is measurable over the weir. The other weir totals represent the measurable quantity going over the weir. 85% of the tailwater leaving the District is sold to MPWD for agricultural use. The acreage drained in currently not available. These numbers would require a manual tabulation from record

drawings and Assessor maps of the District's northern service area. The District will discuss and outline changes to the quantity and accuracy of the outflow measuring sites in the BMPs.

Outflow point	*Where the outflow goes (drain, river or other location)*	*Type Reuse (if known)*
1	Drain utilized by MPWD	Agricultural
2	Drain utilized by MPWD	Agricultural
3	Drain utilized by MPWD	Agricultural
4	Drain utilized by MPWD and Sacramento River	Agricultural / Unknown

2. *Description of the Outflow (surface and subsurface) water quality testing program and the role of each participant in the program*

The District does not currently have an outflow quality testing program.

3. *Outflow (surface drainage & spill) Quality Testing Program*

Analyses Performed	*Frequency*	*Concentration Range*	*Average*	*Reuse limitation?*
None				

The District does not measure the quality of its spill and drain water.

Outflow (subsurface drainage) Quality Testing Program

Analyses Performed	*Frequency*	*Concentration Range*	*Average*	*Reuse limitation?*
None				

The District does not measure the quality of its subsurface drainage water.

4. Provide a brief discussion of the District's involvement in Central Valley Regional Water Quality Control Board programs or requirements for remediating or monitoring any contaminants that would significantly degrade water quality in the receiving surface waters.

The District is not involved with the remediation or monitoring plans of the CVRWQCB.

G. Water Accounting (Inventory)

1. *Water Supplies Quantified*

   a. *Surface water supplies, imported and originating within the service area, by month (Table 1)*
   b. *Ground water extracted by the district, by month (Table 2)*
   c. *Effective precipitation by crop (Table 5)*
   d. *Estimated annual ground water extracted by non-district parties (Table 2)*
   e. *Recycled urban wastewater, by month (Table 3)*
   f. *Other supplies, by month (Table 1)*

2. *Water Used Quantified*

   a. *Agricultural conveyance losses, including seepage, evaporation, and operational spills in canal systems (Table 4) or*
      Urban leaks, breaks and flushing/fire uses in piped systems (Table 4)
   b. *Consumptive use by riparian vegetation or environmental use (Table 6)*

c. *Applied irrigation water - crop ET, water used for leaching/cultural practices (e.g., frost protection, soil reclamation, etc.) (Table 5)*
d. *Urban water use (Table 6)*
e. *Ground water recharge (Table 6)*
f. *Water exchanges and transfers and out-of-district banking (Table 6)*
g. *Estimated deep percolation within the service area (Table 6)*
h. *Flows to perched water table or saline sink (Table 7)*
i. *Outflow water leaving the district (Table 6)*
j. *Other*

3. *Overall Water Inventory*
   a. *Table 6*

H. Assess Quantifiable Objectives:

Identify the Quantifiable Objectives that apply to the District (Planner, chapter 10) and provide a short narrative describing past, present and future plans that address the CALFED Water Use Efficiency Program goals identified for the District.

QO #	*QO Description*	*Past, Present & Future Plans*
50	Provide flow to improve ecosystem conditions (Cache & Putah Creeks)	Additional flow is released by SCWA
52	Reduce pesticides to enhance and maintain beneficial uses of water (Sacramento River)	Not used within the District

QO #50: Although additional water has been diverted into Lower Putah Creek at the headworks of the Putah South Canal per the Putah Creek Adjudication since 2000, Solano County Water Agency (SCWA) is the responsible agency and accountable for the additional water release. The additional water is not part of the District's allocation and does not take place within the District boundary. In addition, the District does not have a direct or indirect flow path into Putah Creek and does not have any spill or drain ditches that terminate into Lower Putah Creek. Therefore the District has completed the requirements for QO #50.

QO #52: As outlined in the description of this objective, the only pesticide of concern was diazinon. The District does not use diazinon for its pest control. Therefore the District has completed the requirements for QO #52.

Section 3: Best Management Practices (BMPs) for Agricultural Contractors

A. Critical Agricultural BMPs

1. *Measure the volume of water delivered by the district to each turnout with devices that are operated and maintained to a reasonable degree of accuracy, under most conditions, to +/- 6%*

Number of turnouts that are unmeasured or do not meet the standards listed above: 0

Number of measurement devices installed last year: 46 (2007)

Number of measurement devices installed this year: 105 (2008)

Number of measurement devices to be installed next year: 100 (2009)

Types of Measurement Devices Being Installed	*Accuracy*	*Total Installed During Current Year*
Doppler headworks meters	±1%	3
Mag meters	±1%	6
Direct / Magnetic drive propeller meters	±2%	96

Although the District has zero turnouts that do not meet the measuring standards set by the USBR, the District routinely replaces metering devices with more accurate and technologically advanced meters. As part of the R&B Program, the District allocates between $35,000 and $50,000 per year for agricultural meter replacement. Some of the funds are used for the annual rebuilding of its open-flow meters and replacing troublesome cable driven propeller meters with direct or magnetic drive meters. In addition, as pipelines are replaced under the R&B Program or by land development, each service is replaced with a properly sized and configured meter for that parcel.

The District works closely with ITRC and monitors technological advances to solve some of its plaguing metering problems. For example, for several years the District has examined ways to accurately meter deliveries through alfalfa valves. These non-metered alfalfa valve services are billed on a flatrate per year based on the acreage of the parcel. To date, the metering options available have either proved inaccurate as tested by ITRC or have been cost prohibitive.

Some operational constraints on the alfalfa valve delivery systems, which affect the ability to accurately meter the flow include:

- Fluctuating available head from canal serving the pipeline
- Very little head available (typically 1 foot above field grade)

Some of the options the District are or have investigated are as follows:

1. Miner's box and Rectangular Notch Weir:
    a. Pros – inexpensive, easy to install, service modifications not required for flood irrigated pastures.
    b. Cons – inaccurate due to fluctuating available head (automated headworks gates may resolve this problem – but are expensive to implement), require manual readings

during irrigation period (system is run on-demand), cannot be modified to work on services for non-flood irrigated pastures (private pipelines).

2. Metered Alfalfa Valve "Bonnet":
    a. Pros – magnetic meter does not rely on head pressure, meter accurately measures varied flow rates, can be adapted for flood irrigation or private pipeline, works with an alfalfa valve, relatively easy installation.
    b. Cons – relatively expensive, requires manual reading of meter, bonnet requires customization to accept meter.

3. Doppler Meter:
    a. Pros – does not rely on head pressure, accurately measures varied flow rate, does not alter existing private facilities, can be connected to radio-read system.
    b. Cons – expensive and difficult to install

4. Vertical Turbine Meter:
    a. Pros – does not rely on head pressure, accurately measures varied flow rate, works well in raw water, can be connected to radio-read system, relatively easy connection to private facilities.
    b. Cons – relatively expensive, moderately difficult to install, may not be enough head at times to operate through a smaller meter to accurately measure the flow.

Currently, the District is working on several ideas that will accurately measure the water and may reduce the costs from $7,500 to $3,500 per service. Although the projected cost has been dramatically reduced, the District has approximately 553 alfalfa valve services, the cost to convert these services would be about $2.3 million and take approximately fifty years to break even.

The District's Goals:

- 2010 – draft and adopt metering policy; mail landowner notifications indicating change in metering structure; target feasible metering options
- 2011 – implement pilot program using targeted options; draft action plan based on pilot program's results and estimated cost to implement
- 2012 – begin conversion from flatrate to metered services at an anticipated rate of 5-10% per year, depending on estimated cost

2. Designate a water conservation coordinator to develop and implement the Plan and develop progress reports

Name: Joel Tetzlaff *Title:* Assistant Engineer

Address: 508 Elmira Road Vacaville, CA 95687

Telephone: 707-455-4019 *E-mail:* tetzlaffj@sidwater.org

3. Provide or support the availability of water management services to water users

See Attachment J, Notices of District Education Programs and Services Available to Customers.

a. On-Farm Evaluations

1) On farm irrigation and drainage system evaluations using a mobile lab type assessment

	Total in district	*# surveyed last year*	*# surveyed in current year*	*# projected for next year*	*# projected 2nd yr in future*
Irrigated acres	37,145	550	540	660	825
Number of farms	1,808	10	12	12	15

Eleven years ago the District began its program for on-site irrigation evaluations. Six years ago the District added a moisture monitoring program. These are free programs offered to the farmers through our water conservation effort. What started out, as a part-time position, has evolved into a full-time Irrigation Specialist position. In addition to the District staff, we also hire a summer intern to help with the program. Since its inception, the District has evaluated over 110 farms and has established 78 moisture monitoring stations on 39 farms. Many farmers are utilizing this information for their irrigation practices. Since most of the larger farmers cultivate several parcels, a single evaluation can have a positive impact on thousands of acres.

The District's Goals:

- Combine the on-site irrigation evaluation and moisture monitoring programs
- Send flyer to farmers at beginning of irrigation season offering these free programs
- On-site irrigation evaluations for responding farmers
  - Follow-up contact to farmers new to the area
- Make irrigation recommendations including: day intervals, duration, optimizing their pressurized system and uniform water distribution
- Set up moisture monitoring stations
- Develop an implantation plan with the farmer, if modernization is needed

2) Timely field and crop-specific water delivery information to the water user

The District's Irrigation Specialist manages the Solano Agricultural Water Conservation Committee's (AWCC) weather website and weather station network, which provides evapotranspiration rates for use in irrigation scheduling. The free website also provides daily, weekly, and historical weather data from nine weather stations located in Solano County, a link to the CIMIS website, and a crop irrigation report. A weather forecast is also available to growers at a cost of $10/month. The forecast targets Solano County, and includes pest models such as degree days, chilling hours, powdery mildew levels, peach twig borer/codling moth levels, and two-spotted spider mite levels. The web address is www.westernwx.com/sid.

b. Real-time and normal irrigation scheduling and crop ET information

A daily email of weather and weather forecast information including ETo data is provided to the District under the AWCC program. This information is available to any grower at the District office, by phone hotline to six weather stations, or by direct website access. The weather forecast is also available on a daily basis by email, website access, or fax at a cost of $10/month. The forecast includes a daily outlook, 3-5 day outlook, extended outlook, temperatures, dew points, probability of precipitation, wind conditions, and ETo. Enclosed as Attachment J, is a copy of the daily weather e-mail received by the District, and the free

Solano weather page, which is accessible from the AWCC's weather website, www.westernwx.com/sid.

The AWCC's weather station network includes one CIMIS station within the SID service area, three CIMIS stations adjacent to the District, and six SID-owned stations within the District; one west of Dixon and five stations located in the Suisun Valley. The West Dixon station was installed in 2008 with financial assistance from a $6,000 USBR Water Conservation Field Services grant. Each SID-owned station is equipped with a telephone hotline and website access. The hotlines provide evapotranspiration rates and 10 minute updates of current weather conditions.

c. Surface, ground, and drainage water quantity and quality data provided to water users

Surface water supply from the Putah South Canal (PSC) is used by several communities as a potable water supply, which is routinely monitored in accordance with Title 22 requirements. Groundwater levels are routinely monitored by the District, and groundwater quality is monitored when needed. The District supports drainage water quality testing, performed by two entities, the City of Vacaville and the Sacramento Valley Water Quality Coalition (Coalition). The City of Vacaville tests discharges from its Easterly Wastewater Treatment Plant where flows are commingled with upslope drainage. A small portion of downstream flows are recovered by the District for use by agricultural customers. The Coalition, representing landowners, performs drainage water quality testing three miles east of the District on Ulatis Creek and Brown Road to meet the water quality compliance requirements of the California Central Valley Regional Water Quality Control Board. Copies of the public water systems' quality tests are enclosed as Attachment I.

d. Agricultural water management educational programs and materials for farmers, staff, and the public

Program	*Co-Funders (If Any)*	*Yearly Targets*
Irrigation Management workshops	Solano County Water Agency, Reclamation District 2068 & Main Prairie Water District	2x/year; 40 farmers and/or irrigators as attendees
"The Irrigator" newsletter	Same as above	3x/year; sent to 500 farmers & landowners
Daily water order meetings	None	10-20 irrigators per day

See Attachment J for samples of provided materials and notices

e. other

Not applicable

4. *Pricing structure - based at least in part on quantity delivered*

Describe the quantity-based water pricing structure, the cost per acre-foot, and when it became effective.

The District uses a quantity-based pricing structure with the exception to our flatrate customers. As described in Section 3.A.1, the District has been actively working on solutions to convert flatrate customers to quantity-based.

5. *Evaluate and describe the need for changes in policies of the institutions to which the district is subject*

None

6. *Evaluate and improve efficiencies of district pumps*

Describe the program to evaluate and improve the efficiencies of the contractor's pumps.

The District maintains an active pump testing program to monitor pump performance and determine repairs required to maximize pump efficiencies, minimize power consumption and enable managers to plan preventative maintenance procedures. The annual budget for the pump rehabilitation and maintenance is $100,000, and the annual budget for pump efficiency testing is $7500. The testing program has allowed staff to establish baseline performance standards for most of the District's pumps. The District participates in the California Agricultural Pump Efficiency Program (APEP), which manages a rebate program with PG&E for successful pump tests and pump repairs.

B. Exemptible BMPs for Agricultural Contractors

(See Planner, Chapter 2, Appendix C for examples of exemptible conditions)

1. *Facilitate alternative land use*

Drainage Characteristic	*Acreage*	*Potential Alternate Uses*
High water table (<5 feet)	0	
Poor drainage	0	
Ground water Selenium concentration > 50 ppb	0	
Poor productivity	0	

The District is not aware of any these problems and does not currently have any plans for these types of facilities. We will look into this and determine the necessity for potential future projects.

Describe how the contractor encourages customers to participate in these programs.

2. *Facilitate use of available recycled urban wastewater that otherwise would not be used beneficially, meets all health and safety criteria, and does not cause harm to crops or soils*

Sources of Recycled Urban Waste Water	*AF/Y Available*	*AF/Y Currently Used in District*
Fairfield Wastewater TP (Chadbourne Road)	16,802	10,555
Vacaville Easterly Wastewater TP	7,485	0

The District utilizes recycled water from the FFWWTP for all of the irrigation needs for the turf nursery located near the treatment plant. Currently, this is the only farm located in the vicinity of a treatment plant that is not producing a consumable crop.

3. Facilitate the financing of capital improvements for on-farm irrigation systems

Funding source Programs	*How provide assistance*
Grants and programs	Offset construction costs of improvements
Ag Meter Replacement Program (R&B Program)	Cost share for meter replacement

The District will look into Grants available to the farmers for on-farm irrigation system improvements and help the farmer apply for those Grants and programs such as the Natural Resources Conservation Service.

In 2004, the District implemented an Ag Meter Replacement Program that shares the meter and service conversion costs with the farmers. Since the original system was designed for flood or furrow irrigation, the agricultural services were constructed for high volume usage. As farmers converted their irrigation systems to drip or micro-spray systems, the original metered gate or propeller meter services did not accurately measure the lower flow rates. This program shares in the costs to convert the service to a low flow meter. This is accomplished by the farmer paying for only the material costs and the District paying for the labor and equipment costs including the engineering of the "new" service.

4. Incentive pricing

Structure of incentive pricing	*Related goal*

Currently, the District uses volumetric pricing. The incentive to the customer to conserve water is based on lower water bills. The exception to this is the District's flatrate customers which are outlined in Section 3.A.1 and Section 4.A.1.3. The District understands the usefulness of incentive pricing to enforce and encourage water conservation. Currently the District is preparing to purchase updated billing software that should allow for a different rate structure such as tiered or block pricing and the District will be looking into this and other billing methods. As shown in the USBR guide books, tiered pricing may allow the District to offer farmer rebates for on-farm improvements that increase water efficiency or conservation at the farm level. As described elsewhere in this plan, on-site farm evaluations and educational opportunities offered by the District should help with the overall goal of water conservation with a strong emphasis on water efficiency (i.e. increasing yields per unit of water applied).

5. a) Line or pipe ditches and canals

Canal/Lateral (Reach)	*Type of Improvement*	*Number of Miles in Reach*	*Estimated Seepage (AF/Y)*	*Accomplished/ Planned Date*
Vaughn Lat. 5-2	Canal to Pipeline	0.65	1,505	2009
Vaughn Canal – Ph. 2	Conc. Lining	3	4,165	2009
Vaughn Canal – Ph. 3	Conc. Lining	1.13	2,616	2010
Vaughn Lat. 5 – Ph. 1	Conc. Lining	1.49	1,485	2012
Vaughn Lat. 5 – Ph. 2	Conc. Lining	0.47	468	2013
Weyand Canal – Ph. 1	Conc. Lining	2.46	1,837	2014
Weyand Canal – Ph. 2	Conc. Lining	2.13	1,591	2015

The District's goal is to continue concrete lining canals as Grant opportunities and funding becomes available.

b) Construct regulatory reservoirs

Reservoir Name	*Annual Spill in Section (AF/Y)*	*Estimated Spill Recovery (AF/Y)*	*Accomplished/ Planned Date*
None			

The District worked with ITRC regarding regulatory reservoirs in the canal distribution system. This type of facility was a requirement for the automation of the canal systems and was determined to be cost prohibitive. Although the District does not currently have any plans for this type of facility, we will look in its feasibility and potential for future projects.

6. Increase flexibility in water ordering by, and delivery to, water users
~~See Attachment L, contractor 'agricultural water order' form~~

The District is very flexible with regards to receiving agricultural water orders. Each farmer or their irrigator can order water by any of several methods. Water orders can be placed in-person at water orders, phoned or faxed to the agricultural operations dispatcher or phoning the watertender directly. There are no special forms to fill out. The water users can also request water from another District watertender and the information is relayed to the proper watertender for delivery.

Our watertenders work very closely with our customers. Since the District's canals and pipelines often are run at capacity, the District often receives more requests than the available capacity. At times there may be between five and twelve farmers on a waiting list. As water becomes available, the watertenders will notify irrigators on the waiting list and make the water available to them. Although the District's Rules and Regulations state that water orders must be made by 2 p.m. the day before the requested irrigation period, when growers are on a waiting list the District will accommodate water order changes at anytime. Irrigators will notify the watertender when they have completed their irrigation ahead of schedule. Also, the watertenders will work with the irrigators and delay start times to allow other farmers to complete their water delivery. This allows the watertender to "move" the water to another customer and thereby minimizes the length of time other customers are on the waiting list.

Before the beginning of the irrigation season and before the crops are planted, our operations department will meet with farmers and help plan their upcoming crop year. The farmers will show where and which crops they intend to plant. The operations department will record this information on a map and keep a running tally of the required water for the crops. When needed, the operations department will suggest alternate cropping patterns to minimize capacity problems. This flexibility allows the farmer to maximize their cropping and allows the District to maximize our irrigation deliveries.

7. Construct and operate district spill and tailwater recovery systems

Distribution System Lateral	*Annual Spill (AF/Y)*	*Quantity Recovered and reused (AF/Y)*
Total		0

Drainage System Lateral	*Annual Drainage*	*Quantity Recovered*

	Outflow (AF/Y)	*and reused (AF/Y)*
Total		2,681

Solano Irrigation District has historically welcomed ways to recover and reutilize the distribution system's spill and tailwater. This is evident by the District's current 15 recovery pumps and structures located throughout the distribution system. These pumps and structures recover the system's spill water and farmer's tailwater and re-deliver it to other agricultural customers. Currently, through a separate agreement, all of the water that is not recovered is delivered to the Maine Prairie Water District (MPWD).

There is a balance between the amount of water that can be recovered and what needs to be delivered to MPWD. Since all to the unrecovered water is utilized by MPWD, if the District constructs additional recovery structures and pumps, more the District's entitlement water would have to be delivered to MPWD in order to meet its irrigation requirements.

8. Plan to measure outflow

Total # of outflow (surface) locations/points 11
Total # of outflow (subsurface) locations/points n/a
Total # of measured outflow points 11
Percentage of total outflow (volume) measured during report year 90 (see note below)

Identify locations, prioritize, determine best measurement method/cost, submit funding proposal

Location & Priority	*Estimated cost (in $1,000s)*				
	2009	*2010*	*2011*	*2012*	*2013*
Upstream of Sawtelle Measuring Weir (1)		$50			
Upstream of Ulatis Measuring Weir (2)			$50		
Upstream of Brown-Alamo Measuring Weir (3)				$50	
Upstream of Gibson Measuring Weir (4)					$50

Note: At the Brown-Alamo Measuring Weir water is diverted at the weir by MPWD for their distribution system and therefore is not measured. The District has estimated that 10% of the water is not measured. The installation of Doppler meters in the channels upstream of this and the other weirs will correct this problem.

There are 11 locations along the Solano County Water Agency's (SCWA) flood control channels that receive the District's spill and tailwater which leave the District boundary. All of these locations are not under the District's authority, they under the jurisdiction of SCWA, California Fish and Wildlife (CFW) and the Army Corps of Engineers (ACE). Each new site will require an agreement with SCWA and permits from CFW and ACE. Currently, the District utilizes four measuring weirs owned and operated by the MPWD and two District spill recorders to measure the outflow from the District.

The District's goals:

- Begin the agreement and permitting process early in the design phase each year of construction
- Construct one site per year for a Doppler flow meter that is integrated with our SCADA system
- Upgrade the existing data logger spill recorders to SCADA sites as part of the District's current R&B project for spill recorders

- Integrate the District's outflow monitoring system with SCWA's system

9. Optimize conjunctive use of surface and ground water

Of the 23 agricultural deepwells owned and operated by the District, only one is not connected and conjunctively used by the surface distribution system. The one deepwell, DW15, serves two parcels and was acquired by the District with the original formation of the District. Since that time a distribution lateral as been extended to within a quarter of a mile from the parcels and when DW15 fails, the District will be looking into further extending the lateral rather than drilling another deepwell.

10. Automate canal structures

The District in the past has worked with ITRC to investigate the feasibility of automation of canals. At that time, the project was extremely cost prohibitive. A brief analysis indicated regulatory reservoirs would be needed to properly automate the canal systems.

Even though the initial studies did not show favorable results, the District has continued its attempt to automate our distribution system. With the technological advances in this industry and SCADA, we are currently looking into automating and remote controlling the headworks of the main distribution laterals. Presently this idea is conceptual and will require researching available options and completing a Cost-Benefit Analysis.

The District's goals:

- 2010 – define project scope and purpose; obtain information and guidance from ITRC; research available options; cost estimates for feasible options
- 2011 – construct most feasible option; implement pilot program
- 2012 – begin construction of automated canal gates at rate of 1 or 2 per year, depending on cost estimate

11. Facilitate or promote water customer pump testing and evaluation
~~See Attachment K, Notices of District Education Programs and Services Available to Customers~~

The District works in cooperation with the Solano County Agricultural Water Conservation Committee (AWCC) to implement an active pump efficiency testing program for its customers. The AWCC's Irrigation Specialist is trained and certified as a Pump Test Evaluator by the California Agricultural Pump Efficiency Program. Customer-owned pumps are tested upon request of the landowner. Pump reports with pump data and recommendations for efficiency improvements are distributed to landowners.

12. Mapping

GIS maps	*Estimated cost (in $1,000s)*				
	2009	*2010*	*2011*	*2012*	*2013*
Layer 1 – Distribution system	$5	$30	$100	$50	$25
Layer 2 – Drainage system					
Suggested layers:					
Layer 3 – Ground water information					

Layer 4 – Soils map					
Layer 5 – Natural & cultural resources					
Layer 6 – Problem areas					

GIS mapping of the District's facilities is very important to the District. Over the last several years the District has attended strategic planning meetings with GIS consultants, cities of Vacaville and Fairfield and the county of Solano with regards to a joint GIS system. The County is near its completion of the GIS mapping of the parcels and roads.

A major obstacle for the District is a large and complex District boundary. The District's agricultural distribution system has approximately 112 miles of open canal, 186 miles of pipelines, 73 miles of drainage ditches and 5 reservoirs. The District also serves pressurized non-potable water for landscape irrigation to approximately 1,500 acres of commercial land, potable water to four improvement districts and, through a joint partnership, potable water to the city of Suisun and Dixon.

The District's Goals:

- Continue its inventory of the system using record drawings
    - The District hired a summer intern to begin this process (2009)
- Update the inventory with As-Built drawings and Improvement Plans
- Field verify record information
- Tabulate data into a computer program
- Contract with a GIS company/consultant to map the District
- Hire a GIS Technician to update and maintain the system

C. Provide a 3-Year Budget for Implementing BMPs

1. Amount actually spent during current year (2008).

BMP #		*BMP Name*	*Actual Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$63,900*	*235*
	2	*Conservation staff*	*$68,205*	*1,044*
	3	*On-farm evaluation /water delivery info*	*$8,702*	*497*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$1,000*	*12*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$0*	*0*
	5	*Policy changes*	*$0*	*0*
	6	*Contractor's pumps*	*$144,233*	*280*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*$0*	*0*
	3	*Financing of on-farm improvements*	*$0*	*0*
	4	*Incentive pricing*	*$0*	*0*
	5	*Line or pipe canals/install reservoirs*	*$326,947*	*927*
	6	*Increase delivery flexibility*	*$0*	*0*
	7	*District spill/tailwater recovery systems*	*$0*	*0*
	8	*Measure outflow*	*$0*	*0*

9	*Optimize conjunctive use*	*$0*	*0*
10	*Automate canal structures*	*$0*	*0*
11	*Customer pump testing*	*$3,635*	*119*
12	*Mapping*	*$0*	*0*
	Total	***$616,622***	***3,113***

Note: Ag. Education Program is combined with Conservation Staff

2. *Projected budget summary for the next year (2009 quantities as of 10-13-09).*

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$126,665*	*868*
	2	*Conservation staff*	*$49,298*	*985*
	3	*On-farm evaluations/water delivery info*	*$0*	*448*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$1,000*	*12*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$0*	*100*
	5	*Policy changes*	*$0*	*0*
	6	*Contractor's pumps*	*$173,731*	*228*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*$0*	*0*
	3	*Financing of on-farm improvements*	*$0*	*0*
	4	*Incentive pricing*	*$0*	*0*
	5	*Line or pipe canals/install reservoirs*	*$1,361,635*	*3,030*
	6	*Increase delivery flexibility*	*$0*	*450*
	7	*District spill/tailwater recovery systems*	*$0*	*0*
	8	*Measure outflow*	*$0*	*0*
	9	*Optimize conjunctive use*	*$0*	*0*
	10	*Automate canal structures*	*$0*	*0*
	11	*Customer pump testing*	*$2,646*	*78*
	12	*Mapping*	*$0*	*448*
		Total	***$1,714,974***	***6,196***

Note: Ag. Education Program is combined with Conservation Staff

3. *Projected budget summary for 3rd year (2010).*

BMP #	*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*

A	*1*	*Measurement*	*$125,000*	*850*
	2	*Conservation staff*	*$50,000*	*1,000*
	3	*On-farm evaluations/water delivery info*	*$10,000*	*500*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$1,200*	*15*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$50,000*	*250*
	5	*Policy changes*	*$0*	*0*
	6	*Contractor's pumps*	*$200,000*	*200*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*$0*	*0*
	3	*Financing of on-farm improvements*	*$0*	*0*
	4	*Incentive pricing*	*$0*	*0*
	5	*Line or pipe canals/install reservoirs*	*$1,300,000*	*1,500*
	6	*Increase delivery flexibility*	*$0*	*0*
	7	*District spill/tailwater recovery systems*	*$0*	*0*
	8	*Measure outflow*	*$50,000*	*250*
	9	*Optimize conjunctive use*	*$0*	*0*
	10	*Automate canal structures*	*$0*	*120*
	11	*Customer pump testing*	*$3,000*	*100*
	12	*Mapping*	*$0*	*1,040*
		Total	***$1,789,200***	***5,825***

Note: Ag. Education Program is combined with Conservation Staff

4. *Projected budget summary for 4th year (2011).*

BMP #		*BMP Name*	*Budgeted Expenditure (not including staff time)*	*Staff Hours*
A	*1*	*Measurement*	*$375,000*	*3,000*
	2	*Conservation staff*	*$50,000*	*1,000*
	3	*On-farm evaluations/water delivery info*	*$10,000*	*500*
		Irrigation Scheduling	*$0*	*0*
		Water quality	*$1,200*	*15*
		Agricultural Education Program	*$0*	*0*
	4	*Quantity pricing*	*$50,000*	*250*
	5	*Policy changes*	*$0*	*0*
	6	*Contractor's pumps*	*$200,000*	*200*
B	*1*	*Alternative land use*	*$0*	*0*
	2	*Urban recycled water use*	*$0*	*0*
	3	*Financing of on-farm improvements*	*$0*	*0*
	4	*Incentive pricing*	*$0*	*0*
	5	*Line or pipe canals/install reservoirs*	*$0*	*0*
	6	*Increase delivery flexibility*	*$0*	*0*
	7	*District spill/tailwater recovery systems*	*$0*	*0*
	8	*Measure outflow*	*$50,000*	*250*

9	*Optimize conjunctive use*	*$0*	*0*
10	*Automate canal structures*	*$150,000*	*1,500*
11	*Customer pump testing*	*$3,000*	*100*
12	*Mapping*	*$100,000*	*2,500*
	Total	***$989,200***	***9,315***

Note: Ag. Education Program is combined with Conservation Staff

Section 4: Best Management Practices for Urban Contractors

(Due to the adoption of revised BMPs in December 2008, this section will be updated in Summer 2009.)

Although the District is not currently a signatory of the "Memorandum of Understanding Regarding Urban Water Conservation in California", we have adopted several of these criteria and have implemented them into our operations. In previous Water Management Plans, this section was addressed on a District wide scale and practice. Due to that, these issues are not specifically tracked and are folded into the normal operations of the District. This plan will attempt to extract out the required information and future plans should show a better representation for the implementation of these BMPs.

A. Urban BMPs

1. Utilities Operations

1.1 Operations Practices

1) Conservation coordinator: The District has implemented this, see Section 3.A.2.

2) Water waste prevention: As per the District's Rules and Regulations, the customer is required to control their irrigation water entering and leaving their property. When the District's distribution operators receive calls alerting them of wasteful water users and leaking pipelines or services, the operator will investigate. Once the operator investigates the call, he/she works with the customer to correct the problem. Usually the problem requires only a minor correction. Vagrant abusers of the water are given a written warning and the District reserves the right to discontinue water service until the problem is corrected.

The District is currently implementing a pilot program that may dramatically reduce the amount of water used for our pumping plant filter back flushing. Currently, the best filter for our six pressurized non-potable water systems is sand media. These filters very efficiently remove the aquatics from the water and require very little maintenance. Unfortunately, they are expensive, require a large area for their installation and utilize 200 gpm for each filter for back flushing. A typical 2,000 gpm pumping plant requires eight filters. This amounts to about 77 AF per year for back flushing. The new filters are less expensive, require less room, cover a wider flow range (0-2,500 gpm each) and only utilize 19 gallons per back flush. It is unknown how often the filter will back flush. This District will report the findings with the annual update.

On March 1, 1999, the District entered into an agreement with the other Solano Project members regarding drought measures and water allocation. See Attachment E.

District goals:

- 2009 – as part of Section 4.2.1, the District will add a section to the District's website to address water waste and prevention; links to Solano County and city ordinances regarding water waste; quarterly flyers and billing messages
- 2010 – add and modify section(s) to the Rules and Regulations to specifically address water waste in urban environments

3) Wholesale agency assistance programs: The District does not participate in wholesale agency assistance programs.

4) Encourage CUWCC membership: The District would like to become a member of CUWCC and is looking into this. The goal is to become a member by the end of 2010.

1.2 Pricing (should be Water Loss per the MOU)

The District understands the conservation importance and economic value associated with modern water loss control methods. We have used this water auditing method with our partnership systems, but currently we do not audit our urban systems in this manner. The recent criteria change made by the USBR has greatly expanded the District's urban customers. This criteria change has placed all of our rural residential customers into the urban category and these customers are served by our agricultural canals and pipelines. The District will look into using the AWWA's Standard Water Audit program to analyze our rural residential customers in 2010 and our future water management plans should reflect those audits.

1.3 Metering

Per the adopted MOU, "For consistency with California Water Code (Section 525b), this BMP refers to potable water systems." The District has 100% compliance in reference to its potable water customers.

The District understands that the spirit of this regulation is to have all services metered whether they are served potable, non-potable or agricultural water.

Based on the USBR's new criteria for urban customers, the District has approximately 671 unmetered urban non-potable water services. Of these, 553 are alfalfa valve services on rural ranch parcels which irrigate pasture. These are located on the District's agricultural pipelines and were addressed in the Agricultural BMPs, Section 3.A.1. The remaining 108 services are located in an improvement area that utilizes a dual water system. The residences are serviced with a potable water metered service and the landscape is served by a pressurized non-potable water system. The landscape services range in size from 1 ½" to 6".

The District's Goals:

- 2010 – draft and adopt metering policy; mail landowner notifications indicating change in metering structure; target feasible metering options
- 2011 – implement pilot program using targeted options; draft action plan based on pilot program's results and estimated cost to implement
- 2012 – begin the conversion from flatrate to metered services at an anticipated rate of 5-10% per year, depending on estimated cost

1.4 Water Loss Control (should be Retail Conservation Pricing per the MOU)

The District currently utilizes volumetric rate structure set a uniform rate. This is consistent with the guidelines set by the MOU. The exception to this is the District's

flatrate customers which were addressed in the Agricultural BMPs, Section 3.A.1 and the Urban BMPs, Section A.1.3.

Each parcel within the District is charged an assessment based on their land value, this is used for the operations, maintenance, rehabilitation and replacement of the District facilities. In addition, each service area's uniform rate includes special fees associated with the area which are included in the unit cost. The District does not have fixed charges associated with their meter billing to fund capital improvement type projects

2. *Education*

2.1 Public Information Programs

The District utilizes and supports the programs offered by Solano County Water Agency (SCWA) which includes onsite landscape irrigation evaluations. In the past the District has utilized our own urban conservation program, but due to personnel changes, this program was inadvertently dropped.

The District's goals:

- 2009 - Dedicate space on the District's website for water conservation to be updated a minimum of four times per year. The site would include:
    - Link to SCWA's conservation rebate site
    - Calendar showing landscaping and irrigation events in our area
    - Seasonal landscaping and irrigation tips
    - Links to Master Gardener's websites
    - Links to city conservation and information sites
    - Link to the District's weather website
- 2009 - Add helpful water conservation tips to the billing statement
- 2010 - Add a seasonal information flyer to the billing statement to be sent prior to the upcoming season
- 2010 - The District is investigating new accounting software to replace the current obsolete system. The District will also evaluate the ability to track water consumption with the new system. This will allow the billing statement to show the consumption trend for the year and alert the District and the customer of unusually high usage.
- 2011 - Customers showing an increase of 20% or greater over the previous year will receive a separate billing insert and the District will offer an irrigation evaluation.
- 2011 - Customers showing a much greater usage over their neighbors of the same size lot will receive a separate billing insert and the District will offer an irrigation evaluation.

2.2 School Education

The schools that are within the District's boundary are water conservation educated and informed by the conservation program implemented by the cities in which they are located. The District, through its partnerships with Suisun-Solano Water Authority

(SSWA) and Dixon-Solano Municipal Water Service (DSMWS), participates in the School Water Education Program (SWEP). SWEP is a water education program implemented by the purveyors of water in the cities of Dixon, Suisun, Fairfield and Vacaville. The participating agencies in this program actively encourage water conservation, pollution prevention and protection of the water resources in their communities.

SWEP is a fundamental component common to both water conservation plans and pollution prevention programs. By educating children in the school systems about their local water resources, as well as broader water resources issues, they will: develop wise water use practices; be a positive influence on their parent's water use and pollution prevention practices; and be knowledgeable participants in decision-making process regarding water issues, as adults.

A private education contractor is engaged to conduct the SWEP on behalf of the agencies. Representatives from the agencies meet at least semi-annually to administer and manage the program and monitor the progress of the consultant.

The scope of work required of the consultant:

- Meet with SWEP Committee as needed
- Prepare for presentations by attending professional water education presentations
- Establish working relationships with school districts
- Offer teachers classroom material (Attachment M)
- Establish a working relationship with the Waterways Program
- Conduct teacher in-service workshops
- Conduct classroom presentations
- Participate in special event days at each school district

An example of the number of students, teachers and adults reached during a typical year is shown in the table, Attachment N.

3. Residential

1) Residential assistance program: This program is not currently offered to the District's residential customers. SCWA offers a similar program and it includes the distribution of household water conservation items which include faucet-aerators, low-volume showerheads, hose sprayers, etc. In 2010, the District will join the program offered by SCWA and implement this program to its customers.

2) Landscape water survey: The District offers this voluntary program to its larger landscape customers such as schools, parks and cemeteries. The program is briefly described in Section 4.A.4. In 2010, the District will begin to offer this program to its other customers by way of billing statements and quarterly flyers.

3) High-efficiency clothes washers: This program is currently offered by SCWA. The District will inform its customers of this and other programs by website updates, billing statements and quarterly fliers or publications.

4) WaterSense Specification (WSS) toilets: This program is currently offered by SCWA. The District will inform our customers of this and other programs by website updates, billing statements and quarterly fliers.

5) WaterSense Specifications for residential development: The District does not have jurisdiction over residential development. These projects are reviewed by Solano County's Development Review Committee and city planning departments.

4. CII

The District only delivers landscape irrigation to its CII customers. The majority of water delivered is for small landscaped areas around restaurants and retail stores. As stated earlier in the Urban BMPs, the District also has a Large Landscape Conservation Program available its larger users. This program evaluates the site and irrigation practice of the customer and the District sends out a monthly report. The report records the water usage by the parcel and compares it to the area's ETo. This lets the customer know if they are over or under irrigating their landscape. This is a voluntary program and is currently utilized by three golf courses, six schools, one cemetery and two other large landscape customers. These 12 customers comprise nearly all of the District's current large landscape customers. In 2010, the District is planning on expanding this irrigation evaluation program to all of its CII customers.

5. Landscape

Generally speaking, all of these requirements have been outlined and addressed in the previous Urban BMPs because the District primarily delivers landscape irrigation water to its urban customers.

1) Dedicated Landscape Irrigation Accounts: With the exception of the District's flatrate customers addressed in the Agricultural and Urban Metering BMPs, the District has separate metered accounts for its landscape irrigation customers. The District's expanded conservation program and billing software will aide in the tracking of high use accounts and, as outlined earlier, the District will offer assistance to these customers. Two District service areas, Quail Canyon and Gibson Canyon, which are served potable water, do not have separate landscape meters. However, those two areas are restricted on the availability of landscape irrigation water.

2) CII Accounts without Meters or with Mixed-Use Meters: The District requires all landscape irrigation accounts to have a separate metered service. The District is planning on expanding its Large Landscape Water Conservation Program to all of its CII customers on a voluntary basis and possibly requiring an evaluation for its high water users.

B. Provide a 3-Year Budget for Expenditures and Staff Effort for BMPs

1. Amount actually spent during current year.

Year 2008 BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1.	*Utilities Operations*		
	1.1 Operations Practices	*$0*	*0*
	1.2 Water Loss	*$0*	*0*
	1.3 Metering	*$51,361*	*320*
	1.4 Retail Conservation Pricing	*$0*	*0*
2.	*Education*		
	2.1 Public Information Programs	*$0*	*0*
	2.2 School Education	*$2,200*	*960*
3.	*Residential*	*$0*	*0*
4.	*CII*	*$0*	*0*
5.	*Landscape*	*$0*	*0*
	Total	***$53,561***	***1,280***

2. Projected budget summary for 2nd year.

Year 2009 BMP #	BMP Name	Projected Expenditures (not including staff hours)	Staff Hours
1.	*Utilities Operations*		
	1.1 Operations Practices	*$45,000*	*150*
	1.2 Water Loss	*$0*	*50*
	1.3 Metering	*$30,000*	*375*
	1.4 Retail Conservation Pricing	*$0*	*0*
2.	*Education*		
	2.1 Public Information Programs	*$0*	*40*
	2.2 School Education	*$2,200*	*960*
3.	*Residential*	*$0*	*0*
4.	*CII*	*$0*	*0*
5.	*Landscape*	*$0*	*0*
	Total	***$77,200***	***1,575***

3. *Projected budget summary for 3rd year.*

Year 2010		*Projected Expenditures*	
BMP #	*BMP Name*	*(not including staff hours)*	*Staff Hours*
1. Utilities Operations			
	1.1 Operations Practices	*$50,000*	*200*
	1.2 Water Loss	*$0*	*150*
	1.3 Metering	*$200,000*	*400*
	1.4 Retail Conservation Pricing	*$0*	*0*
2. Education			
	2.1 Public Information Programs	*$5,000*	*150*
	2.2 School Education	*$2,200*	*960*
3. Residential		*$0*	*160*
4. CII		*$0*	*120*
5. Landscape		*$0*	*120*
	Total	***$257,200***	***2,260***

4. *Projected budget summary for 4th year.*

Year 2011		*Projected Expenditures*	
BMP #	*BMP Name*	*(not including staff hours)*	*Staff Hours*
1. Utilities Operations			
	1.1 Operations Practices	*$50,000*	*200*
	1.2 Water Loss	*$0*	*150*
	1.3 Metering	*$350,000*	*1,500*
	1.4 Retail Conservation Pricing	*$0*	*0*
2. Education			
	2.1 Public Information Programs	*$5,000*	*150*
	2.2 School Education	*$2,200*	*960*
3. Residential		*$0*	*160*
4. CII		*$0*	*120*
5. Landscape		*$0*	*120*
	Total	***$407,200***	***3,360***

Year of Data	2008	Enter data year here

Table 1

Surface Water Supply

2008 Month	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (define) (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
Method	M1/M2	M1			M2		
January	103	4	0	0	0	0	107
February	58	214	0	0	0	0	272
March	4927	503	0	0	0	0	5,430
April	17935	805	0	0	0	0	18,740
May	20294	980	0	0	0	0	21,274
June	24443	1,301	0	0	0	0	25,744
July	25474	1,064	0	0	0	0	26,538
August	21116	1,054	0	0	0	0	22,170
September	13586	916	0	0	0	0	14,502
October	4571	832	0	0	0	0	5,403
November	73	394	0	0	0	0	467
December	10	343	0	0	0	0	353
TOTAL	132,590	8,410	0	0	0	0	141,000

Table 2

Ground Water Supply

2008 Month	Groundwater (acre-feet)	Urban Groundwate *(acre-feet)	Agric Groundwate *(acre-feet)
Method	M1/M3		E2
January	13	0	11
February	13	0	11
March	128	0	112
April	1,157	0	1,016
May	1,142	0	1,003
June	1,181	0	1,037
July	1,530	0	1,344
August	749	0	658
September	125	0	110
October	84	0	14
November	11	0	10
December	10	0	9
TOTAL	6,143	0	5,335

*normally estimated

Table 3

Total Water Supply

2008 Month	Surface Water Total (acre-feet)	Groundwater (acre-feet)	M&I Wastewater (acre-feet)	District Water (acre-feet)
Method			M3	
January	107	13	0	120
February	272	13	0	285
March	5,430	128	0	5,558
April	18,740	1,157	1,277	21,174
May	21,274	1,142	1,429	23,845
June	25,744	1,181	2,099	29,024
July	26,538	1,530	1,937	30,005
August	22,170	749	1,677	24,596
September	14,502	125	1,259	15,886
October	5,403	84	875	6,362
November	467	11	0	478
December	353	10	0	363
TOTAL	141,000	6,143	10,555	157,698

*Recycled M&I Wastewater is treated urban wastewater that is used for agriculture.

Table 4

Agricultural Distribution System

2008

Canal, Pipeline, Lateral, Reservoir	Length (feet)	Width (feet)	Surface Area (square feet)	Precipitation (acre-feet)	Evaporation (acre-feet)	Spillage (acre-feet)	Seepage (acre-feet)	Total (acre-feet)
Lined Canals	31,831	28	884,902	1.7	63.0	860	0	(921)
Unlined Canals	501,174	18	8,770,545	16.8	624.3	8,041	7,748	(16,397)
Pipelines	405,109	0	0	0.0	0.0	2,349	0	(2,349)
Lined Reservoirs	339	339	114,921	0.2	8.2	10	74	(92)
Unlined Reservoirs	289	289	83,521	0.2	5.9	0	74	(80)
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
	0	0	0	0.0	0.0	0	0	0
TOTAL				18.9	701.4	11,260	7,896	(19,838)

Urban Distribution System

2008 Area or Line	Length (feet)	Leaks (acre-feet)	Breaks (acre-feet)	Flushing/Fire (acre-feet)	Total (acre-feet)
M&I Irrigation	70,671	0	0	0	0
Ag Flatrate	83,496	0	0	0	0
M&I Flatrate	35,936	0	0	3.56	3.56
Public Water Systems	246,733	0	0	13.17	13.17
Non-Potable Water Systems	113,677	0	0	2.3	2.3
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
TOTAL	550,513	0	0	19.03	19.03

Table 5

Crop Water Needs

2008 Crop Name	Area (crop acres)	Crop ET (AF/Ac)	Leaching Requiremen (AF/Ac)	Cultural Practices (AF/Ac)	Effective Precipitation (AF/Ac)	Appl. Crop Water Use (acre-feet)
Alfalfa	7,978	3.76	0.1	0.0	0.0	30,875
Pasture	3,213	3.87	0.1	0.0	0.0	12,788
Sudan Grass	3,147	3.87	0.1	0.0	0.0	12,525
Field Corn	2,726	2.56	0.1	0.0	0.0	7,278
Tomatoes	2,529	2.42	0.1	0.0	0.0	6,398
Sunflowers	2,494	2.36	0.1	0.0	0.0	6,160
Grapes	2,236	3.44	0.1	0.0	0.0	7,938
Walnuts	2,200	3.40	0.1	0.0	0.0	7,722
Almonds	1,225	3.30	0.1	0.0	0.0	4,177
Wheat	1,200	1.73	0.1	0.0	0.6	1,488
Beans	1,073	2.35	0.1	0.0	0.0	2,640
Truck Farm	981	2.01	0.1	0.0	0.0	2,080
Hay	976	3.76	0.1	0.0	0.0	3,777
Turf Farm	634	4.39	0.1	0.0	0.0	2,853
Cucumbers	396	1.91	0.0	0.0	0.0	756
Curcurbit	396	1.91	0.1	0.0	0.0	800
Prunes/Plums	369	3.23	0.1	0.0	0.0	1,232
Sweet Corn	336	2.56	0.1	0.0	0.0	897
Safflower	266	2.36	0.1	0.0	0.0	657
Nursery	175	3.23	0.1	0.0	0.0	585
Peaches	115	3.27	0.1	0.0	0.0	389
All Other	2,480	2.80	0.1	0.0	0.0	7,217
Crop Acres	37,145					121,232

Total Irrig. Acres 37,145 (If this number is larger than your known total, it may be due to double cropping)

Table 6

2008 District Water Inventory

Water Supply	Table 3		157,698
Riparian ET	(Distribution and Drain)	minus	887
Groundwater recharge	(intentional - ponds, injection	minus	0
Seepage	Table 4	minus	7,895
Evaporation - Precipitation	Table 4	minus	683
Spillage	Table 4	minus	11,260
Leaks, Breaks, Flushing / Fire	Table 4	minus	19
Transfers/trades/wheeling		plus/minus	(2,168)
Wholesale (urban)		minus	0
Wholesale (agricultural)		minus	0
Water Available for sale to customers			134,786
2008 Actual Agricultural Water Sales	From District Sales Records		131,488
Private Groundwater	Table 2	plus	5,335
Crop Water Needs	Table 5	minus	121,232
Drainwater outflow	(tail and tile not recycled)	minus	6,255
Percolation from Agricultural Land	(calculated)		9,336
2008 M&I Actual Water Sales	From District Records		2,343
Inside Use	Feb urban use x 12		1,057
Landscape / Outside Use	(calculated)		1,286

Table 7

Influence on Groundwater and Saline Sink

2008

Agric Land Deep Perc + Seepage + Recharge - Groundwater Pumping = District Influence on	11,088
Estimated actual change in ground water storage, including natural recharge)	0
Irrigated Acres (from Table 5)	37,145
Irrigated acres over a perched water table	0
Irrigated acres draining to a saline sink	0
Portion of percolation from agri seeping to a perched water table	0
Portion of percolation from agri seeping to a saline sink	0
Portion of On-Farm Drain water flowing to a perched water table/saline sink	0
Portion of Dist. Sys. seep/leaks/spills to perched water table/saline sink	0
Total (AF) flowing to a perched water table and saline sink	0

Table 8

Annual Water Quantities Delivered Under Each Right or Contract

Year	Federal Ag Water (acre-feet)	Federal non-Ag Water. (acre-feet)	State Water (acre-feet)	Local Water (acre-feet)	Other Water (define) (acre-feet)	Upslope Drain Water (acre-feet)	Total (acre-feet)
1999	123,870	11,073	0	0	0	0	134,943
2000	123,839	12,055	0	0	0	0	135,894
2001	124,852	2,792	0	0	0	0	127,644
2002	125,920	2,811	0	0	0	0	128,731
2003	99,200	2,706	0	0	0	0	101,906
2004	124,723	2,426	0	0	0	0	127,149
2005	108,896	2,340	0	0	0	0	111,236
2006	95,847	2,441	0	0	0	0	98,288
2007	125,856	3,251	0	0	0	0	129,107
2008	132,590	8,410	0	0	0	0	141,000
Total	1,185,593	50,305	0	0	0	0	1,235,898
Average	118,559	5,031	0	0	0	0	123,590

Attachment A: District Facilities Map

See M-1, Supp. D

See M-1, Supp. A

SCALE: 1" = 1/4 MILE

LEGEND

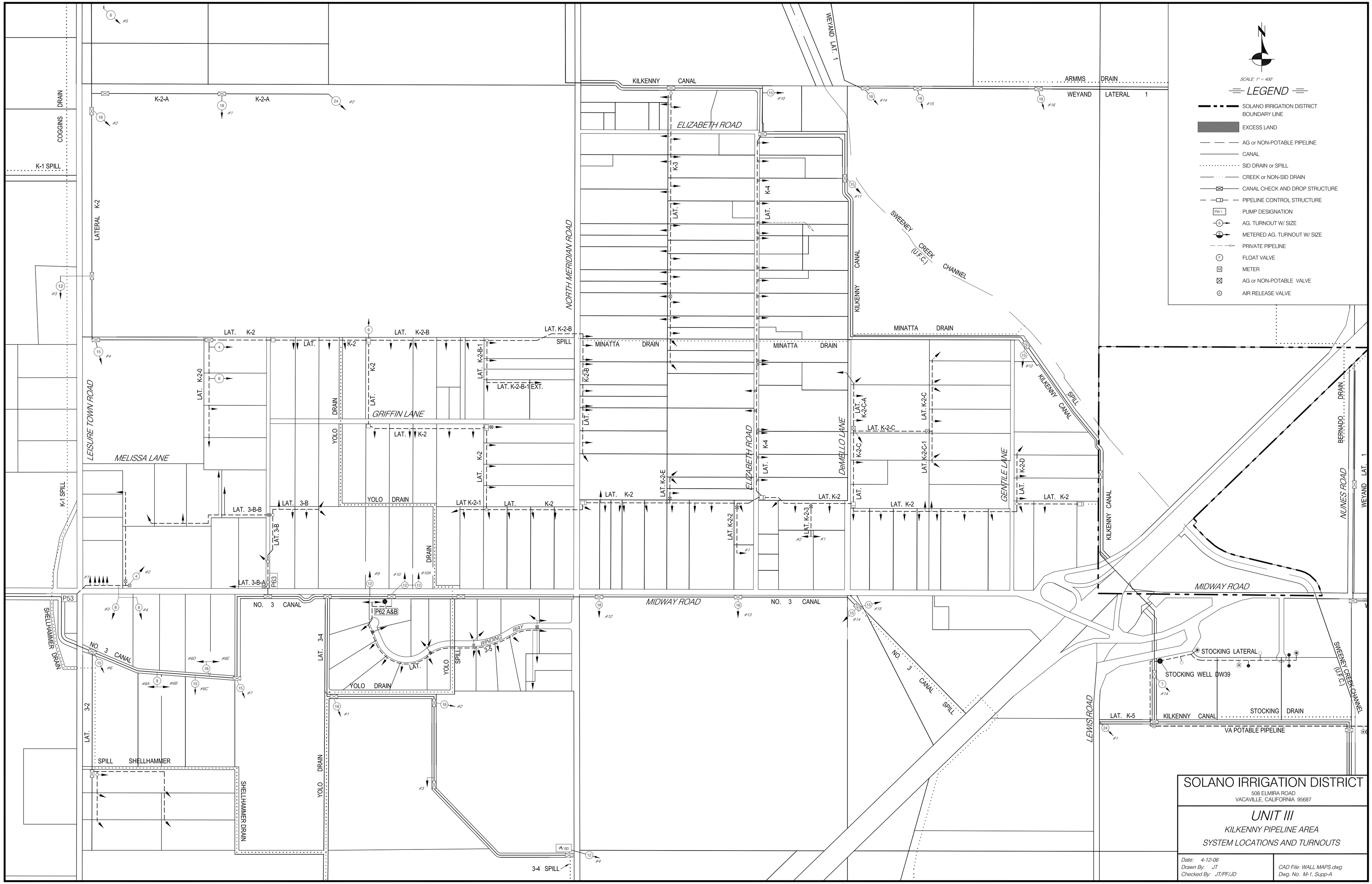
- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- EXCESS LAND
- AG or NON-POTABLE PIPELINE
- CANAL
- SID DRAIN or SPILL
- CREEK or NON-SID DRAIN
- CANAL CHECK AND DROP STRUCTURE
- PIPELINE CONTROL STRUCTURE
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE
- FLOAT VALVE
- METER
- AG or NON-POTABLE VALVE
- AIR RELEASE VALVE

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT I
(SYSTEM LOCATION & TURNOUTS)
INCLUDING NORTHERN PART OF
UNIT III

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-1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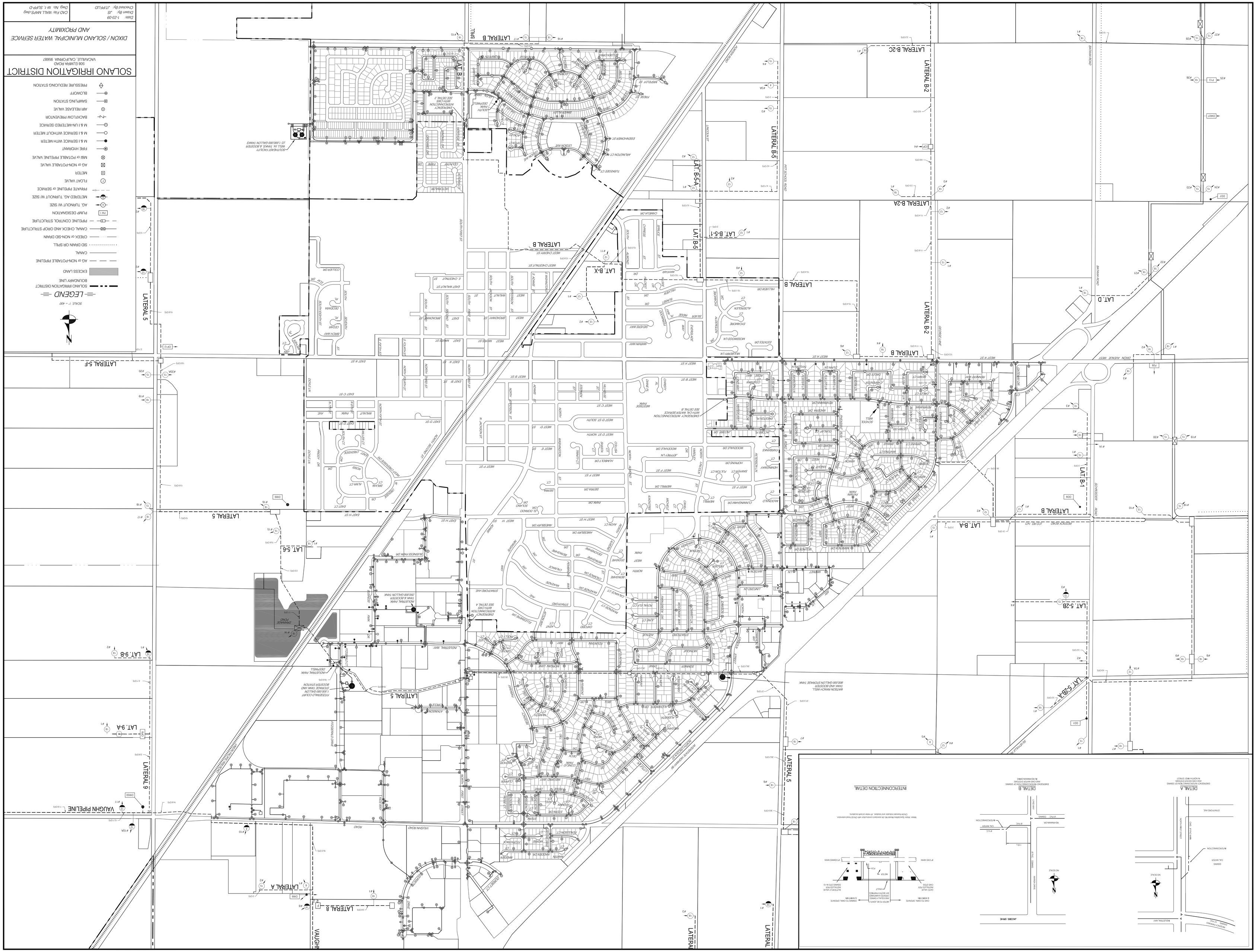
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
KILKENNY CANAL
ARMMS DRAIN
WEYAND LATERAL 1
WEYAND LAT. 1
ELIZABETH ROAD
NORTH MERIDIAN ROAD
SWEENEY CREEK (U.F.C.) CHANNEL
MINATTA DRAIN
GRIFFIN LANE
MELISSA LANE
LEISURE TOWN ROAD
COGGINS DRAIN
K-1 SPILL
LATERAL K-2
K-2-A
LAT. K-2
LAT. K-2-B
LAT. K-2-B-1
LAT. K-2-B-1 EXT.
LAT. K-2-0
LAT. K-2-C
LAT. K-2-C-1
LAT. K-2-C-A
LAT. K-2-D
LAT. K-2-E
LAT. K-2-1
LAT. K-2-2
LAT. K-2-3
LAT. K-3
LAT. K-4
LAT. K-5
LAT. 3-B
LAT. 3-B-B
LAT. 3-B-A
LAT. 3-2
LAT. 3-4
LAT. 3-5
YOLO DRAIN
SPILL
DeMELLO LANE
GENTILE LANE
BERNADO DRAIN
NUNES ROAD
MIDWAY ROAD
NO. 3 CANAL
WINDING WAY
P62 A&B
P63
P53
SHELLHAMMER DRAIN
SHELLHAMMER
3-4 SPILL
STOCKING LATERAL
STOCKING WELL DW39
STOCKING DRAIN
VA POTABLE PIPELINE
LEWIS ROAD
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT III
KILKENNY PIPELINE AREA
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-1, Supp-A


SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
DIXON / SOLANO MUNICIPAL WATER SERVICE
AND PROXIMITY
Date: 1-23-09
Drawn By: JS
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg No. M-1, SUPP-D
LEGEND
SCALE: 1" = 400'
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
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FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
M & I UN-METERED SERVICE
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
LATERAL 5
LATERAL 9
LATERAL A
LATERAL B
LATERAL B-2
LATERAL B-2A
LATERAL B-2C
LAT. B-5
LAT. B-5-A
LAT. B-5-1
LAT. B-X
LAT. D
LAT. B-1
LAT. B-A
LAT. 5-6
LAT. 5-2B
LAT. 5-2B-A
LAT. 9-A
LAT. 9-B
VAUGHN PIPELINE
INTERCONNECTION DETAIL
DETAIL A
DETAIL B

PUTAH CREEK

STATE HIGHWAY 128

DEEPWELL
DW 47
EL. 140'

QUAIL CANYON
LAT. A

VICKERY LN.

RIDGE

PINES

DIGGER

PUTAH CREEK ROAD

80,000 GALLON
STORAGE TANK
EL. 520' BASE

LATERAL 1

QUAIL CANYON LATERAL

PLEASANTS VALLEY ROAD

SCALE: 1" = 500'

LEGEND

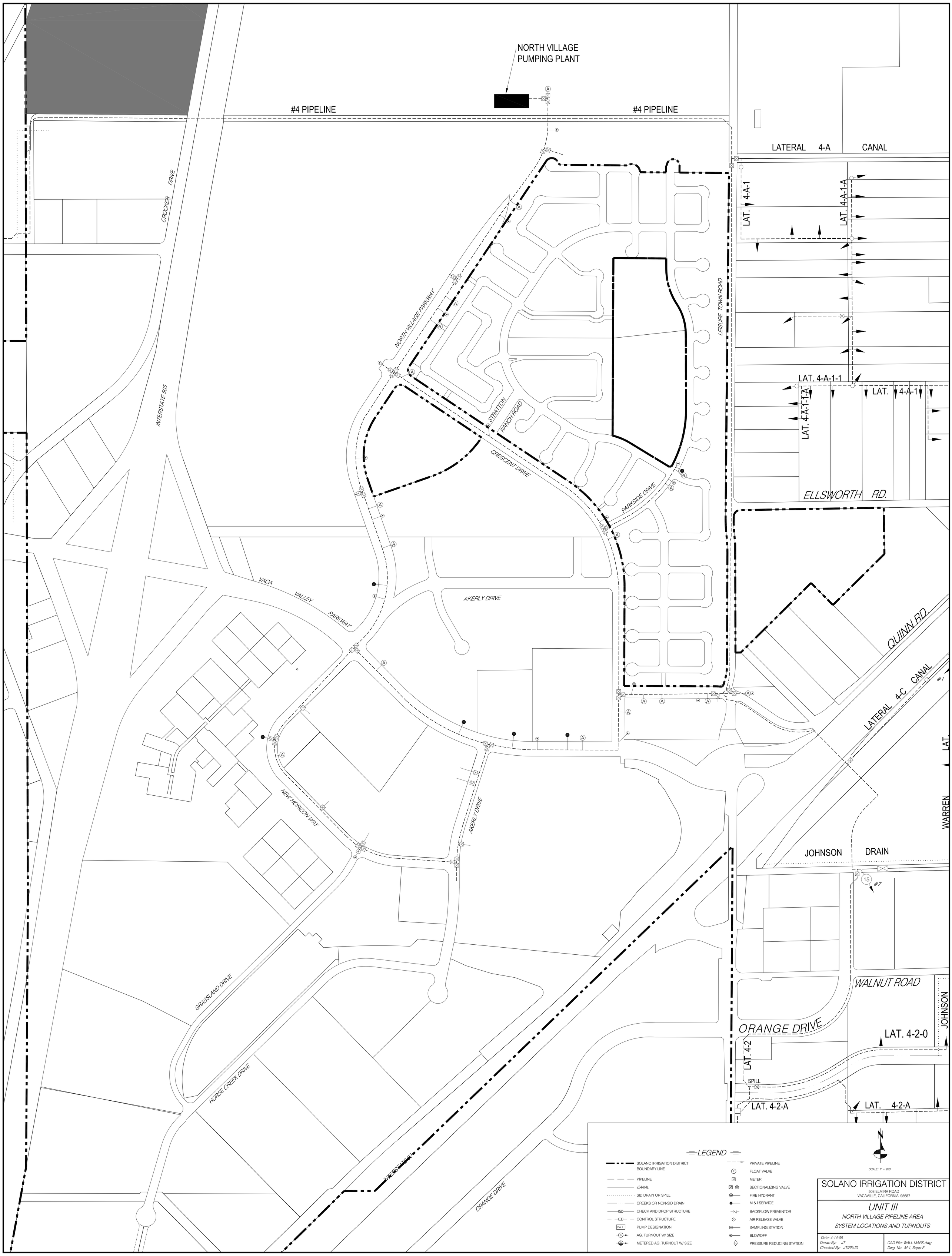
- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- EXCESS LAND
- AG or NON-POTABLE PIPELINE
- CANAL
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- CANAL CHECK AND DROP STRUCTURE
- PIPELINE CONTROL STRUCTURE
- PW 1 PUMP DESIGNATION
- 6 AG. TURNOUT W/ SIZE
- 6 METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE or SERVICE
- F FLOAT VALVE
- M METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- U M & I UN-METERED SERVICE
- BACKFLOW PREVENTOR
- A AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

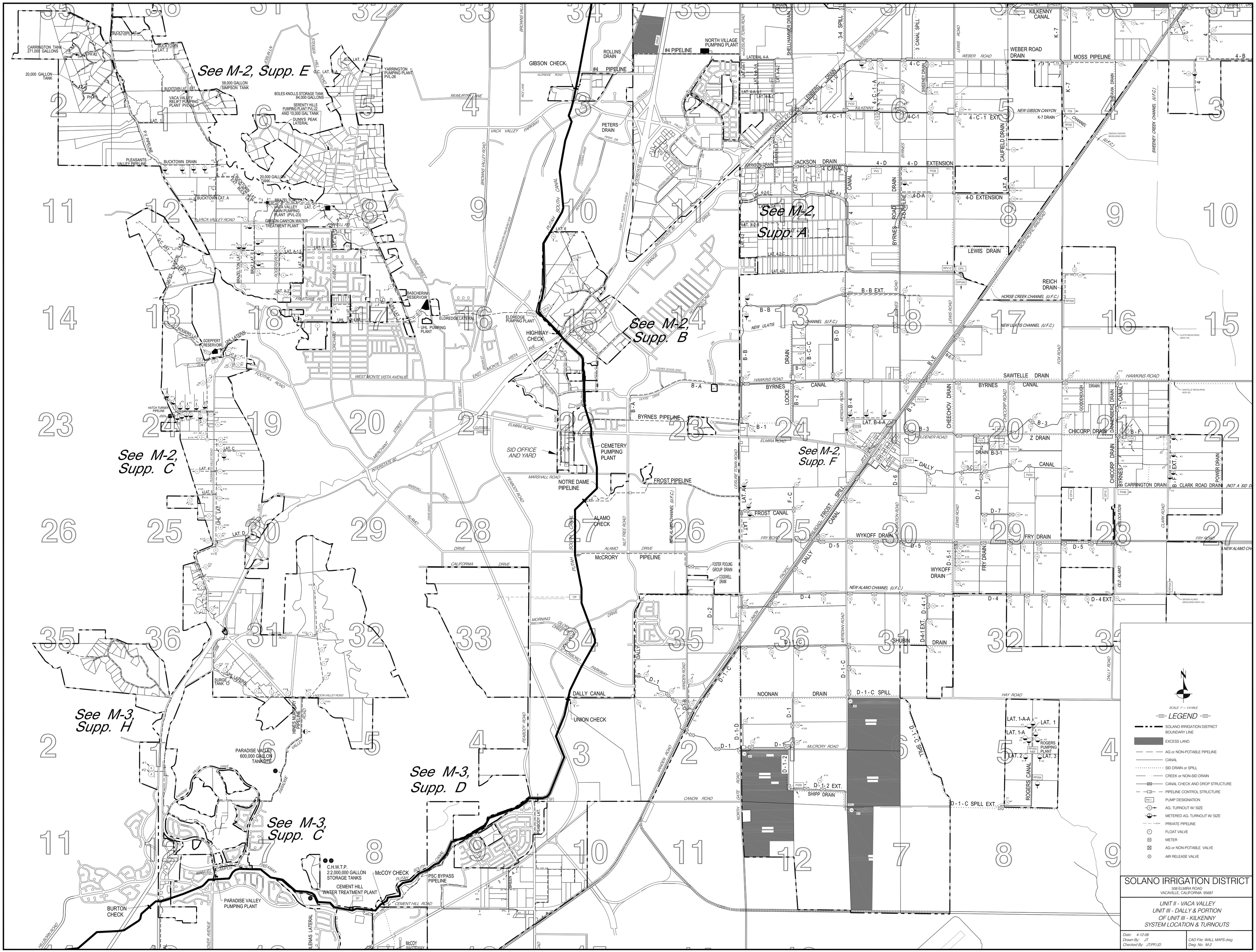
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

QUAIL CANYON
SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-1, Supp-E


NORTH VILLAGE PUMPING PLANT
#4 PIPELINE
#4 PIPELINE
LATERAL 4-A
CANAL
LAT. 4-A-1
LAT. 4-A-1-A
LAT. 4-A-1-1
LAT. 4-A-1-1-A
LAT. 4-A-1
ELLSWORTH RD.
LEISURE TOWN ROAD
CROCKER DRIVE
INTERSTATE 505
NORTH VILLAGE PARKWAY
STRATTON RANCH ROAD
CRESCENT DRIVE
PARKSIDE DRIVE
VACA VALLEY PARKWAY
AKERLY DRIVE
QUINN RD.
LATERAL 4-C CANAL
#1
LAT.
WARREN
NEW HORIZON WAY
AKERLY DRIVE
JOHNSON DRAIN
15
#7
GRASSLAND DRIVE
WALNUT ROAD
JOHNSON
ORANGE DRIVE
LAT. 4-2-0
LAT. 4-2
SPILL
LAT. 4-2-A
LAT. 4-2-A
HORSE CREEK DRIVE
INTERSTATE 80
ORANGE DRIVE
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
PIPELINE
CANAL
SID DRAIN OR SPILL
CREEKS OR NON-SID DRAIN
CHECK AND DROP STRUCTURE
CONTROL STRUCTURE
PW 1
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
SECTIONALIZING VALVE
FIRE HYDRANT
M & I SERVICE
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
N
SCALE: 1" = 200'
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT III
NORTH VILLAGE PIPELINE AREA
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-14-05
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-1, Supp-F


See M-2, Supp. E
See M-2, Supp. A
See M-2, Supp. B
See M-2, Supp. C
See M-2, Supp. F
See M-3, Supp. H
See M-3, Supp. D
See M-3, Supp. C
SCALE: 1" = 1/4 MILE
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II - VACA VALLEY
UNIT III - DALLY & PORTION
OF UNIT III - KILKENNY
SYSTEM LOCATION & TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2

NORTH VILLAGE PUMPING PLANT

#4 PIPELINE

#4 PIPELINE

LATERAL 4-A CANAL

SHELLHAMMER DRAIN

SPILL

LAT. 4-A-1

LAT. 4-A-1-A

LAT. 4-A-2

LAT.

MILLS LN.

LAT. 4-A-1-1

LAT. 4-A-1-CA

LAT. 4-A-1

ELLSWORTH RD.

NEW

LENBERG DRAIN

LATERAL 4-C

KILKENNY ROAD

PV32

LAT 4-C-1

LATERAL 4-C-1

QUINN RD.

LATERAL 4-C CANAL

WILLOW ROAD

LAT.

WARREN

JOHNSON DRAIN

NO. 4 CANAL

JACKSON DRAIN

SPILL

DRAIN

4-3

WALNUT ROAD

JOHNSON

LAT.

ORANGE DRIVE

LAT. 4-2-0

HORSE CREEK CHANNEL (U.F.C.)

LAT. 4-3-A

LAT. 4-3

LAT. 4-3

JACKSON DRAIN

NO. 4 CANAL

LAT. 4-2

SPILL

LAT. 4-2-A

LAT. 4-2-A

LAT. 4-2-B

POPLAR ROAD

LAT. 4-2-B

LAT. 4-2-B-A

LAT. 4-2-B

HORSE CREEK CHANNEL (U.F.C.)

NO. 4 CANAL

SPILL

SPILL

LAT. 4-2

LEISURE TOWN ROAD

WILLOW ROAD

LAT. 4-2-C

MAPLE ROAD

SPILL

LAT. 4-2

LAT. 4-2

SPILL

CROCKER DRIVE

INTERSTATE 505

NORTH VILLAGE PARKWAY

STRATTON RANCH ROAD

CRESCENT DRIVE

PARKSIDE DRIVE

VACA VALLEY PARKWAY

AKERLY DRIVE

NEW HORIZON WAY

AKERLY DRIVE

GRASSLAND DRIVE

HORSE CREEK DRIVE

ORANGE DRIVE

SEQUOIA DRIVE

YELLOWSTONE DRIVE

LATERAL B-B

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- EXCESS LAND
- AG or NON-POTABLE PIPELINE
- CANAL
- SID DRAIN OR SPILL
- CREEKS or NON-SID DRAIN
- CANAL CHECK AND DROP STRUCTURE
- PIPELINE CONTROL STRUCTURE
- PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE
- FLOAT VALVE
- METER
- AG or NON-POTABLE VALVE
- FIRE HYDRANT
- M & I SERVICE
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

SCALE: 1" = 300'

SOLANO IRRIGATION DISTRICT

508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT III

KILKENNY PIPELINE AREA

SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-A

LATERAL 6
15 #1
12 #2
12 #3
12 #4
OPV5
HPVL5
ELDREDGE PUMPING PLANT
HIGHWAY CHECK
ORANGE DR.
NUT TREE PARKWAY
HELEN POWER DR.
NUT TREE ROAD
YELLOWSTONE DR.
E. MONTE VISTA AVE.
INTERSTATE 80
HARBISON DR.
BURTON DR.
ALLISON DRIVE
ULATIS
DRIVE
HPVL2
NUT TREE ROAD
BYRNES LATERAL B-A
BYRNES PIPELINE
AGEAN WAY
CITY OF VACAVILLE PIPELINE
ELMIRA ROAD
CEMETERY PUMPING PLANT
HPVL14
MARSHALL ROAD
NOTRE DAME PIPELINE
FROST PIPELINE
ALAMO CHECK

SCALE: 1" = 400'

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- AG. TURNOUT
- PRIVATE PIPELINE or SERVICE
- METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

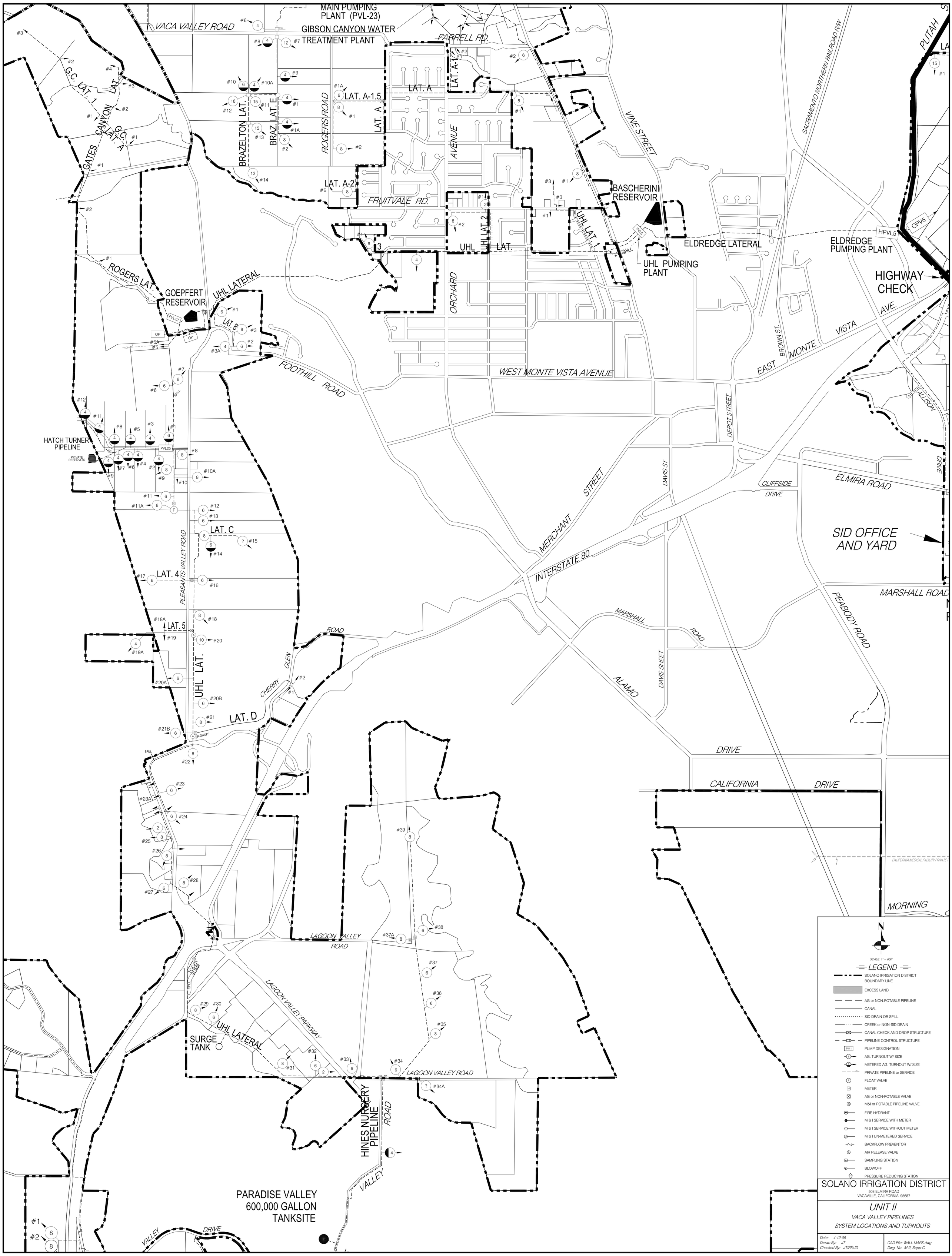
SOLANO IRRIGATION DISTRICT

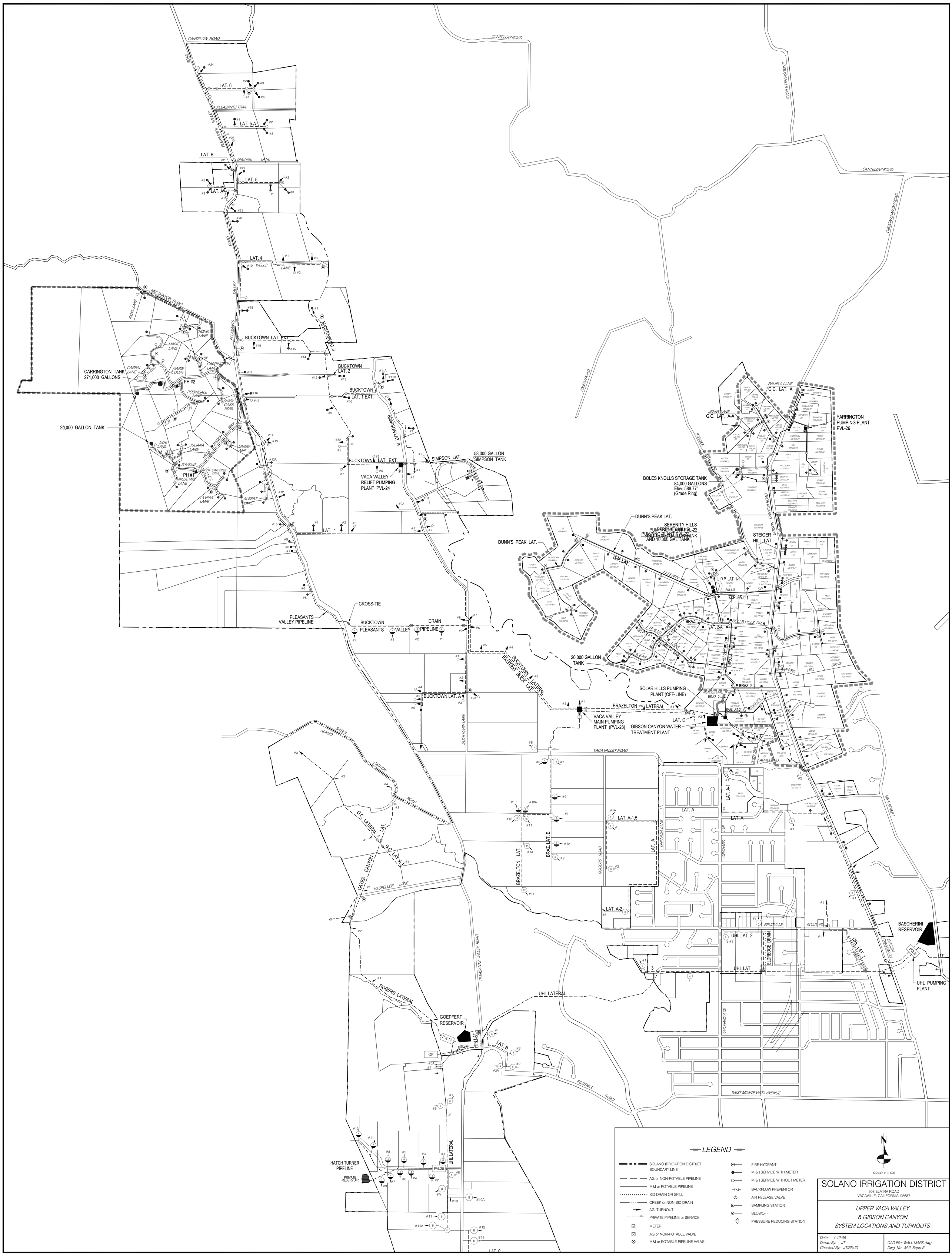
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

ALLISON / ULATIS
PIPELINE
SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-B


MAIN PUMPING PLANT (PVL-23)
GIBSON CANYON WATER TREATMENT PLANT
VACA VALLEY ROAD
FARRELL RD.
LAT. A-1
LAT. A
LAT. A-1.5
LAT. A
BRAZELTON LAT.
BRAZ. LAT. E
ROGERS ROAD
G.C. LAT. 1
CANYON LAT.
G.C. LAT. A
GATES
LAT. A-2
FRUITVALE RD.
AVENUE
VINE STREET
SACRAMENTO NORTHERN RAILROAD R/W
BASCHERINI RESERVOIR
UHL LAT. 2
UHL LAT. 1
UHL LAT.
ELDREDGE LATERAL
UHL PUMPING PLANT
ELDREDGE PUMPING PLANT
HPVL5
OPV5
HIGHWAY CHECK
ROGERS LAT.
GOEPFERT RESERVOIR
UHL LATERAL
LAT. B
ORCHARD
FOOTHILL ROAD
WEST MONTE VISTA AVENUE
EAST MONTE VISTA AVE.
BROWN ST.
ALLISON DRIVE
DEPOT STREET
HATCH TURNER PIPELINE
PRIVATE RESERVOIR
PVL25
LAT. C
PLEASANTS VALLEY ROAD
LAT. 4
LAT. 5
UHL LAT.
GLEN ROAD
CHERRY
LAT. D
BLOWOFF
SPILL
DAVIS ST
MERCHANT STREET
INTERSTATE 80
CLIFFSIDE DRIVE
ELMIRA ROAD
SID OFFICE AND YARD
MARSHALL ROAD
PEABODY ROAD
ALAMO
DAVIS SHEET
DRIVE
CALIFORNIA DRIVE
CALIFORNIA MEDICAL FACILITY PRIVATE R
MORNING
LAGOON VALLEY ROAD
LAGOON VALLEY PARKWAY
UHL LATERAL
SURGE TANK
HINES NURSERY PIPELINE
VALLEY ROAD
PARADISE VALLEY 600,000 GALLON TANKSITE
VALLEY DRIVE
SCALE: 1" = 600'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
M & I UN-METERED SERVICE
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
VACA VALLEY PIPELINES
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-C


CANTELOW ROAD
ENGLISH HILLS ROAD
GIBSON CANYON ROAD
LAT. 6
PLEASANTS TRAIL
LAT. 5-A
LAT. B
BREHME LANE
LAT. 5
LAT. A
LAT. 4
WELLS LANE
PLEASANTS VALLEY ROAD
BUCKTOWN LAT. EXT.
BUCKTOWN LAT. 3
BUCKTOWN LAT. 2
BUCKTOWN LAT. 1 EXT.
SIMPSON LAT. A
SIMPSON LAT.
58,000 GALLON SIMPSON TANK
VACA VALLEY RELIFT PUMPING PLANT PVL-24
LAT. 1
MIX CANYON ROAD
CARRINGTON TANK 271,000 GALLONS
PH #2
PH #1
20,000 GALLON TANK
JOSLIN ROAD
STEIGER HILL RD.
PAMELA LANE
G.C. LAT. A
JENNY LANE
G.C. LAT. A-A
YARRINGTON PUMPING PLANT PVL-26
BOLES KNOLLS STORAGE TANK 84,000 GALLONS Elev. 588.77' (Grade Ring)
DUNN'S PEAK LAT.
SERENITY HILLS PUMPING PLANT PVL-22
STEIGER HILL LAT.
D.P. LAT.
D.P. LAT. 1-1
D.P. LAT. 1
SOLAR HILLS DR.
LAT. 2-A
LAT. 2-B
BRAZ. LAT. 2-A-1
BRAZ. 2-2
SOLAR HILLS PUMPING PLANT (OFF-LINE)
20,000 GALLON TANK
CROSS-TIE
PLEASANTS VALLEY PIPELINE
BUCKTOWN PLEASANTS VALLEY DRAIN PIPELINE
BUCKTOWN LAT. A
BUCKTOWN LATERAL EXISTING BUCK LAT.
BRAZELTON LATERAL
VACA VALLEY MAIN PUMPING PLANT (PVL-23)
LAT. C
GIBSON CANYON WATER TREATMENT PLANT
VACA VALLEY ROAD
FARRELL RD.
LAT. A-1
LAT. A
LAT. A-1.5
LAT. A-2
BRAZELTON LAT.
BRAZ LAT. E
ROGERS ROAD
GRANADA LANE
ORCHARD AVE.
VINE STREET
BASCHERINI RESERVOIR
UHL PUMPING PLANT
UHL LAT. 2
UHL LAT. 1
ELDREDGE DRAIN
UHL LAT.
UHL LATERAL
GATES CANYON ROAD
G.C. LATERAL 1 LAT.
G.C. LAT. A
HESPELLER LANE
PLEASANTS VALLEY ROAD
ROGERS LATERAL
GOEPFERT RESERVOIR
PVL12
VIN LAT.
LAT. B
OP
FOOTHILL ROAD
WEST MONTE VISTA AVENUE
HATCH TURNER PIPELINE
PRIVATE RESERVOIR
PVL25
LAT. C
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
AG or NON-POTABLE PIPELINE
M&I or POTABLE PIPELINE
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
AG. TURNOUT
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SCALE: 1" = 600'
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UPPER VACA VALLEY
& GIBSON CANYON
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-E

LAT. B-4

#2

15

DW 46
SUPPLY PUMP

60,000 GALLON
STORAGE TANK

BOOSTER PUMP
AND MANIFOLD

PRESSURE
TANK

12

#3

LAT. B-3

HOLDENER ROAD

MERIDIAN ROAD

ELMIRA ROAD

FIRST STREET

HAZEN STREET

VACA ST.

EDWARDS ST. 'A' STREET

EDWARDS STREET

'B' STREET

HAZEN STREET

CALIFORNIA PACIFIC ROAD

UNION PACIFIC RAILROAD

ELMIRA ROAD

VACA STATION ROAD

WATER STREET

Alamo Creek

S.I.D. FROST SPILL

S.I.D. DALLY CANAL

S.I.D. DALLY CANAL

N

SCALE: 1" = 100'

LEGEND

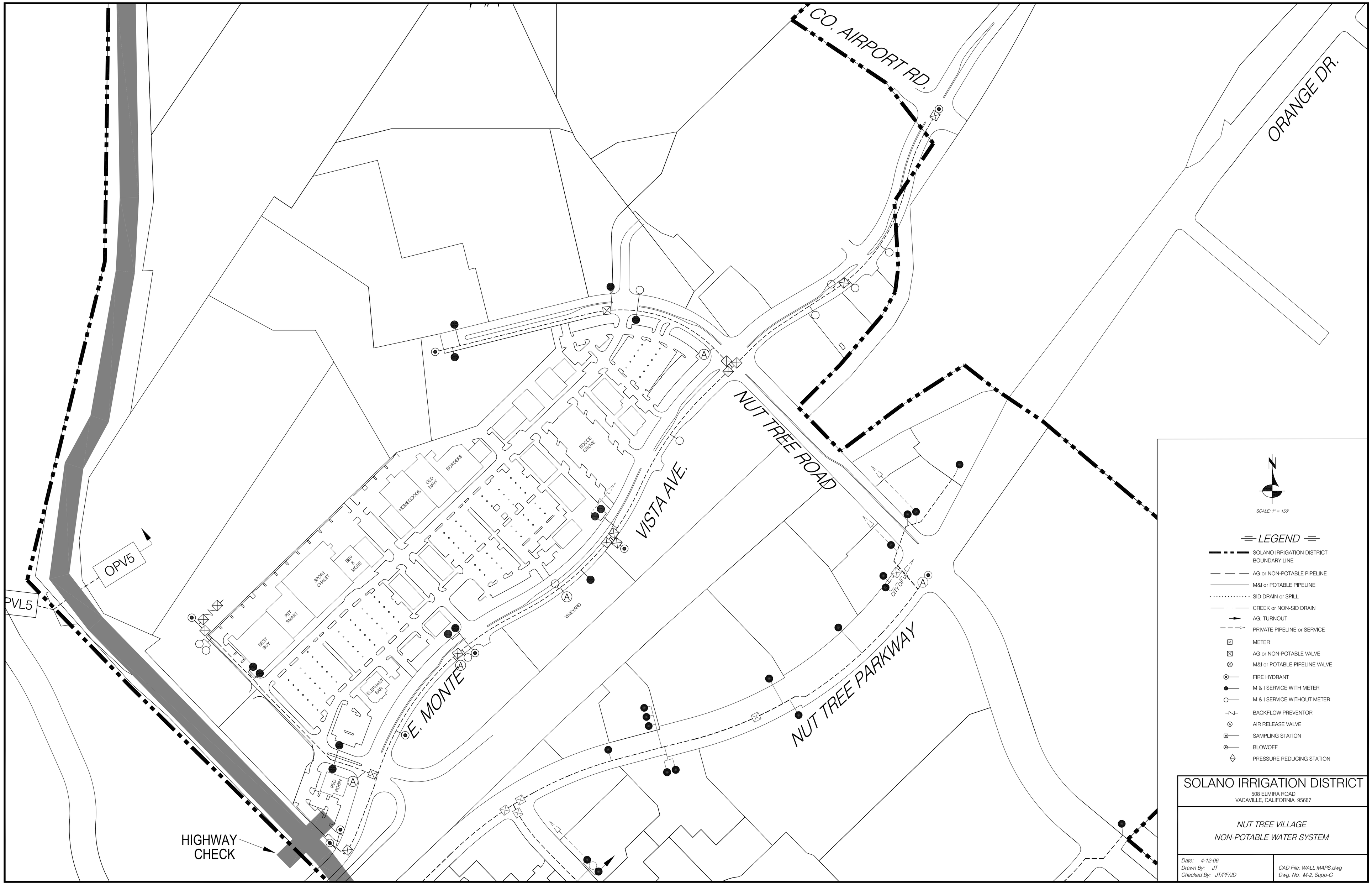
- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN or SPILL
- CREEK or NON-SID DRAIN
- AG. TURNOUT
- PRIVATE PIPELINE or SERVICE
- METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

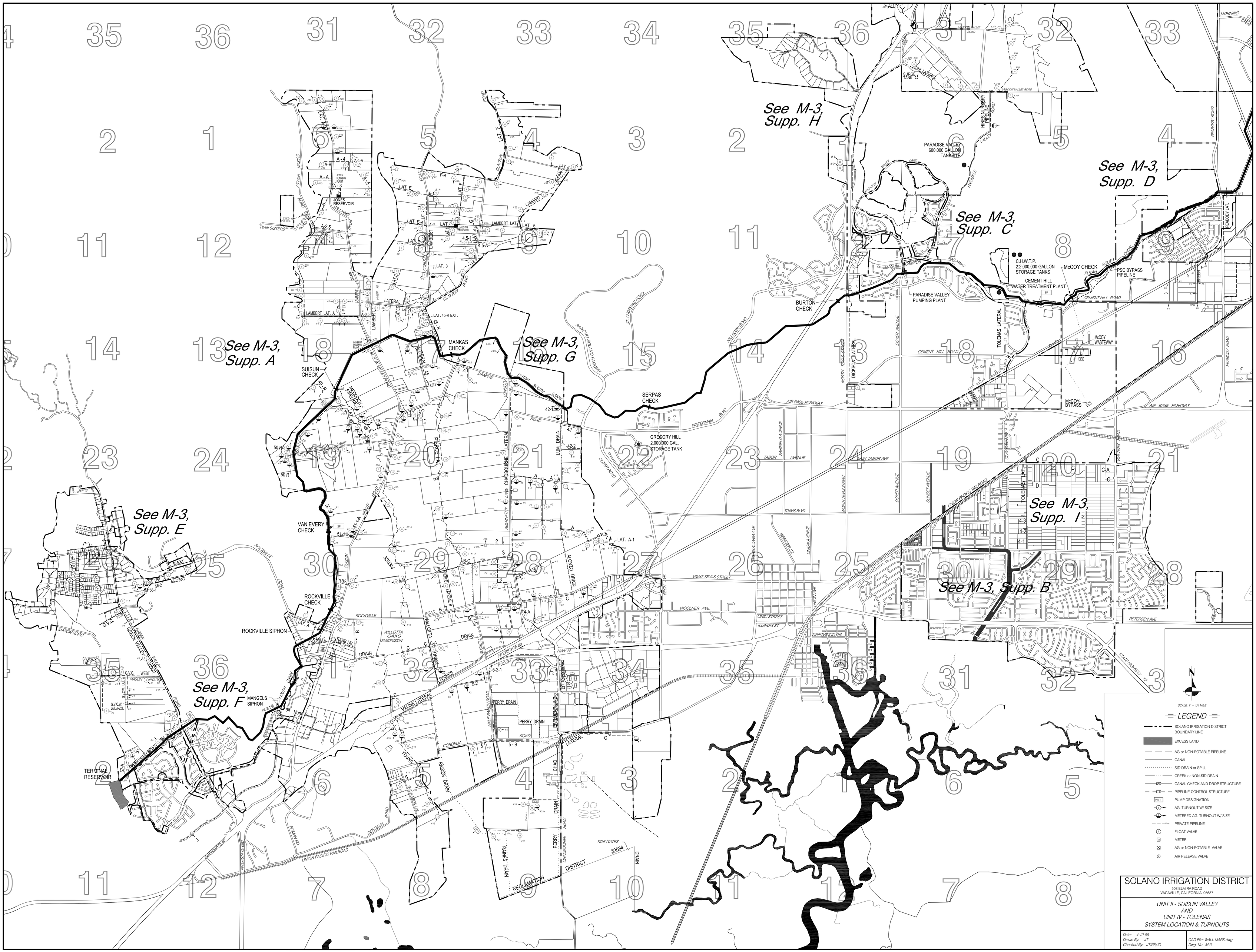
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

ELMIRA IMPROVEMENT DISTRICT
COMMUNITY WATER SYSTEM

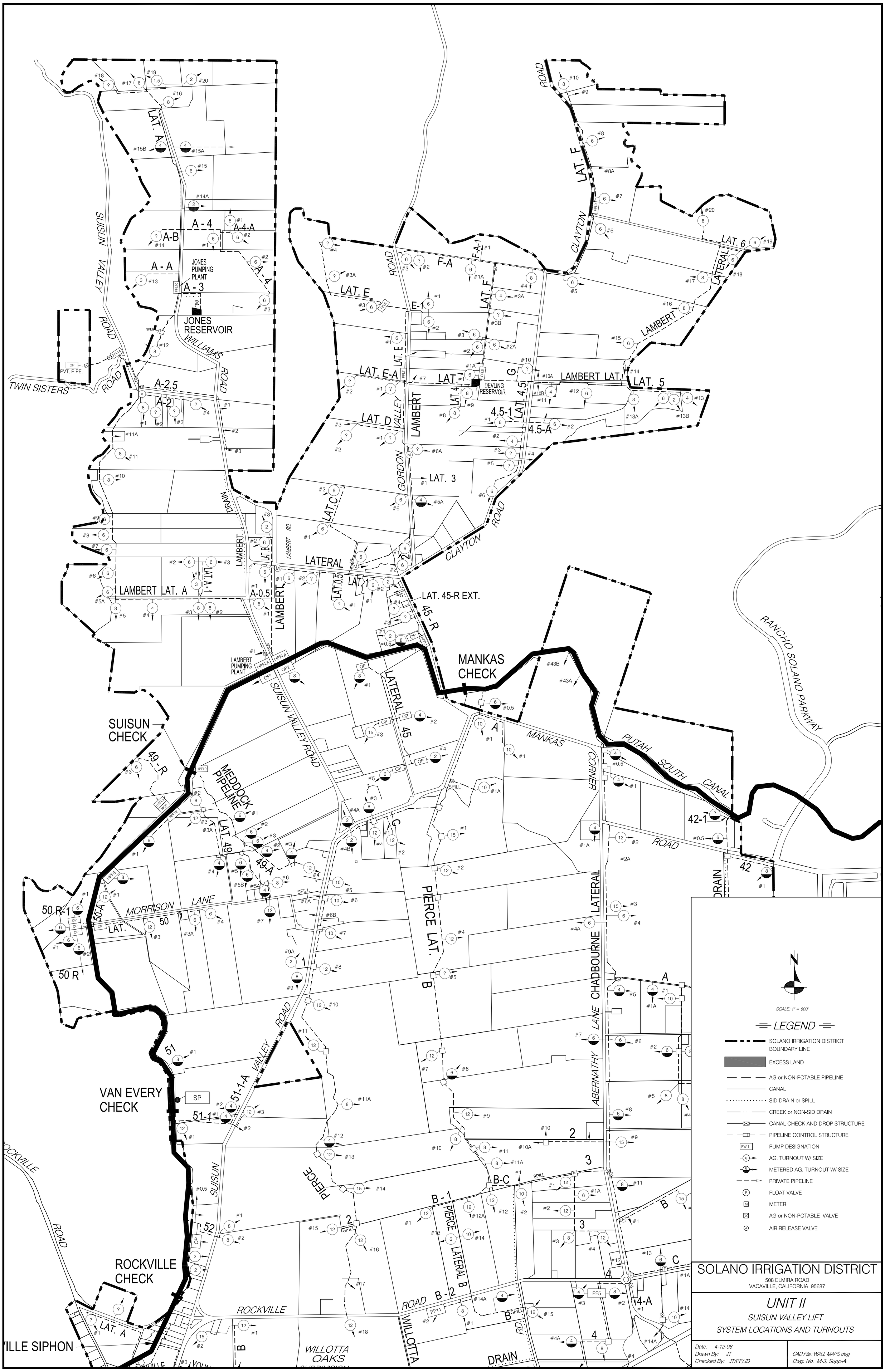
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

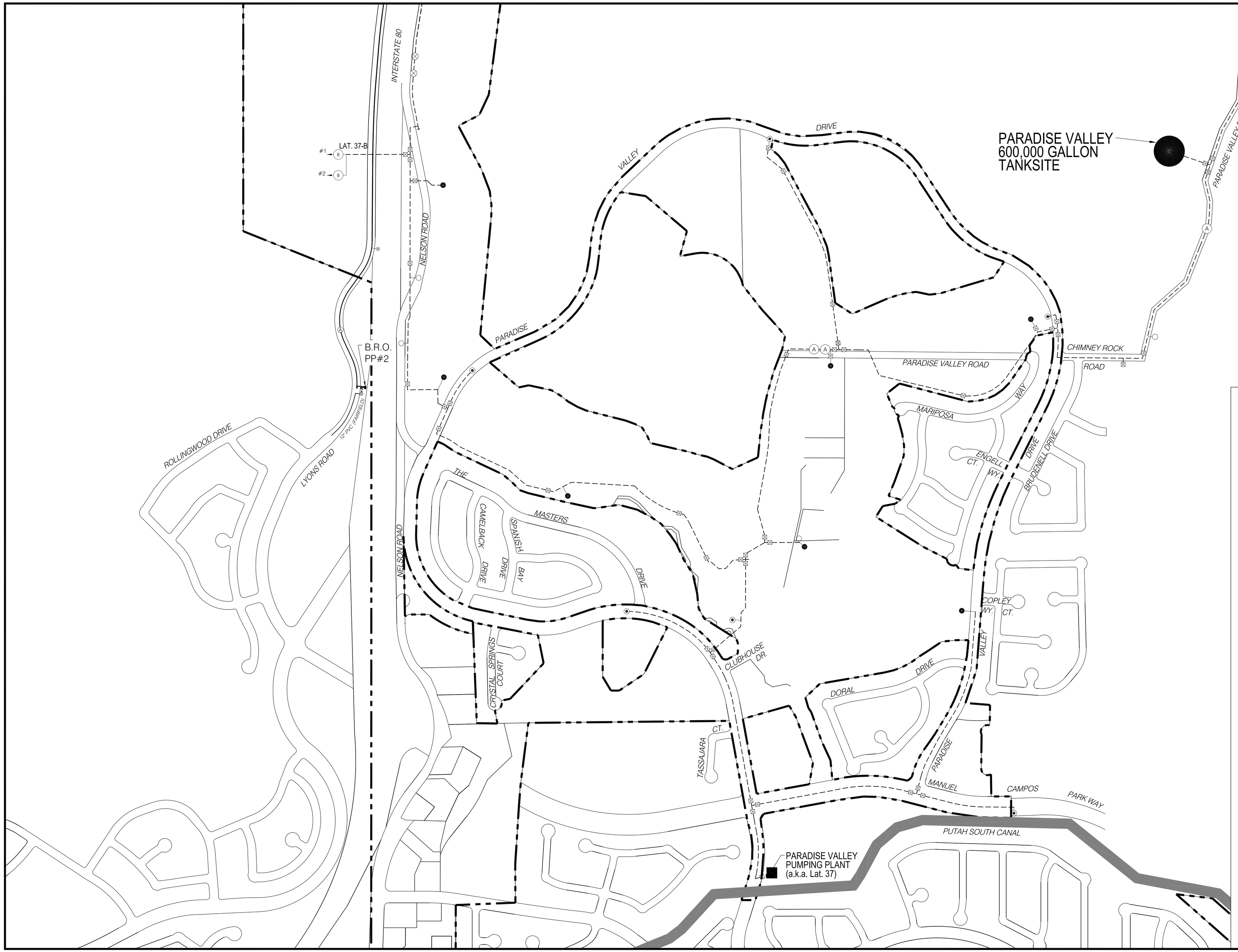
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-F


CO. AIRPORT RD.
ORANGE DR.
NUT TREE ROAD
VISTA AVE.
NUT TREE PARKWAY
E. MONTE
VINEYARD
CITY OF
OPV5
PVL5
HIGHWAY CHECK
BOCCE GROVE
BORDERS
OLD NAVY
HOMEGOODS
BEV & MORE
SPORT CHALET
PET SMART
BEST BUY
ELEPHANT BAR
RED ROBIN
SCALE: 1" = 150'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
AG or NON-POTABLE PIPELINE
M&I or POTABLE PIPELINE
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
AG. TURNOUT
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
NUT TREE VILLAGE
NON-POTABLE WATER SYSTEM
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-G



See M-3, Supp. A
See M-3, Supp. B
See M-3, Supp. C
See M-3, Supp. D
See M-3, Supp. E
See M-3, Supp. F
See M-3, Supp. G
See M-3, Supp. H
See M-3, Supp. I
SUISUN CHECK
MANKAS CHECK
SERPAS CHECK
BURTON CHECK
VAN EVERY CHECK
ROCKVILLE CHECK
ROCKVILLE SIPHON
MANGELS SIPHON
TERMINAL RESERVOIR
JONES RESERVOIR
PARADISE VALLEY 600,000 GALLON TANKSITE
PARADISE VALLEY PUMPING PLANT
C.H.W.T.P. 2:2,000,000 GALLON STORAGE TANKS
CEMENT HILL WATER TREATMENT PLANT
McCOY CHECK
PSC BYPASS PIPELINE
McCOY WASTEWAY
McCOY BYPASS
GREGORY HILL 2,000,000 GAL. STORAGE TANK
WILLOTTA OAKS SUBDIVISION
SCALE: 1" = 1/4 MILE
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II - SUISUN VALLEY
AND
UNIT IV - TOLENAS
SYSTEM LOCATION & TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3


SUISUN VALLEY ROAD
JONES PUMPING PLANT
JONES RESERVOIR
WILLIAMS ROAD
TWIN SISTERS ROAD
PVT. PIPE.
LAT. A
A - 4
A-4-A
A-B
A - A
A - 3
A-2.5
A-2
LAT. E
LAT. E-A
LAT. D
LAT. 3
LAT. F
F-A
F-A-1
E-1
LAT. 6
LATERAL
LAMBERT
CLAYTON ROAD
DEVLING RESERVOIR
LAT. 4
LAT. 4.5
4.5-1
4.5-A
LAMBERT LAT.
LAT. 5
GORDON VALLEY
LAT.C
LAT.B
LAMBERT LAT. A
LAT.A-1
A-0.5
LAT.0.5
LAT. 1
LAT. 45-R EXT.
45 - R
MANKAS CHECK
LAMBERT PUMPING PLANT
SUISUN CHECK
49 - R
MEDDOCK PIPELINE
LAT. 49
49-A
50 R-1
50-A
MORRISON LANE
LAT. 50
50 R
51
51-1-A
51-1
VAN EVERY CHECK
SP
52
ROCKVILLE CHECK
LAT. A
ROCKVILLE SIPHON
WILLOTTA OAKS
WILLOTTA DRAIN
PIERCE LAT. B
PIERCE LATERAL B
B-C
B - 1
B - 2
MANKAS CORNER ROAD
PUTAH SOUTH CANAL
RANCHO SOLANO PARKWAY
42-1
42
CHADBOURNE LATERAL
ABERNATHY LANE
4-A
SCALE: 1" = 800'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
SUISUN VALLEY LIFT
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-A



SCALE: 1" = 300'

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- EXCESS LAND
- AG or NON-POTABLE PIPELINE
- CANAL
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- CANAL CHECK AND DROP STRUCTURE
- PIPELINE CONTROL STRUCTURE
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE or SERVICE
- F FLOAT VALVE
- M METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- M & I UN-METERED SERVICE
- BACKFLOW PREVENTOR
- A AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

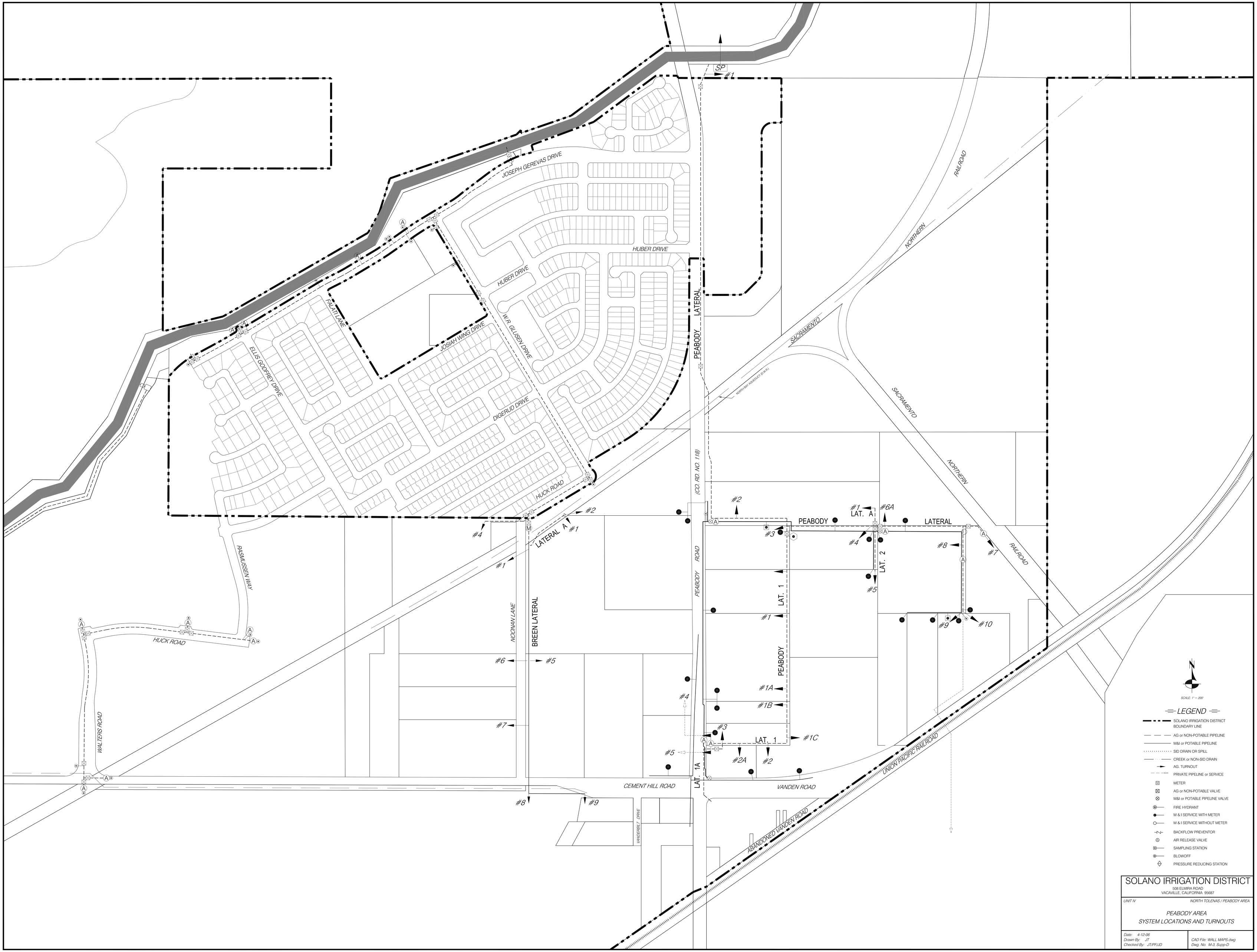
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT II — VACA VALLEY / LATERAL 37

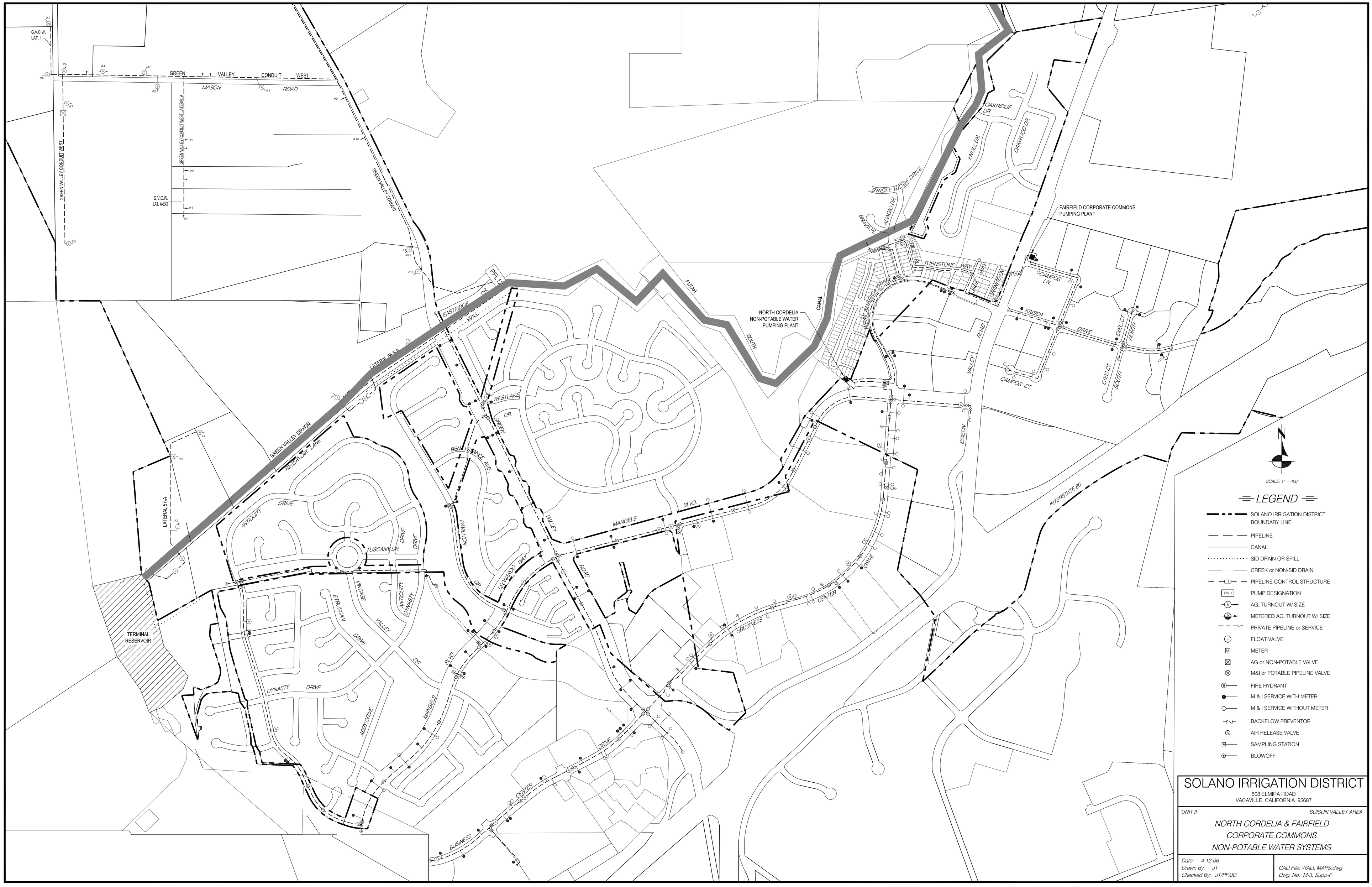
PARADISE VALLEY
SYSTEM LOCATIONS AND TURNOUTS

Date: 11-24-08
Drawn By: JS
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-C


SP #1
JOSEPH GEREVAS DRIVE
HUBER DRIVE
HUBER DRIVE
W.R. GLUSEN DRIVE
JOSIAH WING DRIVE
FALATTI LANE
ELLIS GODFREY DRIVE
DIGERUD DRIVE
HUCK ROAD
RASMUSSEN WAY
HUCK ROAD
WALTERS ROAD
NOONAN LANE
BREEN LATERAL
LATERAL A
PEABODY LATERAL
(CO. RD. NO. 118)
PEABODY ROAD
NORTHERN RAILROAD
SACRAMENTO
SACRAMENTO
NORTHERN RAILROAD
PEABODY LATERAL
LAT. A
LAT. 2
LAT. 1
LAT. 1
LAT. 1A
PEABODY
CEMENT HILL ROAD
VANDEN ROAD
VANDERBILT DRIVE
ABANDONED VANDEN ROAD
UNION PACIFIC RAILROAD
SCALE: 1" = 200'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
AG or NON-POTABLE PIPELINE
M&I or POTABLE PIPELINE
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
AG. TURNOUT
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT IV
NORTH TOLENAS / PEABODY AREA
PEABODY AREA
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-D

LAT. 56-F-H
LAT. 56-F-3
LAT. 56-F-EXT.
GREEN VALLEY ROAD
LAT. 56-F-2
LAT. 56-F-D
LAT. 56-F-EXT.
COUNTRY CLUB DRIVE
LAT. 56-F-C
LAT. 56-F-EXT.
PRIVATE ROAD
RESERVOIR
LATERAL
GREEN VALLEY RESERVOIR
GREEN VALLEY
LAT. 56-F-B-1
VALLEJO - SID CROSSTIE
LAT. 56-F-B
LAT. 56-F-B
LAT. 56-D EXT.
LAT. 56-F-A5
ROCKVILLE ROAD
CEREDA LANE
KINGS LN.
LAT. 56-F-A
GREEN VALLEY PUMPING PLANT (PFL 15)
EMERALD RIDGE LANE
DYNASTY LANE
LATERAL 56 EXT.
AMARAL COURT
LATERAL
CERRADA CIELO
CERRADA AZUL
PASEO ARBOLES
LAT. 56-D EXT.
G.V.M. LATERAL 5
G.V.O. LATERAL 15
GREEN ACRES
LAT. 56-G-1
LAT. 56-G-1-1
ACRES CT
LAT. 56-G
LATERAL 56-F
LATERAL 56-2 EXT.
LATERAL 56
LAT. 56-D-A
G.V.M. LATERAL 5
CALLE DEL CABALLO
WALNUT COURT
G.V.O. LAT. 14
G.V.O. LATERAL 15
LATERAL 56-E
VIA PAJARO
LAT. 4-1
LAT. 4-A
LAT. 4-2
LAT. 4
CAVALIER COURT
G.V.M. LATERAL 12
VIA PALO LINDA
G.V.O. LAT. 16
BALESTRA TURNOUT
LATERAL 56-D-A
G.V.R.E. PUMP STATION NO. 1 PFL -16
PEACH COURT
CHERRY COURT
LATERAL 56-D
LATERAL 56-D
BLOWOFF
735 GAL. TANK
SIEBE DRIVE
LAT. 56-D-A-A
G.V.R.E. PUMP STATION NO. 2 PFL-17
JENI LANE
DE LEU DRIVE
CEREDA PUMPING PLANT - PFL 11
G.V.C.C. PUMPING PLANT - PFL 20
SCALE: 1" = 200'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
SUISUN VALLEY LIFT
GREEN VALLEY
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-E



G.V.C.W. LAT. 1
GREEN VALLEY CONDUIT WEST
MASON ROAD
GREEN VALLEY CONDUIT WEST LATERAL A
G.V.C.W. LAT. A-EXT.
GREEN VALLEY CONDUIT
GREEN VALLEY SIPHON
LATERAL 56.5-A
LATERAL 57-A
RESERVOIR LANE
EASTRIDGE DR.
SPILL
WESTLAKE DR.
GREEN
RENAISSANCE AVE.
PAVILLION DR.
LEONARDO WAY
VALLEY ROAD
MANGELS BLVD.
ANTIQUITY DRIVE
TUSCANY DR.
VINTAGE VALLEY DR.
ETRUSCAN DRIVE
ANTIQUITY DYNASTY DRIVE
DYNASTY DRIVE
ABBY DRIVE
TERMINAL RESERVOIR
PUTAH SOUTH CANAL
NORTH CORDELIA NON-POTABLE WATER PUMPING PLANT
BRIDLE RIDGE DRIVE
ADAGIO DR.
BRAVA PL.
PERIDOT PL.
TURNSTONE WAY
WEST AMERICA DRIVE
JADE WAY
GRANITE LN.
OAKRIDGE DR.
KNOLL DR.
OAKWOOD DR.
FAIRFIELD CORPORATE COMMONS PUMPING PLANT
CAMPOS LN.
KAISER DRIVE
EXEC. CT. NORTH
EXEC. CT. SOUTH
CAMPOS CT.
SUISUN VALLEY ROAD
BUSINESS CENTER DRIVE
INTERSTATE 80
SCALE: 1" = 400'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
SUISUN VALLEY AREA
NORTH CORDELIA & FAIRFIELD CORPORATE COMMONS NON-POTABLE WATER SYSTEMS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-F

45,000 GALLON
WATER STORAGE TANK

BLUE MOUNTAIN DRIVE

HIDDEN VALLEY LANE

LYONS ROAD

BLUE RIDGE OAKS
P.P. No. 1
(PFL 19)

LATERAL 37 EXT.

SODA SPRINGS ROAD

INTERSTATE 80

LAT. 37-B

#1

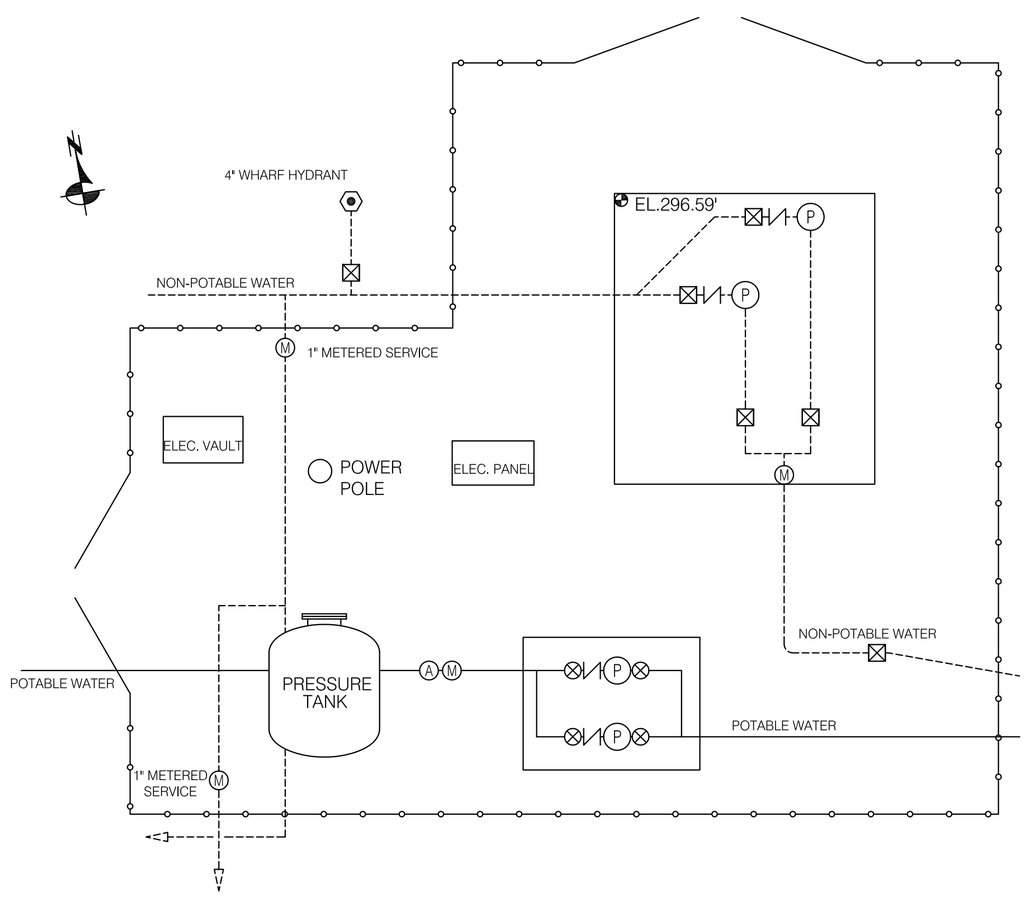
#2

B.R.O.
PP#2

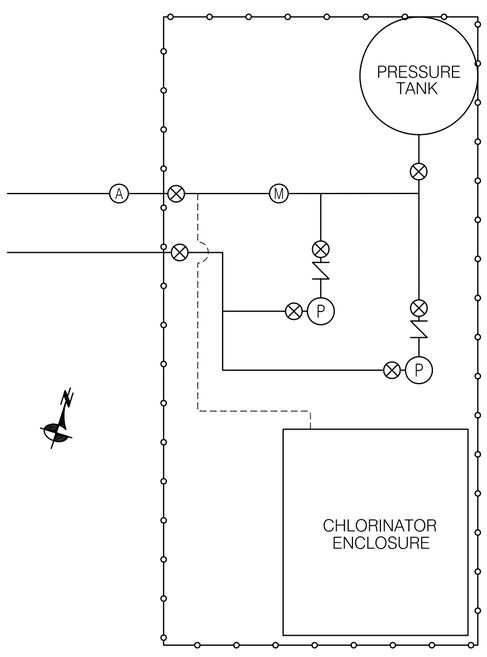
12" PVC (FAIRFIELD)

ROLLINGWOOD DRIVE

LYONS ROAD



BLUE RIDGE OAKS PUMPING PLANT No. 1
(NOT TO SCALE)



BLUE RIDGE OAKS PUMPING PLANT No. 2
(NOT TO SCALE)

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- NON-POTABLE SERVICE WITH METER
- NON-POTABLE SERVICE WITHOUT METER
- PRIVATE PIPELINE
- FLOAT VALVE
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M&I or POTABLE SERVICE WITH METER
- M&I or POTABLE SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

SCALE: 1" = 300'

SOLANO IRRIGATION DISTRICT

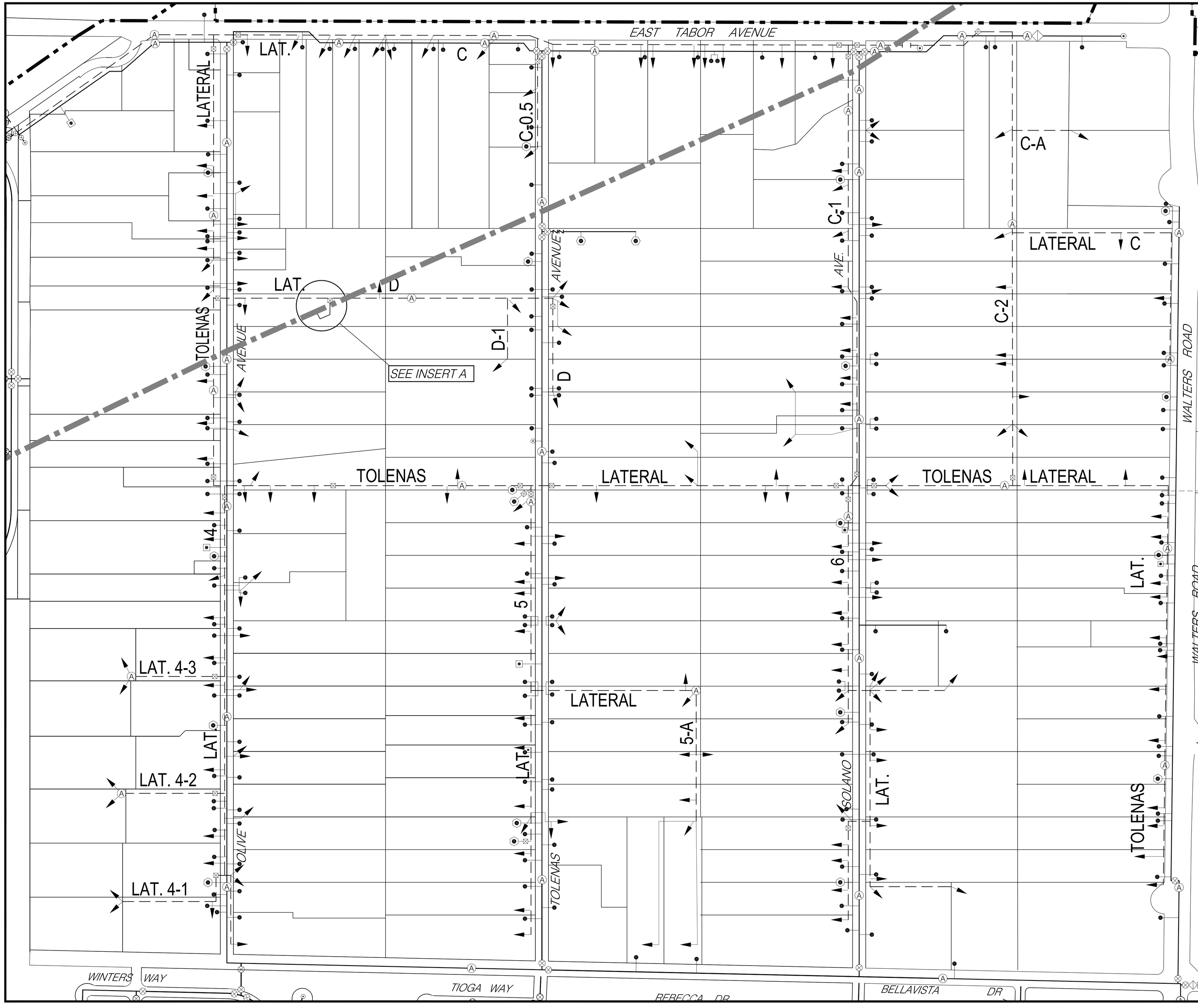
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT II

BLUE RIDGE OAKS POTABLE & NON-POTABLE SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

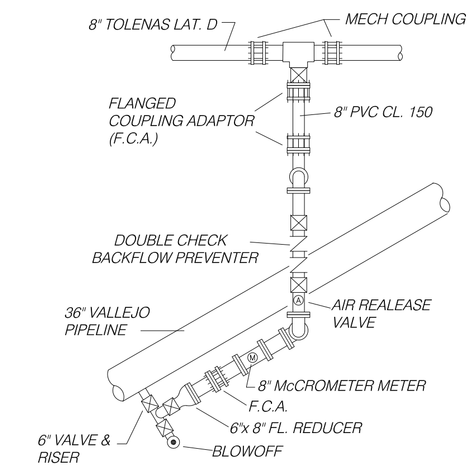
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-H



INSERT A

NO SCALE

VALLEJO PIPELINE CONNECTION
TO TOLENAS LATERAL
(SEE SUMMERS DWG. NO. SID-VPC-2)



SCALE: 1" = 200'

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- AG. TURNOUT
- PRIVATE PIPELINE or SERVICE
- METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

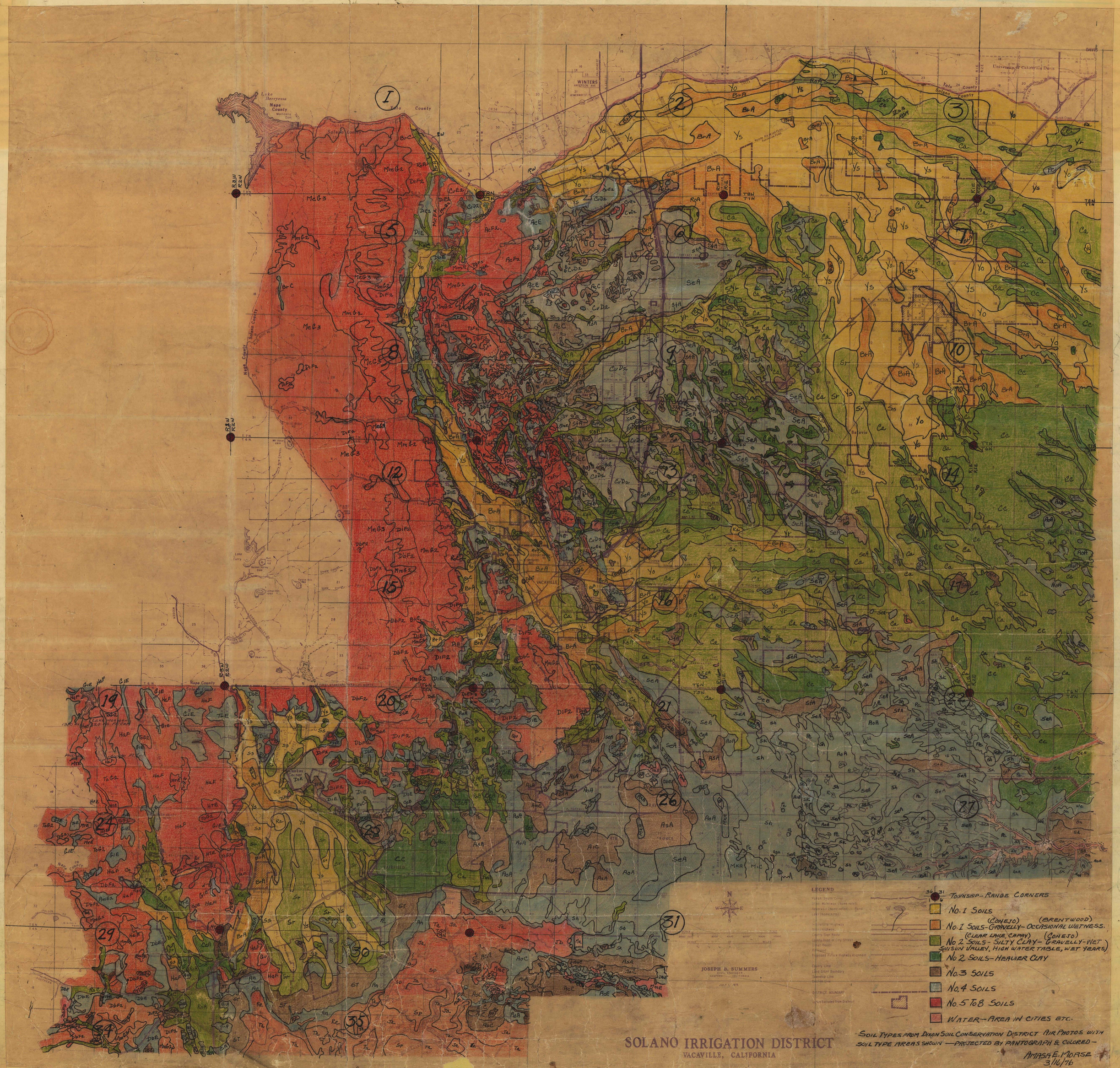
UNIT IV — TOLENAS SOUTH

TOLENAS POTABLE & NON-POTABLE
SYSTEM LOCATIONS AND SERVICES

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-3 Supp-I

Attachment B: District Soils Map



SOLANO IRRIGATION DISTRICT

VACAVILLE, CALIFORNIA

Attachment C: District Rules and Regulations

RULES AND REGULATIONS
Governing the Distribution of Water in the
SOLANO IRRIGATION DISTRICT

Revised to March 17, 1980

And superseding and canceling all rules and regulations governing distribution of water heretofore made.

Section I. Changes and Additions to Distribution System

1. Under provisions of California Law, all land division maps and subdivision maps for lands within District boundaries must be presented to the District staff for review and signature. Such review of the owner's map will be subject to payment of a fee to the District in accordance with a Schedule of Rates set by the Board of Directors. When arrangements satisfactory to the District have been made for constructing any new facilities which may be required for relocating existing facilities, and/or protecting existing facilities during owner's construction of improvements, the District will provide written approval of the map. (Board Policy 1973; revised 1978)

2. When a parcel of land is subdivided, the District will, on the written request of the subdivider, install whatever facilities are necessary to adequately serve water to the various parcels, but the entire cost of design and construction of the necessary alterations shall be paid by the subdivider. The subdivider may construct the new facilities subject to approval of plans and specifications and inspection by the District and provided the necessary rights of way are conveyed to the District for operation and maintenance of said facilities.

   Upon completion of the new facilities to the satisfaction of the District Engineer, the ownership and responsibility for operation and maintenance of the new facilities will be accepted by the District. A certificate of such acceptance or such other agreements as may be deemed appropriate will be executed.

3. If a parcel of land is subdivided, and the above request to the District is not received, or if the District does not have sufficient time to construct the necessary facilities before water is required by one, or any, of the new owners, or if the District has not issued a certificate of acceptance for new facilities and right-of-way as required by Paragraph 2, the District may refuse to deliver water to any of the subdivided parcels. No water will be delivered across property not owned by the water user without a written agreement satisfactory to the District.

4. Annexation and detachment of lands comes under the jurisdiction of the Solano County Local Agency Formation Commission. However, District support for such proposals is subject to the policies of the District's Board of Directors. Detachment of lands from the District are subject to payment of detachment fees which can be computed by District staff under a formula approved by the Local Agency Formation Commission. Annexation petitions are prepared by the District staff in accordance with policies and priorities determined by the Board. Preparation of such applications is subject to payment of fees as determined by the Board.

Section II. General Operating Rules

1. The water system and works of the District are under the exclusive management and control of the Board of Directors through its authorized agents, and no other persons shall have any right to interfere with the said system and works in any manner.

2. The Manager, or his authorized assistants, shall have the right to go upon the property of landowners to check condition and capacity of private ditches, pipelines and other water facilities.

3. The District may from time to time substitute water from other District sources for Solano Project water. Such other sources may include wells, drainage water, and reclaimed wastewater.

4. All private ditches, pipelines, and other facilities for handling the water, shall be kept clean and in repair. The District may refuse delivery of water until this rule is complied with.

5. All deliveries of water from Lake Berryessa are subject to the provisions of the contract between the District and the Solano County Flood Control and Water Conservation District, and to the Master Contract between the latter District and the United States of America. The official "Water Year" according to these contracts begins on March 1 of each year.

6. The District will not be liable for any damage of any kind or nature resulting directly or indirectly from any private ditch or pipeline or the water flowing therein, or for negligent, wasteful or other use or handling of water by the users thereof. The District's responsibility shall absolutely cease when the water leaves the canal or a pipeline of the District. The water user will be responsible for installing protective devices to protect his private pump or other facilities from damage due to low water and low pressure which may occur from time to time in the District's water system.

7. Each property owner shall be responsible to the District for all damage to District property caused by negligent or careless acts of himself or his agent. The cost of all such damage to the District shall be billed to the landowner.

8. Any construction or repair work by District employees and/or equipment for private landowners, whether performed under Rule 7 or at the request of the landowner, shall be billed to the landowner and shall accrue interest at the rate of 1-1/2 % per month if unpaid after 90 days from date of billing. Work performed at the request of the landowner will require a deposit in the amount of the material costs of the project before work will commence.

9. No chemicals, sewage, containers, rubbish, garbage, manure or refuse, dead animals or animal matter from any barnyard, stable, dairy, chicken yard, hog pen or animal feed yard, shall be placed in or allowed to be emptied into any ditch, canal or pipeline which is operated or maintained by the District or within any District lands or rights of way.

10. No tree or vine prunings, brush, weeds, grass or other materials shall be either dumped into the canals or placed on or adjacent to the canal banks where they might fall, slide or be blown into the District canals or drain ditches.

11. No opening or connection shall be made or structures placed in any District canal or pipelines except by employees of the District, or with written approval of the District.

12. District employees are forbidden to loan maps, records, tools, machinery or other District property without the consent of the Manager.

13. District assessments and standby charges are collected by the Solano County Tax Collector. Assessment rates are fixed annually by the Board of Directors to raise the revenue required to meet annual payments on federal loans and bonds authorized by District voters for construction of the water system. Assessed value of land is determined by the Solano County Assessor. Assessments are levied on the value of land only.

    Standby charges are levied on all parcels of land containing more than five acres to provide revenue for operation and maintenance of the water system. For the purpose of establishing a schedule for this charge, lands are classified in accordance with Solano Irrigation District Resolution No. 76-8, and subsequent Resolutions of the Board establishing standby charges.

14. Refusal to comply with the requirements hereof, or transgression of any of the rules and regulations, or failure to pay any water toll or charge, or any interference with the discharge of the duties of any official, shall be sufficient cause for cessation of water deliveries, and water will not again be furnished until full compliance has been made with all requirements herein set forth.

Section III. Delivery of Irrigation Water

1. Applications for Water Use.

    a. Applications for water use must be filled prior to March 1 each year on forms furnished by the District. If an application for agricultural water use shall not be received prior to March 1, that land shall not be entitled to receive water during the "water year". If the Board should determine that the District is facing a water shortage, the Board will allocate and provide for the distribution of water at the start of the "water year".

    b. In any circumstance in which the District has reason to believe that atypical water consumption practices may be incurred in regard to the irrigation of crops or supply of water for any consumptive purposes, the District will require a specific application and estimation as to the amounts of water which are proposed to be used. Such application must be approved by the Board prior to delivery of any water for the proposed use.

2. When delivery of water is made, the water shall be used day and night until the irrigation is completed.

3. The official agricultural irrigation season shall start April 1st of each year and end October 15th. Cooperation from the water user is essential so that proper maintenance of the systems may be completed. However, every reasonable attempt will be made by the District to deliver water when it is necessary for the protection of crops which are planted, provided that the water user has made special arrangements with the District for this service.

    Such special arrangements will include payment of unusual losses incurred by the District due to operation of the water system under abnormal conditions.

4. No irrigation water will be delivered unless ordered by a landowner or his authorized agent. The District will assume the employees or tenants of the owner to be his authorized agents unless notified to the contrary in writing.

5. An irrigator must order water by 2:00 p.m. the day prior to the delivery date desired. Water may be ordered either from the watertender or by telephone to the District office.

6. In areas of the District where the distribution systems have reached their capacity as determined by the original design criteria, it may be necessary to rotate water to the various irrigators. Service will be furnished as close as possible to the date ordered, but if an irrigator is not ready and water is delivered to another user, the irrigator must wait until capacity is available.

7. Irrigators must give notice of the completion of an irrigation by 2:00 p.m. on the day before completion, either to the District office or direct to the watertender. If such notice is not given they will be required to continue using water, or pay for the water until the delivery of that water is started at another location or until shut off can be accomplished at the headworks. In most instances, such a shut off includes a reduction in flow at Lake Solano into headworks of the Putah South Canal.

   Unless other arrangements are made by the watertender, changes, shutoffs, and starts of water will be scheduled between 6:00 a.m. and 6:00 p.m.

8. If water is ordered, and the irrigator is not ready to receive water at the time it was ordered, the irrigator may be required to pay for the water until he is ready to take delivery. If another irrigator needs the water the watertender may transfer the water, and in that event the irrigator originally ordering the water must wait until another head is available for his use.

9. If there is a material fluctuation in the head observed by the irrigator, the watertender shall be notified as soon as possible, with the approximate time or times of the fluctuation.

10. When an irrigation is completed the watertender will complete a form showing the date and hour the water was turned on, the date and hour that water was turned off, and the rates of flow that he has recorded. One copy of this report shall be turned in at the District office and retained on file by the Water Operations Department.

11. Any grievance or complaint of a landowner or an irrigator that cannot be settled directly with the watertender may be appealed to the Watermaster. If such complaint involves measurement of water for a specific irrigation cycle, the appeal must be initiated within thirty (30) days of receipt of billing for that irrigation. From the action of the Watermaster, appeal may be made to the District manager and from his decision, appeal may be made to the Board of Directors.

12. Irrigators protesting accuracy of measured deliveries may demand a check on the measuring device. Adjustments, if any, will be made from the date the accuracy check is requested.

13. Where private temporary service ditches are constructed paralleling District canals and drains, a full and complete bank must be constructed adjacent to and in addition to the bank of the District canal or drain so paralleled.

14. No fences or other obstructions shall be placed across or upon any District canal or bank or right of way of any canal bank without the written permission of the Board of Directors. Trespassing is prohibited in accordance with the provisions of Solano County Ordinance No. 564.

15. No horses, sheep, cattle, or other livestock may be pastured or allowed to trespass upon District canals at any time. Fencing to prevent their entrance shall be the responsibility of the landowner.

16. No private irrigation or drainage ditch may be constructed parallel to or over District pipelines within District right of way. Any irrigation ditch or drainage ditch that crosses or infringes on the District right of way shall not be constructed without prior written permission from the Board of Directors.

17. The Board of Directors shall fix rates for the use of water prior to April 1st each year for the following irrigation season. Copies of the rates in effect will be furnished on request.

18. All irrigators will be billed monthly for measured water used the previous month.

19. If a bill for water used on a parcel is unpaid 30 days after the date of billing, service of irrigation water to that parcel shall be discontinued until the irrigator has paid for all water received and interest at the rate of 1-1/2% per month will be charged until paid.

    If the delinquency date falls on a Saturday or Sunday, irrigators will be allowed until water order time, 2:00 p.m. in the afternoon of the Monday following the delinquency date, to pay their water bill.

20. When the water user on a parcel is a tenant, the landowner will be sent a copy of any delinquent bills.

21. Unpaid District charges are a lien on the land upon which the water was used. Amounts that are unpaid prior to the completion of the next assessment roll, together with penalty and/or interest, will be added to, and become a part of, the annual assessment levied against the land.

22. When a tenant-water user has failed to pay a District water bill, and the bill has been collected from the landowner, the District will refuse service to that water user on any parcel of land within the District, until the water user places a cash deposit with the District to cover the estimated water costs. When the deposit is exhausted, service will be refused until additional monies are deposited.

23. Upon receipt of a written request from the landowner prior to beginning of an irrigation season, the District will require the tenant water user to post a deposit before water is delivered, and delivery of water shall be discontinued when the deposit is exhausted.

    Once a water user has started irrigation for the season, a request from the landowner requiring a deposit will not be honored for the balance of that season, unless the water user agrees to post the deposit.

24. Irrigators that are irrigating small areas on a flat rate basis must place their orders with the District office or with the watertender before 2:00 p.m. the day prior to the date delivery is requested.

Unless the irrigator is notified that water is not available, he will open the gate and start irrigating at the time he requested the water.

The District reserves the right to increase flat rate charges during the season on parcels where irrigators persist in wasting water.

District reserves the right to measure and calculate the acreage on all land irrigated under the fiat rate rule.

Section IV. Delivery of Municipal and Industrial Water

A. General Conditions:

1. Any water sold or delivered by the District for other than agricultural irrigation, and any water sold to owners of less than two acres of land, shall be known as M & I water.

2. All installation costs for any M & I delivery shall be paid by the landowners. All plans shall be approved by the District Engineer and any cost of supervision of the installation of the necessary facilities shall be paid by the landowner.

3. Application for M & I water service shall be made on forms furnished by the District.

4. There shall be no cross-connections between pipelines carrying water served by the District and any other water supply on the premises of the landowners except by special permit, which will be subject to Solano County Health Department approval.

5. Water charges will be billed in accordance with the District Water Rate Schedule for Municipal and Industrial Water. If payment is not made 30 days after date of billing, service of water to that parcel may be discontinued until the user has paid for all water delivered, and interest at the rate of 1-1/2% per month will be charged until paid.

6. New service in some subdivided areas of the District is subject to connection fees to reimburse the District for cost of special distribution facilities. Fees will be in accordance with the appropriate section of the Connection Fee Schedule adopted by the Board of Directors.

B. Raw Untreated Water.

1. Raw M & I water is sold as untreated water that is not fit for human consumption.

2. Whenever raw M & I water is to be used for domestic consumption, service will not be given until the installation of the user has been approved by the Solano County Health Department, and the service will be discontinued at any time the Solano County Health Department notifies the District that the user's equipment for filtering or treating said water is not operating properly. It shall be the responsibility of the landowner to comply with all of the provisions of Section 7583 to Section 7615, inclusive, of Title 17 of California Administrative Code.

In conformance with Solano County Ordinance No. 926 (Septic Tank Ordinance) the District must provide periodic Inspection of private water treatment equipment used to treat District raw water supplies in cooperation with the Solano County Health Department. Inspection includes periodic water sampling and analysis at intervals specified by the County Ordinance. Monthly charges for this service will be billed in accordance with the applicable current Water Rate Schedule adopted by the Board of Directors.

C. Potable Domestic Water.

1. Potable domestic water service is available in limited areas of the District where facilities have been provided for that service. Service for areas inside the common boundaries of Suisun City and Solano Irrigation District is subject to the rules and regulations established by the Suisun City-Solano Irrigation District Joint Power Authority.

   Charges for potable or treated water service will be in accordance with the applicable portion of the M & I Water Rate Schedule which is available in the District office on request.

Section V. Drainage

1. Irrigators wasting water on roads, vacant land, or lands previously irrigated, either willfully, carelessly, or on account of defective ditches or inadequately prepared land, or who shall flood certain portions of the land for an unreasonable length of time, in order to properly irrigate other portion's, may be refused the use of water until such conditions are remedied.

2. Owners are referred to Solano County Ordinance No. 528. Should the County notify the District that an owner is in violation, the District may insist on corrective measures. Should the violations persist, the District will, at the request of the County, cease further delivery of water.

3. Before allowing water to drain or waste into drain ditches constructed and/or maintained by the District, landowners must construct, install and maintain outfall structures approved by the District Engineer so as to protect the drains from erosion and damage. General Operating Rule No. 7 will apply if damage is caused by non-compliance.

4. The District will, at the discretion of the Board of Directors, construct or provide for the use of main drainage channels for the conveying of irrigation drainage or surface runoff to natural channels or other disposal areas as long as funds are available.

   (a) Location of main drainage channels shall be in locations recommended by the District Engineer and approved by the Board of Directors.

   (b) All landowners will have the right to use the above mentioned channels, but must provide inlet structures as approved by the District Engineer to prevent erosion of banks and deposit of sediment in channels.

5. The District will assist any landowner or group of landowners in the location and engineering of feeder drains necessary for the conveyance of waters from the land to the main drains.

(a) If landowners are not able to secure a right of way or easement across adjoining land that is needed to convey waters to a main drain, the District will assist in securing said easements or right of way over the most feasible route.

6. If construction of tile drains, installation of drainage pumps, or other remedial measures are necessary for relief from perched water table, or other cause of excessive ground water height, the District will, in accordance with Paragraph 4, provide a main channel to convey water to a disposal area. Pumping, tiling, lateral drain ditches or other measures needed for the protection of landowners' property, and/or to convey water to the main drain channel, will be the responsibility of the landowner.

   (a) The District will assist with engineering and the securing of other professional assistance in devising the best and most economic means of solving the problem.

   (b) Individuals or groups constructing facilities to carry pumped ground water across other landowner's property on an easement secured by the District must, in the orchard area, construct either concrete lined ditches or pipelines to carry the water. Construction plans are to be approved by District Engineer.

   (c) The District may operate pumps, construct test drains, and do other investigative and exploratory work needed before permanent remedial measures can be recommended, but such work shall not obligate the District to continue pumping groundwater.

7. No drainage water may be pumped into a District canal or pipeline unless the quality of the water is such that it can be used for irrigation purposes, and with approval of the Board of Directors.

Attachment D: District Rate Structure and Sample Bills

2008

SOLANO IRRIGATION DISTRICT – AG WATER RATE LIST

CODE	RATE	DESCRIPTION
22	$16.65	WASTE WATER
26	$135.04	$0.31 per unit – *non-potable public agency*
30	$18.31	AG WATER, BELOW PSC
38	$27.98	AG WATER, ABOVE PSC
39	$30.98	LAMBERT LATERAL F SYSTEM
45	$45.90	DEEPWELL / OUT OF DISTRICT
49	$135.04	$0.31 per unit – *non-public agency*
55	$209.09	$0.48 per unit – *non-potable public agency*
59	$135.04	$0.31 per unit – *non-potable public agency*
60	$0.00	ZERO DOLLAR CHARGE (TRACKING ONLY)
70	$36.61	STOCK WATER CHARGE TO 30 HEAD
71	$45.77	STOCK WATER CHARGE OVER 30 HEAD
72	$58.58	FLAT GRAVITY CHARGE PER ACRE
74	$89.52	FLAT LIFT CHARGE PER ACRE
98	$117.61	$0.27 per unit – *non-potable public agency*

Solano Irrigation District Water Rates

Per Unit Charges

Area	*Type*	*2008*	*2007*	*2008*	*2009*	*2009*
Green Valley /	*NON-Potable*	m22	$0.41	**$0.35**	$0.32	m22
Peabody			$0.41			
Pleasants Valley			$0.38			
Gibson Canyon			$0.22			
Blue Ridge Oaks	*NON-Potable Filtered*	m69	$0.42	**$0.37**	$0.33	m69
Fairfield Corp Commons		m71	$0.26	**$0.29**	$0.33	
Paradise Golf		m94	$0.28	**$0.30**	$0.33	
North Village	*NON-Potable Filtered + cl2*	m19	$0.35	**$0.36**	$0.37	m19
Vacaville Corp Commons		m97	$0.31	**$0.34**	$0.37	
Schools Cemeteries	*NON-Potable - Public Agencies*	m65	$0.34	**$0.39**	$0.44	m65
Blue Ridge Oaks	*Potable*	m68	$5.30	**$6.00**	$6.69	
Elmira	*Potable*	m14	$0.99	**$1.02**	$1.07	
Gibson Canyon	*Potable*	m16	$0.94	**$1.04**	$1.15	
Peabody	*Potable*	m43	$4.90	**$5.47**	$6.05	
Quail Canyon	*Potable*	m23	$1.22	**$1.20**	$1.19	
Stocking Ranch	*Potable*	m33	$3.95	**$6.20**	$8.45	
Tolenas	*Potable*	m11	$0.53	**$0.48**	$0.42	

OTHER CHARGES:

PLANT INSPECTION - $15 OR $25 BI-MONTHLY
BACKFLOW DEVICE INSPECTION - $10 BI-MONTHLY

DISCRIPTIONS:

1 CF = 7.48 GAL
100CF = 1 UNIT
1 UNIT = 748 GAL
1AF = 43,560 CF = 325,900 GAL
an acre-foot supplies a family of 5 for 1year average

FLOW:
1CFS = 450 GPM
1CFS @ 24HRS = 646,320 GAL or 1.983AF
2 MILLION GALLONS = 3.07 AF
1,000 GPM = 2.23 CSF

SOLANO IRRIGATION DISTRICT

508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687-4966
(707) 448-6847 • (800) 675-3833

LOG ON TO OUR
IRRIGATION MANAGEMENT WEBSITE
WWW.WESTERNWX.COM\SID

ANDREWS VINEYARDS
PO BOX 785

FAIRFIELD, CA 94533

NO.: 1650
STATEMENT DATE: 08/10/2009
BEGIN PERIOD: 07/11/2009
END PERIOD: 08/10/2009
DUE DATE: 09/10/2009
PREPAID WATER:
DEPOSITS:

Finance charge of 1.5% (18% apr) if not paid by due date.

POSTING DATE	DESCRIPTION	WATER ACCT. NUMBER	TRANS. AMOUNT	ACRE FEET	PAYMENTS/ CREDITS	CHARGES
			PREVIOUS BALANCE →			.00
06/30-07/02	GRA 15 acres	9210	$254.28	13.355		
07/21-07/23	GRA 15 acres	9210	$25.32	1.330		
tot	CHADA 3A	9210		14.685		279.60
		YTD USAGE:		14.685		
		TOTAL FOR THIS PERIOD ▶		14.685	.00	279.60
		TOTAL BALANCE DUE ▶				279.60

* PLEASE SEE WATER USAGE STATEMENT FOR DATE OF IRRIGATION.

PLEASE DETACH & RETURN THIS PORTION WITH YOUR PAYMENT

NAME: ANDREWS VINEYARDS
PO BOX 785

FAIRFIELD, CA 94533

CUSTOMER NO.: 1650

NO.:

DUE DATE: 09/10/2009

BALANCE DUE: 279.60

Solano Irrigation District • 508 Elmira Road • Vacaville, CA 95687-4966

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CA 95687

Return Service Requested

ACCOUNT NUMBER	SERVICE ADDRESS
12000222.0	8376 QUAIL CANYON RD.
DUE DATE	**BILLING PERIOD**
08/31/09	06/02/2009 TO 08/01/2009
TOTAL CHARGES	**AMOUNT ENCLOSED**
$69.50	$

**SINGLE-PIECE 1 SGL 54757RB30-A-1
1 1 SP 0.440

LEVI, DAVID & NANCY
707 WATTS ST
DURHAM NC 27701-1725

MAKE CHECKS PAYABLE TO: SOLANO IRRIGATION DISTRICT

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CA 95687-4931

DETACH AND RETURN THIS REMITTANCE PORTION OF THE BILL WITH YOUR PAYMENT
KEEP THIS PORTION FOR YOUR RECORDS

INVOICE

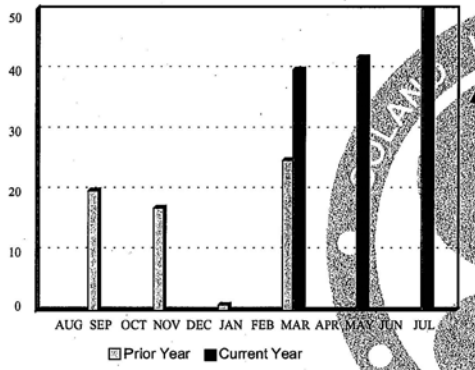
ACCOUNT NUMBER	SERVICE ADDRESS	BILL DATE	DUE DATE
12000222.0	8376 QUAIL CANYON RD.	08/01/09	08/31/09

SERVICE CODE	WATER TYPE	PRIOR READ	CURRENT READ	USAGE (IN 100 CU)
WA BP	POTABLE WATER	1069	1119	50

SUMMARY OF CHARGES

Previous Balance	$0.00
Water Charge	$59.50
BP Charge	$10.00
TOTAL DUE	**$69.50**

WATER USAGE in 100 CU



SERVICE CODE EXPLANATION

WA - Potable Water	LP - Loan Payment
W1 - Non-Potable Water	MI - Miscellaneous
PI - Plant Inspection	PN - Penalty
BP - Backflow Preventer	

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

For more information visit our website at: **www.sidwater.org**

BILLING INQUIRIES: (707) 448 - 6847
(800) 675 - 3833
OFFICE HOURS MON-FRI 8:00 AM - 4:30 PM

1SR0515KM35087- DataProse, Inc - www.dataprose.com

Attachment E: District Water Shortage Plan

SOLANO PROJECT MEMBERS'
AGREEMENT AS TO DROUGHT MEASURES
AND WATER ALLOCATION

THIS AGREEMENT, dated as of March 1, 1999, by and among the Solano Irrigation District, a California Irrigation District (hereinafter referred to as "SID"), Maine Prairie Water District, (hereinafter referred to as "MPWD"), the City of Fairfield, a California municipal corporation (hereinafter referred to as "Fairfield"), the City of Vacaville, a California municipal corporation (hereinafter referred to as "Vacaville"), the City of Suisun City (hereinafter referred to as "Suisun"), and the City of Vallejo, a California municipal corporation (hereinafter referred to as "Vallejo"), individually referred to or collectively referred to in this Agreement as "Party" or "Parties," respectively, is made and entered into and the Parties do, for full and adequate consideration, receipt of which is hereby acknowledged, agree as follows:

Section 1.0: Background Facts

1.1 The Parties are all, through contracts with the Solano County Water Agency ("SCWA"), Participating Agencies of the Solano Project, entitled to annual deliveries of water from the Solano Project in the following amounts:

Name of Party	Annual Entitlement (Acre-Feet ("AF")/Water Year)
Solano Irrigation District	141,000
Fairfield	9,200
Vacaville	5,600
Suisun City	1,600
Maine Prairie	15,000
Vallejo	14,750
Total:	187,150

The present contract between the United States and SCWA for Solano Project water supply ("Solano Project Master Contract") expires in 1999, and negotiations between the United States and SCWA for Solano Project Master Contract renewal and extension are underway, and the Member Unit Parties' contracts with SCWA for the annual entitlements will be extended or renewed.

(Final 1/25/99)

1.2 The Parties wish to provide for this Agreement as to the measures to be used in regard to the accounting of water not used from a Party's annual entitlement from the Solano Project in a year after renewal, and also to provide for contractually agreed-to and enforceable curtailments in the amounts of water taken under the respective Parties' annual entitlements during certain drought conditions. This Agreement provides for the accounting of and preservation of the rights of the Parties to those waters which are voluntarily or mandatorily curtailed.

1.3 The Parties wish to further provide in this Agreement for special measures which SID will implement should the drought conditions deepen and become more severe, resulting in reduction of storage in Lake Berryessa to certain levels despite all reasonable efforts of the Parties.

1.4 The Parties agree that each of the Background Facts in Section 1.0 *et seq.* is true and correct, and a portion of the consideration for this Agreement.

Section 2.0: <u>Definitions</u>.

2.1 The phrase "Storage in Lake Berryessa" shall mean the amount of water stored on the date specified in this Agreement within Lake Berryessa (i) excluding any amounts of water in dead storage which may not be physically released or diverted from Lake Berryessa for any reason, (ii) excluding any amounts of water held on that date in Voluntary Carryover Accounts by the Parties to this Agreement, but (iii) including any amounts of water held in Restricted Carryover Accounts by the Parties on that date. The Storage in Lake Berryessa shall be calculated utilizing the most current elevation capacity curve for Lake Berryessa approved by the United States.

2.2 The phrase "annual entitlements" shall mean the amount of water a Party is entitled to delivery each water year in the amounts set forth in Paragraph 1.1 above, where each "water year" begins on March 1, and ends on the last day of the following February, as set forth in the present contracts.

Section 3.0: <u>Renewal Contracts of Parties</u>

3.1. The Parties agree that the Parties shall each be entitled to renewal of their

Contract with SCWA for the purchase of water from the Solano Project annually on the basis of the annual amounts set forth in Paragraph 1.1 above.

3.2 It shall be a precondition to the enforceability of this Agreement that each of the Parties shall have received and accepted a renewal contract for Solano Project Water in the above amounts from SCWA ("Renewal Participating Agency Contract") and that the terms of those agreements have been accepted by each Party and approved by the United States Department of Interior, Bureau of Reclamation, if such approval is required by the Solano Project Master Contract, and the Renewal Participating Agency Contracts have each been validated in accordance with the provisions of California Code of Civil Procedure section 860, *et seq.* It shall be a further precondition of the enforceability of this Agreement that no material change has been made in the terms and provisions of each Renewal Participating Agency Contract including, without excluding other material changes, that:

3.2.1 The term of all of the Renewal Participating Agency Contracts shall be equivalent to the term of the renewed Solano Project Master Contract; and

3.2.2 The proportions of payment amounts per AF of water available under the Renewal Participating Agency Contracts shall be the same as the existing Contracts of $15.00 per AF for municipal and industrial ("M&I") water use and $2.65 per AF for irrigation use or a ratio of 5.66 to 1, depending on the respective purpose of use; and

3.2.3 There shall be included within all Renewal Participating Agency Contracts provisions permitting each Party to voluntarily retain carryover storage in Lake Berryessa for any unutilized portion of that Party's annual water entitlement under its Renewal Participating Agency Contract under the following conditions:

(a) The amount so voluntarily unutilized on the last day of February shall be added on that date to a carryover account ("Voluntary Carryover Account") for the Party that did not order delivery of the amount of water, but the Party shall pay SCWA for the undelivered water as if the water was delivered to the Party in that year in accordance with the Renewal Participating Agency Contract terms. No additional payment will be required for subsequent use of that water if there is no change in type of use.

(b) Any water in a Party's Voluntary Carryover Account may be utilized by that Party, in addition to all portions of their annual entitlement, in any water year subsequent to the water year in which it is added to the Party's Voluntary Carryover Account, or may be assigned, with approval by SCWA, to another Party to this Agreement, for use by the other Party in the year of non-diversion before its addition to a Party's Voluntary Carryover Account or for use in a subsequent water year from that assignee's Voluntary Carryover Account.

(c) Any water in a Party's Voluntary Carryover Account at the time that Lake Berryessa spills, or at a time in which emergency releases are made from Lake Berryessa for any other reason which releases are not delivered by the Solano Project to SCWA, may be lost as follows: The spill or emergency release shall be charged proportionately to each Party having a Voluntary Carryover Account and subtracted from the Parties' Voluntary Carryover Accounts then having a balance in their accounts to the extent of the spill or emergency release.

Example: Party A has 20,000 AF in its Voluntary Carryover Account, Party Y has 10,000 AF in its Voluntary Carryover Account, and Party X has 2,000 AF in its Voluntary Carryover Account, as these accounts exist at the time the spill condition commences, and these are the only carryover amounts presently in Lake Berryessa. A spill condition occurs in which water is not diverted into the Putah South Canal for beneficial use, or is not credited to a release requirement of the Solano Project in Putah Creek, including carriage losses upstream of Putah Diversion Dam. Each net acre foot spilling shall be charged proportionately to each Party's Voluntary Carryover Account. In the example, the percentages are: Party A, 62.5%; Party Y, 31.25%; Party X, 6.25%. If the net spill was of 16,000 AF, the Voluntary Carryover Accounts of all Parties would be reduced by 50%. If the net spill exceeded 32,000 AF, each Party's Voluntary Carryover Account would have a zero balance.

(d) No monies shall be reimbursable from SCWA to the Parties for the amounts paid for the Voluntary Carryover Account water to SCWA which is spilled.

(e) No evaporation, measurement or carriage loss will be charged upon any Party's Voluntary Carryover Account balance. No Party shall be charged a storage charge upon its Voluntary Carryover Account balances.

Section 4.0: Preparation of Drought Contingency Plans:

4.1 When Storage in Lake Berryessa falls below 800,000 AF as measured on December 1, the Parties will participate with SCWA staff in preparation of a Drought Contingency Plan which shall include reasonable water conservation measures, investigation of potential emergency supplies which could be imported without construction of new conveyance facilities, and other reasonable measures which could reduce the depletion of Storage in Lake Berryessa. Implementation of any of these measures by the Parties and SCWA will only be with the consent of the individual Parties electing to participate, and SCWA will not suspend or supersede provisions of the Participating Agency Renewal Contracts with SCWA. The Drought Contingency Plan shall also address terms and conditions for water sales pursuant to Paragraph 5.6(b). If Storage in Lake Berryessa exceeds 1.1 million AF on the following April 1, development of the Drought Contingency Plan shall be suspended.

Section 5.0 Mandatory Additions to Storage and Carryover Accounts by Parties ("Restricted Carryover Account"):

5.1 When Storage in Lake Berryessa is between 550,000 AF and 800,000 AF as measured on April 1 of any water year, then each of the Parties agrees to forego taking delivery of at least 5% of the Party's annual entitlement. If the Storage in Lake Berryessa is between 450,000 AF and 550,000 AF as measured on April 1, the Parties agree that they will forego taking delivery of at least 10% of their annual entitlements. On the first day of the next water year, a 5% (if Storage in Lake Berryessa had been between 550,000 AF and 800,000 AF the previous April 1) or 10% (if Storage in Lake Berryessa had been between 450,000 AF and 550,000 AF the previous April 1) portion of each Party's annual entitlement shall be credited to what will be called the Party's "Restricted Carryover Account."

5.2 Restricted Carryover shall be classified as either irrigation or M&I. For a Party that delivers only one class of water, 100% of its Restricted Carryover shall be designated of that class. For a Party that delivers both irrigation water and M&I water, the Restricted Carryover shall be segregated into irrigation ("irrigation Restricted Carryover") and M&I ("M&I Restricted Carryover") classes based on the amounts of each class of water acquired by that Party from SCWA during the water year in which the Restricted Carryover was generated.

Example: The Storage in Lake Berryessa is between 550,000 AF and 750,000 AF on April 1. Party A delivers both M&I and irrigation water, and in the current water year acquires 20% M&I and 80% irrigation from SCWA. The 5% of annual entitlement foregone amount deposited in Party A's Restricted Carryover Account the following water year would be classified as 1% M&I Restricted Carryover and 4% irrigation Restricted Carryover.

5.3 Notwithstanding the mandatory foregoance of a portion of its annual entitlement, a Party having a Voluntary Carryover Account balance from voluntary curtailment of use may take any portion of the Voluntary Carryover Account balance from that account in a water year.

5.4 A Party shall not withdraw water from its Restricted Carryover Account until either (a) the Storage in Lake Berryessa on a subsequent April 1 exceeds 800,000 AF, or (b) the Storage in Lake Berryessa on a subsequent April 1 falls below 450,000 AF. If the April 1 Storage in Lake Berryessa exceeds 800,000 AF, the Restricted Carryover Accounts shall convert to or combine with Voluntary Carryover Accounts of the respective Parties. If the April 1 Storage in Lake Berryessa falls below 450,000 AF, the water in Restricted Carryover Accounts will become available to the Member unit Parties as specified in Section 5.6 below.

Example: Party A serves only M&I water and has a Voluntary Carryover Account balance of 2,000 AF on April 1 and no Restricted Carryover Account balance. The April 1 Storage in Lake Berryessa is less than 800,000 AF but more than 550,000 AF. Party A will forego taking delivery of at least 5% of its annual entitlement in the current water year ending on the last day of February. Party A may, up to the last day of February, order and receive 95% of its annual entitlement and an additional 2,000 AF from its Voluntary Carryover Account, bringing its Voluntary Carryover Account to zero on the last day of the water year. The following water year, the Restricted Carryover Account of Party A will have the foregone amount of 5% in it, classified as 100% M&I Restricted Carryover. If the Storage in Lake Berryessa on April 1 of that year exceeds 800,000 AF, Party A's Restricted Carryover Account will convert to a Voluntary Carryover Account, and Party A is entitled to use the water at any time. If the Storage in Lake Berryessa falls below 450,000 AF on April 1 of that year, the water in Restricted Carryover Accounts will become available to the Parties as specified in Section 5.6

below. If the April 1 Storage in Lake Berryessa is any other amount (between 450,000 AF and 800,000 AF), the foregone amount remains in Party A's Restricted Carryover Account and is not available for use.

5.5 After successive water years in which Storage in Lake Berryessa is between 450,000 AF and 800,000 AF on April 1, water will tend to accumulate in the Restricted Carryover Accounts. The above provisions notwithstanding, however, accumulated water in a Party's Restricted Carryover Account (combined M&I and irrigation Restricted Carryover) shall not exceed 50% of that Party's annual entitlement.

Example: Same as last example (Section 5.4) except Party A starts with a Restricted Carryover Account balance of 48% of its annual entitlement. Party A would be required to deposit only 2% of its annual entitlement into its Restricted Carryover Account to bring the Restricted Carryover Account up to the maximum 50% of annual entitlement. Party A may take delivery and use up to 98% of its annual entitlement that water year, excluding any Voluntary Carryover.

5.6 When Storage in Lake Berryessa falls to less than 450,000 AF on April 1, the Parties will not be required to deposit additional water into Restricted Carryover attributable to that water year and water from the Restricted Carryover Accounts will be released to the Parties as follows:

a. The Parties shall have access to their M&I Restricted Carryover Account balances for M&I uses; and

b. The Parties shall have access to their irrigation Restricted Carryover balances for voluntary sale to other Parties for M&I uses based on terms and conditions established through the drought contingency planning process of Section 4.0.

Example: In 2006, Storage in Lake Berryessa is between 550,000 AF and 800,000 AF on April 1 after being above 800,000 AF the previous year. A 5% Restricted Carryover amount is required of all Parties for that water year. Since water orders are submitted to SCWA prior to March 1, the order for that year will be amended to reflect the reduction in available water supply for each of the Parties and the foregone amount will be credited to the Restricted Carryover Accounts on March 1, 2007. On April 1 in each of years 2007 and 2008,

Storage in Lake Berryessa is between 450,000 AF and 550,000 AF. On March 1, 2009, each Party will have 25% of its annual entitlement in its Restricted Carryover Account. On April 1, 2009, Storage in Lake Berryessa falls below 450,000 AF. The Parties will not be required to deposit further water into their Restricted Carryover Accounts that year, and each Party may use any M&I Restricted Carryover in its Restricted Carryover Account for M&I uses that year. Furthermore, Parties with irrigation Restricted Carryover may sell all or any part of that water to other Parties for M&I use pursuant to the drought contingency plan of Section 4.0 above. Any water not sold will remain irrigation Restricted Carryover in the selling Party's Restricted Carryover Account, and such water's disposition will be determined by the April 1 Storage in Lake Berryessa in subsequent years.

5.7 Any amounts of water which are mandatorily foregone and placed into the Restricted Carryover Accounts by the Parties pursuant to Paragraph 5.1 shall be subject to payment of the water charge to SCWA for the foregone amount. No additional payment will be required for subsequent use of that water if there is no change in the type of use.

5.8 In addition to the provisions above, when Storage in Lake Berryessa is less than 400,000 AF on April 1, SID will prepare to implement a voluntary agricultural water marketing program in order to sign up growers who are willing to sell their water allocations for the next water year beginning March 1 of the following year. The water obtained by this voluntary process will be marketed by SID to the Parties to meet M&I water needs of those Parties. The process, methods of determining cost, and conditions governing the marketing to Participating Agencies shall be reasonable and are generally outlined as to form in Exhibit "A" entitled "Solano Irrigation District Drought Impact Reduction Program" (referred to herein as "Program"). The SID Board of Directors may alter and modify the conditions, charges and terms of the Program from time to time, but the purposes of the Program of providing for voluntary relinquishment of agricultural water, while avoiding permanent adverse economic, environmental and social or organizational damage to the agricultural community and to the Parties' M&I users, and retaining the viability of SID, shall be reasonably retained in the Program adopted and implemented by SID. Parties desiring to obtain water from SID for M&I purposes will be provided a reasonable opportunity to comment on any proposed Program changes in advance of their implementation by SID.

5.9 If the Solano Irrigation District Drought Impact Reduction Program shall have been implemented for two or more successive years in the previous three years, and a total of more than 35,000 AF of water are subscribed during the three years to meet M&I water needs of Parties, and on the following April 1 Storage in Lake Berryessa is less than 400,000 AF, the amounts of water to be made available under the Program in that year shall be reduced by SID to a maximum of 5,000 AF.

Example A: Same as last example (Section 5.6), with the additional facts that Storage in Lake Berryessa drops below 400,000 AF on April 1 in years 2010 through 2012, and in year 2009 and 2010, the Program provides for the subscription of 20,000 AF annually for M&I use. Because in the successive years 2009 and 2010 the Program is utilized to provide 35,000 AF or more to M&I users, each Party would have the additional right to participate in the Program in year 2011, but only to the extent of the Party's share of a total Program amount not to exceed 5,000 AF. In year 2012, because more than 35,000 AF were subscribed to under the Program over the past three years and the program was in effect in at least two successive years within the previous three years, the Program shall be reduced again to a maximum of 5,000 AF. If Storage in Lake Berryessa continues below 400,000 AF on April 1, 2013, the 5,000 AF restriction would not be in effect because the Program did not provide 35,000 AF or more to M&I users over the past three years.

Example B: Same as last example, except Storage in Lake Berryessa is above 400,000 AF on April 1, 2010, and therefore the Program is not in effect that year. In year 2011 the program provides for the subscription of 20,000 AF for M&I use. In year 2012, the 5,000 AF restriction would not be in effect because, although the Program provided over 35,000 AF to M&I users over the past three years, the Program was not in effect in at least two successive years during that period. If Storage in Lake Berryessa continues below 400,000 AF on April 1, 2013, the 5,000 AF restriction would be in effect if the 2012 subscription was 15,000 AF or more (so that the combined 2011 and 2012 subscription was 35,000 AF or more).

5.10 Except as provided otherwise by this Section, Restricted Carryover will be treated the same as Voluntary Carryover.

Section 6.0: **No Assignments**

6.1 This Agreement, and the rights, duties and benefits given in it, may not be assigned by a Party to a non-Party without the advance written consent of all other Parties, and any attempted direct or indirect assignment without such consent is void. The amounts of water in a Party's Voluntary or Restricted Carryover Accounts may not be assigned directly or indirectly for the benefit of non-Parties and SCWA must consent to any such assignments between Parties. Approval of assignment of portions of a Party's annual entitlement to water under its Renewal Participating Agency Contract by SCWA shall carry with it the obligation to provide the Restricted Carryover Account amounts attributable to that entitlement.

Section 7.0: **Counterparts**

7.1 This Agreement may be executed in several duplicate counterparts, each of which shall be an original.

Section 8.0: **SCWA Consent**

8.1 The Solano County Water Agency executes this Agreement for the purposes of consenting to the terms hereof. Each Party shall have the right to enforce the terms of this Agreement against any or all other Parties.

SOLANO IRRIGATION DISTRICT

Dated: By: _____
President, Board of Directors

[SEAL] Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
District Counsel, Solano Irrigation District

MAINE PRAIRIE WATER DISTRICT

Dated: By: Milton Rayn
President, Board of Directors

[SEAL] Attest:

William M. Holdener
Secretary, Board of Directors

Approved as to form:

George Barger
District Counsel

CITY OF FAIRFIELD

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk, City of Fairfield

Approved as to form:

_____
City Attorney, City of Fairfield

CITY OF SUISUN CITY

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk of the City of Suisun City

Approved as to form:

_____
City Attorney, City of Suisun City

MAINE PRAIRIE WATER DISTRICT

Dated: By: _____
President, Board of Directors

[SEAL] Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
District Counsel

CITY OF FAIRFIELD

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk, City of Fairfield

Approved as to form:

_____
City Attorney, City of Fairfield

CITY OF SUISUN CITY

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk of the City of Suisun City

Approved as to form:

_____
City Attorney, City of Suisun City

MAINE PRAIRIE WATER DISTRICT

Dated: By: _____
President, Board of Directors

[SEAL] Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
District Counsel

CITY OF FAIRFIELD

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk, City of Fairfield

Approved as to form:

_____
City Attorney, City of Fairfield

CITY OF SUISUN CITY

Dated: By: _____
Mayor

[SEAL] Attest:

Sharon Ventura
Clerk of the City of Suisun City

Approved as to form:

City Attorney, City of Suisun City

11

CITY OF VACAVILLE

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk of the City of Vacaville

Approved as to form:

_____
City Attorney, City of Vacaville

CITY OF VALLEJO

Dated: By: _____
City Manager

[SEAL] Attest:

_____
Clerk of the City of Vallejo

Approved as to form:

_____
City Attorney, City of Vallejo

CONSENTED TO:

SOLANO COUNTY WATER AGENCY

Dated: By: _____
President, Board of Directors

[SEAL] Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
District Counsel

CITY OF VACAVILLE

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk of the City of Vacaville

Approved as to form:

_____
City Attorney, City of Vacaville

CITY OF VALLEJO

Dated: 3/12/99 By: _____
City Manager

[SEAL] Attest:

_____
Clerk of the City of Vallejo

Approved as to form:

_____
City Attorney, City of Vallejo

CONSENTED TO:

SOLANO COUNTY WATER AGENCY

Dated: By: _____
President, Board of Directors

[SEAL] Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
District Counsel

CITY OF VACAVILLE

Dated: By: _____
Mayor

[SEAL] Attest:

_____
Clerk of the City of Vacaville

Approved as to form:

_____
City Attorney, City of Vacaville

CITY OF VALLEJO

Dated: By: _____
City Manager

[SEAL] Attest:

_____
Clerk of the City of Vallejo

Approved as to form:

_____
City Attorney, City of Vallejo

CONSENTED TO:

SOLANO COUNTY WATER AGENCY

Dated: By: _____
President, Board of Directors

[SEAL] Attest:

_____
Secretary, Board of Directors

Approved as to form:

_____
District Counsel

EXHIBIT "A"

SOLANO IRRIGATION DISTRICT
DROUGHT IMPACT REDUCTION PROGRAM ELEMENTS

The Program will include the following elements:

1.0 The District's Contract with the Parties requesting Municipal and Industrial Water:

1.1 Proportions in Program: On or about April 1 when it is determined that the amount of water in Storage in Lake Berryessa is less than 400,000 AF, excluding water which is in dead storage and water which is in the voluntary carryover accounts of the Parties to the Agreement, the Parties, including SID, delivering municipal and industrial water in proportion to the average annual amounts of municipal and industrial water ordered and paid for from the Solano Project by those Parties during the preceding five (5) full water years, shall be entitled to participate in the SID Drought Impact Reduction Program ("The Program").

1.2 No Assignment of Proportion of Program Water: All Parties seeking water under the Program for municipal and industrial use shall be entitled to their proportional share of the water made available by the Program. If a Party desires less than their proportional share of the Drought Impact Reduction Program water, they may not assign their relinquished portion of the Program water to any other Party, and the relinquished portion of the water will be divided in accordance with the percentage of the Program water requested by Parties, if any Party requests less than their proportional share.

1.3 District Target Price: On or before May 1, SID will establish and announce a target price per AF for the amount of water which will be deemed relinquished by a Landowner and/or Tenant within SID for the Program in the following water year.

1.4 Additional Costs: In addition to the target price payable to the Landowner and/or Tenant for each acre foot, SID shall establish the additional amounts payable to SID for its operation and maintenance costs, lost water revenues and other reasonable costs to be incurred in implementing the Program. SID will establish the amounts of water which will be allocated to each acre of land under the rules and regulations in the following water year in which the Program is to be implemented and to which the target price and charges of SID would apply if the Landowner and/or Tenant elect to participate in the Program.

1.5 Contract with District: Upon establishing the economic terms of the Program, ninety (90) days notice shall be provided to the Parties serving Municipal and Industrial water of their right to subscribe and contract to the terms of the Program and their right to purchase upon those terms their proportionate share of the Program water in the following water year. The Program water to be made available to the Parties providing for municipal and industrial water service, including SID, shall not exceed twenty thousand (20,000) AF in a water year, or the water allocation from 7,500 acres of SID land, whichever sum is less. A Party declining to or omitting to subscribe to its proportionate share of the Program water may subscribe to a lesser amount of water, or if no election to subscribe is made, their proportionate share shall be divided among the other participants in proportion to requests of the remaining Parties limited by those Parties' proportions established under Paragraph 1.1 above (five years' historic ordering of M & I water from Solano Project). All subscription requests shall be submitted in writing.

1.6 Solicitation Period: Because the terms will be announced and the subscriptions sought approximately 9 months before the relinquishment would commence to take effect, a period of at least 45 days beginning on or before August 1 will be provided for Landowners and Tenants within the boundaries of SID to offer in writing the amounts of water specified and committed to be purchased by the Parties for municipal and industrial purposes in the following water year under the Program.

1.7 Solicitation Complete - Finalization of Contract Amounts: If sufficient Landowner and/or Tenant participants are received within the initial 45-day period by SID, a final binding contract for these amounts shall be delivered by the Parties to SID for the purchases, and SID will submit contracts to the participating SID landowners and/or tenants for the relinquishment to take effect in the following water year.

1.8 Insufficient or Excessive Landowner Offers: If insufficient lands subscribe to the SID Program in the solicitation, and insufficient amounts of water are obtained to meet the total demand of the requesting Parties, which demand shall not exceed 20,000 AF or water from 7,500 acres, whichever is less in any water year, the Parties shall nevertheless be bound to purchase those amounts tendered by landowners and/or tenants from SID.

If the participating landowners and/or tenants offer amounts of water in excess of subscriptions of the Parties, the amounts tendered by each participant will be reduced by a factor representing the excess amount as a percent of the subscribed amount.

Final contracts with participants and the subscribing Parties shall be delivered to SID for approval on or before October 15.

1.9 Payment to District: The monies due to SID from the Parties shall be paid on or before October 15, and shall be obtained by SID and distributed by SID in accordance with its contractual terms with the Landowners and Tenants. Interest earned upon the payments prior to disbursement shall be credited to the Parties participating in the Program. The participating Parties shall pay to SCWA the municipal and industrial rate for the water so assigned by SID to the Parties prior to the Parties participating in the Program ordering and delivery of the water in the following water year.

1.10 No Upset Price: The provisions of the Parties' agreement with SID and the Landowner/Tenant agreement with SID will not provide for an upset price, and thus if the following water year is a plentiful water year, nevertheless the water to be transferred by SID to the Parties will be transferred on the first day of the subsequent water year and will be added to the account of the participating Parties in the Program on that day. Participating Parties should recognize that it is possible that spills of Lake Berryessa may occur after March 1, and thus it is theoretically possible to obtain water pursuant to the Program and to lose it forthwith without the ability to use it or hold it in a carryover account. Water transferred by SID to participating Parties will be treated as voluntarily added to the Party's carryover account if not utilized in the water year.

1.11 No Waiver or Transfer of Water Outside Solano Project Service Areas: As a condition of participating in the Program, no Party participating in the receipt of water from the Program shall directly or indirectly in the water year that deliveries are made under the Program (i) waive the ability to receive water from other sources available to it, or (ii) transfer directly or indirectly the amounts held by the Party in their Solano Project account or held by them pursuant to their State Water Project contracts or held as other water rights to any non-Party, or (iii) allow amounts to be received by the Party pursuant to the Solano Irrigation District Drought

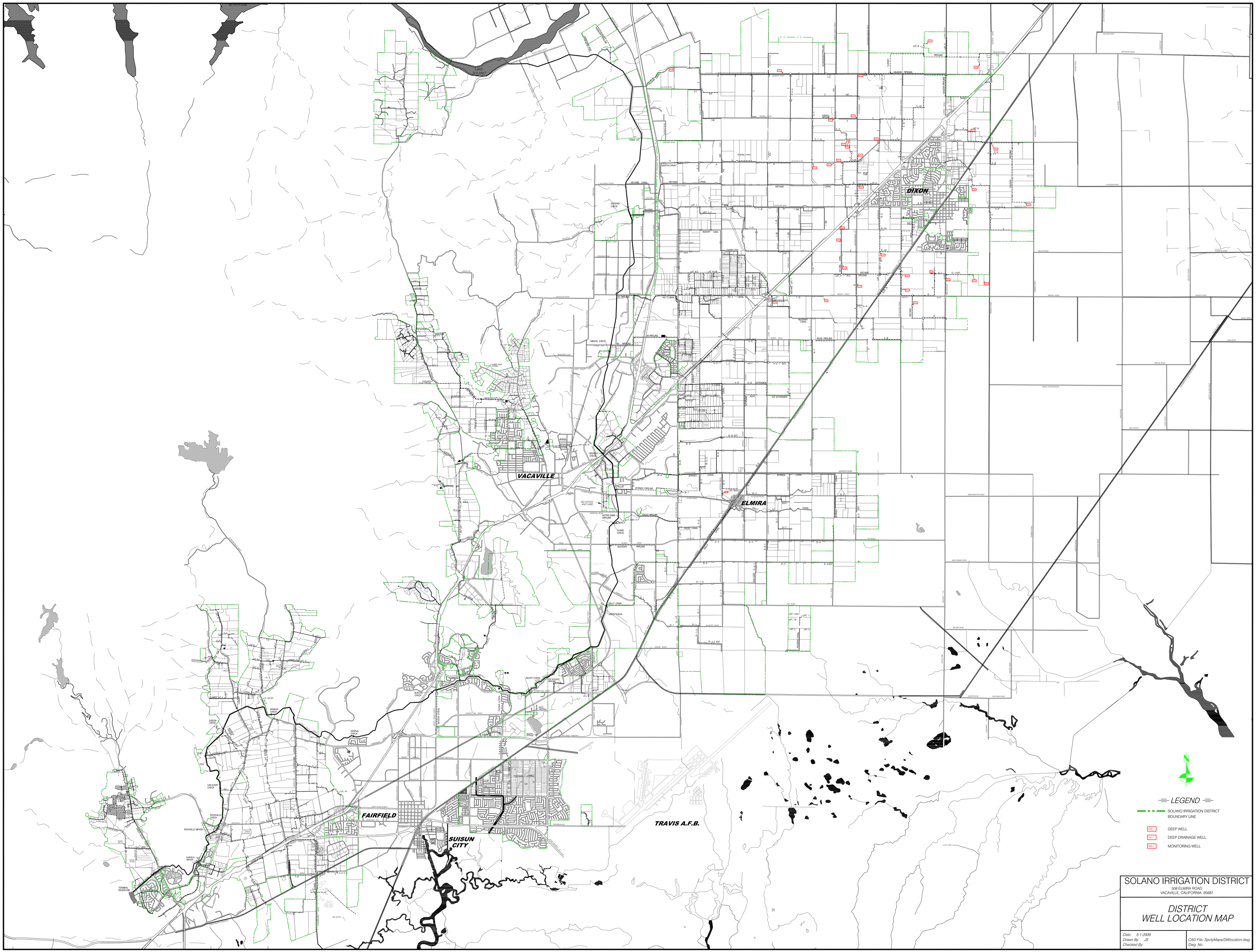
Impact Reduction Program to be used for the benefit of a non-Party or for use outside the service area of the Solano Project.

1.12 Solano County Water Agency will be paid for the water transferred by SID at the municipal industrial rate by the purchaser in accordance with the schedule for payments by the Party to SCWA under the Renewal Member Unit Contract.

2.0 SIDs' Contract with Landowners/Tenants: The Program will be implemented with voluntarily participating landowners and tenants by SID determining an amount of water to be allocated by SID in the ensuing water year for each acre of participating land, and a price per acre divided by the number of AF to be allocated yielding a per AF price for water tendered by landowner and tenant to SID. Landowners will be required to allocate full measurable fields or tracts to the Program. Parcels of 20 acres or less in size will not be eligible. Water from land with permanent crops such as trees and vines will not be eligible for transfer. Participants in this relinquishment program shall not supplement their allocation with ground water at levels which exceed the historical average over the previous four (4) years. No more than 7,500 acres of SID lands will be removed from production in a water year under the Program. Specific guidelines and contract forms will be developed by SID prior to the beginning of the landowner solicitation period and that information will be provided in a notice to owners of eligible lands.

(Final 11/30/98)

Attachment F: District Map of Groundwater Facilities


DIXON
VACAVILLE
ELMIRA
FAIRFIELD
SUISUN CITY
TRAVIS A.F.B.
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
DW 1
DEEP WELL
DD 1
DEEP DRAINAGE WELL
MW 1
MONITORING WELL
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
DISTRICT
WELL LOCATION MAP
Date: 5-1-2009
Drawn By: JS
Checked By:
CAD File: SpctyMaps/DWlocation.dwg
Dwg. No.

Attachment G: Groundwater Management Plan

SOLANO IRRIGATION DISTRICT

SENATE BILL 1938

GROUNDWATER MANAGEMENT PLAN UPGRADE

January 2006

SUMMERS ENGINEERING, INC.
Consulting Engineers
Hanford, California

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Appendix "A" – Public Notices

INTRODUCTION

District Information

The Solano Irrigation District (District), Plate 1, was organized in 1948 under the provisions of the California Irrigation District Law for the purpose of contracting for a surface water supply from the Solano Project being developed by the U. S. Bureau of Reclamation. The District is located in Solano County along Interstate 80 from approximately Fairfield in the southwest to the Dixon-Davis area in the northeast. It extends into several small valleys in the Fairfield and Vacaville area, but the majority of the District lands lie to the east of the Vaca Mountains. At present, there are approximately 72,500 acres in the District.

Following the District's formation, a substantial effort was initiated by the District and Solano County resulting in project authorization and congressional funding for the construction of Monticello Dam and Lake Berryessa, the Putah Diversion Dam, the Putah South Canal, and the District's irrigation distribution system. The construction of Solano Project facilities was completed in six years and the first project water delivered in the spring of 1959. All lands within the District had water available by the spring of 1963. A principal purpose of the supplemental Solano Project water supply was to offset the overdraft which resulted from groundwater extraction for irrigated agriculture in Solano County.

Groundwater Management Plan Upgrade

In 1995, following public hearings, the District adopted a Groundwater Management Plan prepared in accordance with the requirements of Assembly Bill 3030. Since adoption of the Groundwater Management Plan, the District has continued monitoring the groundwater levels and quality within its service area to assure groundwater resources of the basin are maintained and sustainable for the beneficial use of all parties. Senate Bill 1938, passed by the legislature and approved by the Governor in

September 2002, encourages an agency with an existing groundwater management plan to upgrade its plan if it wants to be eligible for state funds which may become available in the future for the construction of groundwater projects or groundwater quality projects in Solano County. The District made the decision to upgrade its existing Groundwater Management Plan to be eligible for any future available funding.

A letter was sent to cities and public water agencies in the Solano County Putah Creek Fan which utilize groundwater resources notifying them of the District's plan to upgrade their Groundwater Management Plan. The District also notified farmers through the District Irrigation Newsletter. A Public Hearing was held on August 15, 2005, to provide interested parties with information on the anticipated changes which might be incorporated into an upgraded Groundwater Management Plan and to give everyone the opportunity to provide comment on any issues of concern regarding groundwater management within the Solano Irrigation District. A copy of the letter sent to Public Agencies and the Irrigation Newsletter notification is included in Appendix A.

GROUNDWATER BASINS

The Solano Irrigation District is located within two different groundwater basins as described by the California Department of Water Resources in Bulletin 118 (Update 2003). The Vaca Mountains west of Vacaville divide the District between the San Francisco Bay Hydrologic Region and the Sacramento River Hydrologic Region. The two different groundwater basins depicted on Plate 2 are named the Solano Subbasin and the Suisun-Fairfield Groundwater Basin. The Suisun-Fairfield Groundwater Basin includes the District lands located in Green Valley, Suisun Valley, and the area southerly and westerly of Fairfield. The Solano Subbasin is located in the southwestern portion of the Sacramento-San Joaquin Delta and includes the vast majority of the agricultural lands of the District. Plate 3 indicates the boundaries of other adjacent public agencies that overlie the same groundwater basins.

GEOLOGY AND GROUNDWATER RESOURCES

The geology and groundwater resources of the Solano Irrigation District have been described and detailed in various reports prepared by the U.S. Bureau of Reclamation, the California Department of Water Resources, and the United States Geological Survey (U.S.G.S.). The most detailed report on geology and groundwater resources for the Solano County area was prepared by the U.S.G.S. in their Water Supply Paper 1464. Geologic mapping and field studies were conducted for this report during the 1950's and the report was published in 1960. The Solano Irrigation District prepared a "Groundwater Resources" report summarizing existing data and many of the previous groundwater reports in 1988.

District acreage is located in seven different hydrogeologic sub areas within Solano County as indicated on Plate 4. Following is a general description of the geology and groundwater resources for each sub area.

Putah Creek Fan (Area I)

Putah Creek, after leaving its narrow canyon in the Vaca Mountains, flows southeasterly from the foothills towards the Sacramento River where it has deposited a delta-like mass of sands, gravels, and silts. This deposit is usually referred to as an alluvial fan. The apex of the alluvial fan lies near Winters and the fan deposits, through geologic time, have spread out to the east and southeast for a distance of approximately twenty miles.

An alluvial fan is formed over geologic time by a creek which has often changed its course through the years. Sands and gravels are deposited by high velocity flows during times of flood while lower velocity flows deposit silts. Without obstructions, the Putah Creek Fan would have swung farther to the north into Yolo County. Putah Creek's swing to the north, however, was limited by the low hills associated with the Dunnigan-Plainfield anticline; an up-arching of older sedimentary deposits. This constraint resulted

in the Putah Creek Fan being developed in what is now easterly Solano County. The alluvial deposits in the Putah Creek Fan extend to depths of 50 to 130 feet. The shallowest deposits are found near the apex of the fan close to Winters, while to the east and southeast near Dixon they become thicker.

Within the Solano Irrigation District, the most productive groundwater wells have been those constructed in the Putah Creek Fan which tap the groundwater aquifers in the alluvial material and the underlying coarse grained sediments of the Tehama Formation. The Tehama Formation is a mixture of sandy clays, sands, gravels, and related sediments which daylights in the English Hills westerly of Interstate 505. The Tehama Formation extends to depths of nearly 3,000 feet beneath the central and eastern portions of the Putah Creek Fan. The specific capacity for wells in the Putah Creek Fan typically exceeds 20 gallons per minute/foot (gpm/ft) and well flows have exceeded 2,000 gallons per minute (gpm).

Los Putos Foothills (Area II)

This sub area consists of the rolling hills between Vacaville and Lake Solano and includes the easterly region of the English Hills. These hills are outcrops of the Tehama Formation which contain the only aquifers that might be expected in the sub area. There are some stringers of shallow alluvium of which Sweeney Creek is the most extensive. This alluvium, however, is insignificant as a source of groundwater. Test holes drilled by the District in 1988 indicate there are few gravel layers in the upper 1,000 feet of the Tehama Formation near Interstate 505 in this sub area. See Plate 4 for location. The electric logs suggest that the coarse grained gravels of the Tehama Formation may be found at depths ranging from 1,000 to 2,000 feet at this location. Westerly of the District boundary, gravels in the upper portion of the Tehama Formation may be present at relatively shallow depths.

Southwest Putah Plain (Area III)

The Southwest Putah Plain lies to the south and west of the Putah Creek Fan. The soils in this area are alluvial in nature but have been deposited from the smaller streams such as Sweeney, Ulatis, and Alamo Creeks. These alluvial deposits consist mostly of clay and have thinner less extensive and less permeable gravels than those of the Putah Creek Fan. The alluvial deposits in this sub area also overlie the Tehama Formation. The coarse grained permeable zones of the Tehama Formation have been tapped by the wells of the City of Vacaville along Elmira Road where wells to a depth of approximately 1,200 feet have been drilled.

English Hills Vaca Valley (Area IV)

Portions of the District are located within Vaca Valley and on the westerly slopes of the English Hills. This sub area is underlain by old sedimentary rocks. Such rocks are usually considered non-water bearing. Small supplies of groundwater, however, may be obtained from sandstones which are poorly cemented or from fractured cemented sandstones. The yield of wells in this area is usually only a few gallons per minute.

Tolenas Bench (Area V)

The Tolenas Bench is used to designate the sub area which extends for about 8 miles northeasterly from Fairfield, and in which there is essentially no pumping of groundwater. Topographically, the Tolenas Bench is characterized by many flat valleys and low hills. The valleys are underlain by alluvial deposits less than 100 feet thick. Beneath the thin alluvium are hard non-water bearing rocks. Some water may be found in fractures, but such water is highly mineralized. The alluvium, much of it deposited by Laurel Creek, has poor permeability.

Suisun Valley (Area VI)

The Suisun Valley sub area is underlain by the alluvium of Suisun and Ledgewood

Creeks deposited during the same geologic period as the Putah Creek Fan. However, because these creeks have smaller flows the alluvial materials are finer-grained and less permeable. There are many silty sands and only thin gravel layers. In the upper reaches of Suisun and Ledgewood Creeks, the alluvium is narrow and less than 100 feet deep. Further south where the valley widens, the alluvial deposits thicken to 200 feet or more. In the southern area, the top 50 feet is mostly clay and the gravel layers are found at greater depths. Beneath the alluvial deposits are old sedimentary and volcanic rocks containing highly mineralized waters. Well yields in the alluvium beneath Suisun Valley average about 200 gpm with specific capacities around 5 to 10 gpm/ft. The old (cretaceous) rocks tributary to Suisun and Ledgewood Valleys contain highly mineralized waters, including high boron concentrations. Waters draining from these rocks into the alluvium of Suisun Valley have created a general problem of elevated boron concentrations limiting the use of these waters for many crops.

Green Valley (Area VII)

The Green Valley sub area, located in the extreme southwestern corner of the Solano Irrigation District, has some unique hydrogeologic characteristics. This valley has been developed by erosion along an important north-south geologic structure, the Green Valley Fault. Active fault movement has stopped and the outcrop of the fault trace has been covered by the alluvial deposits of Green Valley Creek. Beneath these alluvial deposits are the Sonoma volcanics. Whereas drilling into the bedrock below Suisun Valley would not be expected to yield reasonable quantities of good quality water, deeper drilling in Green Valley would have a much better chance of success. The specific capacity of wells in this area, however, is only about 2 gpm/ft.

HISTORICAL MANAGEMENT OF GROUNDWATER RESOURCES

Prior to the construction of the Solano Project and the start of surface water deliveries to the Solano Irrigation District in 1959, groundwater levels in the Putah Creek Fan

were dropping due to the excessive agricultural groundwater pumping. With the arrival of a surface water supply there was a significant reduction in groundwater pumping. The combination of reduced pumpage and recharge from the surface water applications caused a reversal in the downward trend of water levels. Within a short number of years shallow groundwater levels occurred in some areas of the District. This reversal is documented by Plate 5 which shows historic groundwater profiles across the Putah Creek Fan. In accordance with their contract with the U.S. Bureau of Reclamation for a distribution loan, the District installed a grid of shallow groundwater wells throughout the District. These observation wells together with other wells scattered throughout the District continue to be measured regularly to monitor the groundwater level status within the District.

In order to conjunctively use the groundwater in the Putah Creek Fan, the District applied for a Rehabilitation and Betterment Loan from the U.S. Bureau of Reclamation in 1967. When loan funds became available in 1971, a portion of the funds were used to undertake a program of well construction to give the District the capability of increasing their groundwater pumping in the critical shallow water table areas of the Putah Creek Fan near Dixon. The District began its program of constructing drainage wells based on the depth to groundwater levels measured in the fall of 1966 and the spring of 1967. The District drilled eleven drainage wells between 1971 and 1974 that give the District the flexibility of pumping additional groundwater when shallow groundwater levels begin to rise within the District. The wells are predominately located in areas where the discharge from the wells can be introduced into the existing distribution system to augment the District's surface water supply. In addition, the District entered into cooperative agreements with many landowners whereby private deep wells were turned over to the District for operation, maintenance, and water supply purposes. The District operates these existing deep wells to manage both the elevation of shallow groundwater and also, during drought periods, to provide an additional supply of water for the District.

Groundwater levels are also monitored and contour maps have been prepared by the District and by the Solano County Water Agency providing an ongoing status for groundwater conditions in the service area. Through the years the Department of Water Resources, the U. S. Bureau of Reclamation, and the U.S. Geological Survey have also monitored water levels in various wells located throughout the service area. The District obtains water quality analyses on a rotating basis for some agricultural wells in the Putah Creek Fan. Additional analyses are performed, when needed, throughout the service area. Concern regarding the potential for groundwater contamination plus additional monitoring regulations, have increased the number of analyses in recent years.

GROUNDWATER MANAGEMENT PLAN GOALS

Groundwater is an important factor in the District's water supply, and their overall goal in preparation of this plan is to help maintain a long term, sustainable, reliable supply of high quality groundwater which will benefit the water supplies for all parties within the service area. Senate Bill 1938 incorporated all of the original Assembly Bill 3030 groundwater management plan requirements but stated the new plan should also include basin management objectives, "... components relating to the monitoring and management of groundwater levels within the groundwater basin, groundwater quality degradation, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin."

The upgraded plan includes the following specific basin management objectives:

1. Monitor and manage groundwater levels that will result in a net benefit to groundwater users throughout the District.
2. Strive to maintain a reliable and consistent groundwater quality for the beneficial use of groundwater users in the District.
3. Strive to minimize the risk of future significant impacts from land surface

subsidence.

4. Facilitate conjunctive use operations which will encourage the optimum beneficial use of water resources within the District.

Within the Solano Irrigation District there are only small uncontrolled streams flowing easterly out of the Vaca Mountains or westerly and southerly through Suisun Valley (See Plate 1). There are no substantial surface steams where changes in flow and surface quality directly affect groundwater levels or quality or are significantly impacted by groundwater pumping in the basin. The flows in Putah Creek, located north of the District boundaries, and the source of the surface water supply provided by the Solano Project are managed by water right agreements recently resolved through litigation. Therefore, no basin management objective is included in this plan addressing management of surface flows and surface water quality.

GROUNDWATER MANAGEMENT PLAN COMPONENTS

Monitoring of Groundwater Levels

One of the primary objectives of the groundwater management plan is to provide the means to expeditiously monitor and analyze groundwater use and trends in order to be in a position to recommend any necessary actions for the wise and beneficial use of groundwater resources in the service area. As mentioned, monitoring wells were installed in the Solano Irrigation District following the construction of the distribution system in the early 1960's. Depth to groundwater measurements have been made on an annual basis in the spring and fall of each year. The District will evaluate on an annual basis changes in groundwater levels, and, if appropriate, recommend necessary actions that will result in a net benefit to groundwater users throughout the District. The number and location of existing monitoring wells will also be evaluated and recommendations regarding the installation of additional monitoring wells will be made as needed.

Water Quality Monitoring

The District will continue to monitor groundwater quality on a rotating basis using existing agricultural wells in the District service area. Groundwater quality is generally excellent except for high naturally occurring boron levels in Suisun Valley and in recent years high nitrate levels around Dixon in the Putah Creek Fan. It appears the higher nitrate levels originate in the shallower sediments. It is thought the nitrate levels are due to farming practices or from percolation from the many dairies and industries that historically were located in the area. Ongoing monitoring of water quality at select wells throughout the service area will provide a basis for determining if there is any future degradation to groundwater quality.

Land Subsidence Monitoring

Differential land surface subsidence has occurred in several California groundwater basins following excessive groundwater pumping and the lowering of water levels. Significant land surface subsidence has not been reported in Solano County. A recent level circuit conducted from the Putah South Canal to near the northeast corner of the District indicated bench mark elevations along the Vaughn Canal were almost identical with the elevations originally established when the canal was constructed nearly 50 years ago. To minimize the risk of future land subsidence, the District will continue to monitor and review existing groundwater levels. Significant variations from the historic groundwater levels would indicate there is a greater risk of land subsidence.

Facilitate Conjunctive Use Operations

Conjunctive use includes the planned management and coordination of two or more water resources to accomplish the greatest long term benefit. Conjunctive use has the goal of balancing recharge and extraction of groundwater over a given time. Excessive pumping in a groundwater basin has the potential of lowering groundwater levels and increasing water quality deterioration if there is not adequate long term recharge occurring. The Solano Irrigation District has practiced and facilitated a conjunctive use

operation since the construction of the Solano project in the early 1960's. One reason the construction of the Solano Project was pursued was because of the over pumping and lowering of groundwater levels in the Putah Creek Fan. When the District first began delivery of water to lands in the Putah Creek Fan, groundwater levels near Dixon were approximately seventy-five feet below ground level. The reduction of groundwater pumping following the delivery of surface water caused a significant rise in groundwater levels. Since the late 1960's, spring groundwater levels throughout the Putah Creek Fan have been maintained at a fairly constant level varying from approximately five to thirty feet below ground level.

Following the completion of the distribution system, landowners who now had a surface supply were encouraged to sell their existing wells to the Solano Irrigation District. The District presently owns approximately forty groundwater wells throughout the District. The District drilled or purchased wells to provide the capability of facilitating conjunctive use operations throughout the District, if needed. Some landowners still own and operate their own wells. Additional deep wells were installed by the District adjacent to pipelines, ditches, or conveyance facilities so that the yield of the wells could be delivered into the existing distribution system. The District will continue to encourage landowners wanting to drill additional wells to place these wells adjacent to District distribution facilities so that the well's capacity could be utilized by the District and delivered into District facilities for distribution throughout the District to further facilitate conjunctive use operations.

During the last few years of California's six-year drought (1987-92), increased groundwater pumping occurred to supplement the District's available surface supplies. The increased groundwater pumping did lower groundwater levels in the Putah Creek Fan. The District's limited conjunctive use program allows landowners to pump groundwater when surface supplies are reduced. The availability of a surface water supply limits groundwater pumping in years of excess surface supplies allowing the groundwater basin to recharge and water levels to rise. This is what occurred following

California's six-year drought. Typically, the cost for surface water supplies is less than the energy cost to pump groundwater. Therefore, when the surface supply allocation is adequate, there is usually a minimal need for the District or landowners to pump groundwater to supplement their water supply needs.

Under the Groundwater Management Plan, the District will continue to educate landowners within the District on the costs of well water. The District will review and revise, as necessary, its existing allocation of costs for surface and groundwater supplies to determine if there is a more efficient method for managing conjunctive use operations. If shallow groundwater levels begin to rise in a certain area of the District, the Distinct may attempt to estimate the amount of groundwater which can be made available from District and privately owned wells in that area and attempt to increase the allocation to all District landowners by operating the District wells and offering inducements to private landowners to operate their wells. When surface water is available, however, the District will continue to encourage landowners to use this supply versus groundwater pumping to allow the groundwater levels to recharge in the Putah Creek Fan. Groundwater levels have been maintained at a fairly consistent level in the Putah Creek Fan for the last 40 years. Generally levels have reduced during drought periods when increased pumping has occurred and have risen during excessive wet years when there has been minimal groundwater pumping.

The District will continue to review and analyze the groundwater data developed to determine if there are more efficient methods for facilitating conjunctive use operations in the District. The problem with establishing fixed methods, however, is that there are often many factors affecting conjunctive use operations. The District does not know with certainty the long term surface supply that will be available. Encouraging excessive surface water use when the supply may not be available is counterproductive to efficient water resource planning and management. Cropping patterns are also individual landowner decisions. A change in cropping patterns may affect the total water demand and the availability of water throughout the District. The District plans to

maintain flexible operating criteria concerning management of the groundwater levels in the District due to the uncertainty of supply and annual demand.

Continuing education and information provided to landowners in the District will be an important part of facilitating conjunctive use operations in the District. The District has established an agricultural advisory committee that will be utilized to obtain input and provide information to landowners in the District. Some landowners and their families have been farming in the District for many years and can remember the conditions during the early 1960's, at the commencement of the project, when groundwater levels dropped to the lowest they had ever been in the Putah Creek Fan. These landowners understand the benefits of a conjunctive use program and appreciate the ongoing groundwater management that has occurred within Solano Irrigation District.

Water Management

During the last 20 years the District has had an active water management (conservation) program. During the California 1976-77 and 1987-92 droughts the District was actively involved constructing check dams and installing recovery pumps in various District drains so available tailwater and drainage flows could be utilized as efficiently as possible. This helped minimize the amount of groundwater pumped to meet irrigation supplies. Farmers have also been challenged to increase on-farm irrigation efficiency. As a Federal water contractor, and in response to the requirements of the Central Valley Improvement Act of 1992, the District prepared a Water Conservation Plan in 1997 in accordance with the criteria developed by the U.S. Bureau of Reclamation (USBR). The USBR endorsed this plan and in 2003 the District prepared their first update to their plan. During the 1990's the District attended meetings coordinated by the California Department of Water Resources in response to the *Agricultural Water Suppliers Efficient Water Management Practices Act of 1990* (Assembly Bill 3616). Through this involvement they voluntarily became a signatory of the 1996 *Memorandum of Understanding Regarding Efficient Water Management*

Practices by Agricultural Water Suppliers in California and a founding member of the California Agricultural Water Management Council established thereof.

Well Construction Policy

Solano County has an existing water well ordinance regulating the construction, reconstruction, destruction, and inactivation of water, cathodic protection, and monitoring wells within Solano County. Individuals constructing a well are required to obtain a permit from the County for the construction of such a well. The County has adopted by reference the minimum standard for the construction of wells as specified in the Department of Water Resources Bulletins 74-81 and 74-90. All wells constructed within the Solano Irrigation District are required to meet the minimum construction standards outlined in the Solano County Water Well Ordinance. The District will develop additional construction and well spacing guidelines for the construction of District deep wells, as needed, to minimize concerns related to unanticipated drawdown problems and potential water quality contamination between shallow and deep aquifers.

Development of Relations with State and Federal Regulatory Agencies

The District, due to its many water resource activities, presently maintains a working relationship with State Water Resources Control Board staff and Regional Water Quality Control Board staff that oversee and provide the framework and direction for California's groundwater protection efforts. National policy and direction relating to groundwater protection efforts are provided by the Environmental Protection Agency (EPA). The California Department of Health Services, Division of Drinking Water, has administered for EPA the preparation of Drinking Water Source Assessment and Protection Program reports. The District has prepared several of these reports for groundwater wells providing a potable supply to different developments within the District. The District will continue to evaluate information provided by both the State and Regional Water Quality Control Boards and also the Environmental Protection Agency regarding planning efforts to improve and protect groundwater resources.

Coordination with Local Agencies

The Solano Irrigation District maintains a strong working relationship with public agencies/cities in Solano County that are involved in groundwater resource issues. These include the City of Vacaville, City of Dixon, Maine Prairie Water District, Reclamation District No. 2068, and Solano County. The entities are cooperating on groundwater issues and studies under the auspices of the Solano Water Authority, a Joint Power Authority formed in 1987 to study, plan and finance water projects. The Solano County Water Agency also participates, providing financial support and expertise. The District provides the leadership for interagency groundwater studies. A cooperative study was entered into in 1993 among the District, Vacaville, and the Solano County Water Agency to develop a "Coordinated Groundwater Data Base and Monitoring Program" for the service area (Dixon area groundwater data was also included in the study). The purpose of the study was to build common data bases to provide information on the quality and quantity of groundwater in the Putah Creek Fan/Tehama Formation groundwater basin which could be utilized to analyze and help estimate the impacts of existing and proposed groundwater pumping in the basin.

During the 1990's the Solano Irrigation District and the City of Vacaville, the two largest groundwater users in Solano County, entered into a Master Water Agreement with specific management goals related to groundwater use. The purpose of this agreement was to work together in a cooperative manner to protect and maintain the groundwater resources of the area and to prevent the annual use of groundwater that exceeds the safe yield.

In 1995 the Solano Water Authority developed guidelines for optimum well spacing to minimize potential groundwater impacts from excessive groundwater pumping in the basin. The Solano Irrigation District also recently participated with other basin groundwater stakeholders in the development of guidelines for the upgrade of groundwater management plans originally prepared under Assembly Bill 3030. The

goal was to encourage cooperation and support for the preparation of uniform basin guidelines that would be compliant with the recent amendments to the California Water Code resulting from Senate Bill 1938.

The District will continue to participate in future Solano Water Authority groundwater studies, and will continue to interact with any other agencies, as required, to protect and encourage the wise use of the valuable groundwater resources within the Solano Irrigation District. Where feasible, the District will enter into a Memorandum of Understanding (MOU) with local public entities to encourage the coordination and utilization of groundwater resource information and the development of consistent design criteria.

MONITORING PROTOCOLS

In accordance with Senate Bill 1938, the District is to adopt appropriate monitoring protocols designed "... *to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem, and flow and quality of surface water that directly affect groundwater levels or groundwater pumping in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.*"

The upgraded water management plan includes the following monitoring protocols:

Groundwater Level Monitoring

Under the Groundwater Management Plan, the District will continue monitoring the groundwater levels throughout the District. This will be done by measuring the depth to groundwater in the various District groundwater supply wells and monitoring wells a minimum of twice each year, during the spring and fall. This data will be entered into a computer data base that can be utilized to create hydrographs of individual wells and/or

to prepare groundwater contour maps or other reports summarizing the status of the groundwater basin as needed. On an annual basis a brief report will be prepared summarizing the condition of the groundwater basin.

Static water levels often fluctuate from year to year and sometimes vary substantially within each year. The groundwater extraction, recharge, and storage of a given groundwater basin is considered to be in a good condition or in dynamic equilibrium when water level monitoring determines static water levels have generally stabilized over a period of years and there is neither a continuing increase nor decrease in groundwater levels. To determine whether or not the basin is in a dynamic equilibrium, the long term rise or fall in static water levels needs to be reviewed. It is recommended water levels be monitored for a period of at least five years to determine whether or not this has been achieved. The monitoring program should include a periodic review and evaluation of groundwater use in the area together with a summary of available surface water supplies to determine if there are other factors impacting the rise or fall of water levels. If during this five year period static water levels are found to be dropping in relation to the historic levels or set goals, then the District in their annual report, could issue a "caution" and notify other local agencies that groundwater pumping may be exceeding the acceptable yield of the groundwater basin. This caution period would remain in effect for two years and the District would continue to carefully monitor their groundwater pumping and static water levels. If after this two year period static water levels have not recovered or if they are found to still be dropping, and if there is no water supply emergency justifying continued pumping, then a decision should be made in coordination with other local agencies to reduce the respective annual groundwater pumping of each agency until the static water level measurements stabilize.

Groundwater Quality Monitoring

Groundwater wells providing a potable supply are already required, under Title 22 of the California Code of Regulations, to provide analytical results of domestic water

quality monitoring to the California Department of Health Services Drinking Water Program on a regular basis. The District will also monitor the groundwater quality of agricultural wells in the District. A minimum of 4 District agricultural wells spread out through the Putah Creek Fan will be sampled each summer and an irrigation water quality analysis performed. These 4 wells will be rotated with a different set of 4 wells every other year to develop and maintain a baseline of the service area groundwater quality. The water quality data will be tabulated in a brief annual report. This monitoring and ongoing review of groundwater quality will provide a basis for determining if degradation to groundwater quality is occurring.

Inelastic Surface Subsidence Monitoring

Significant land subsidence has not been reported in Solano County. To further verify whether land subsidence may be occurring, it is recommended a Global Positioning System (GPS) level survey of specific bench marks be performed across the Putah Creek Fan at 5 year intervals. GPS technology will provide the means to quickly and inexpensively determine if land subsidence is occurring. The elevation measurements of selected bench marks would be tabulated every 5 years and then compared to determine the significance of any subsidence occurring within the District service area.

Surface Water Flow and Quality Monitoring

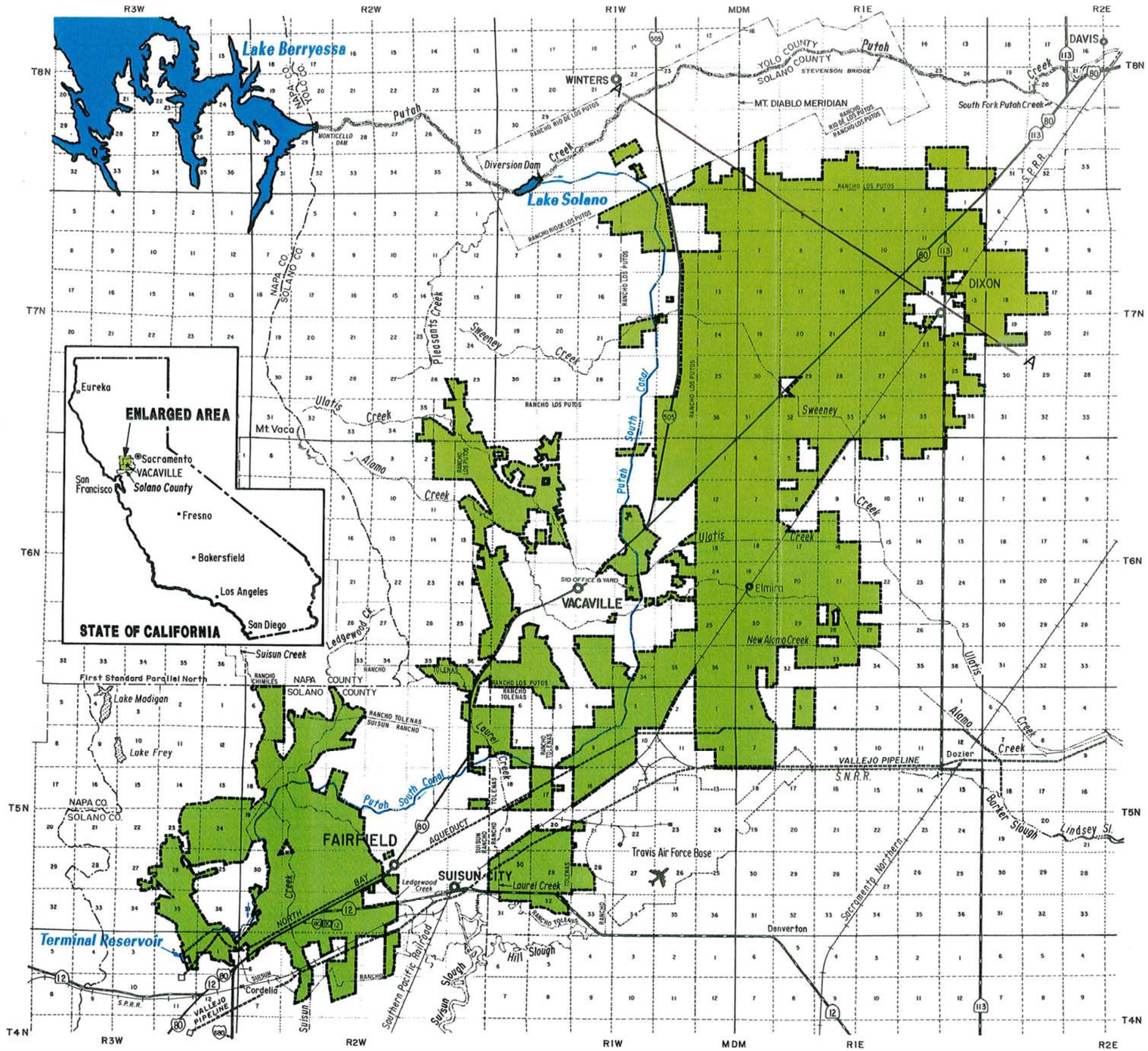
As mentioned, there are only small uncontrolled streams flowing easterly out of the Vaca Mountains or westerly and southerly through Suisun Valley (See Plate 1). There are no substantial steams where changes in flow and surface water quality directly affect groundwater levels or quality or are significantly impacted by groundwater pumping in the basin. Therefore, this groundwater management component is not applicable to the District and specific monitoring protocols are not proposed.

CONCLUSION

The Solano Irrigation District has been active in groundwater management issues since construction of the Solano Project in the 1950's. Implementation of the groundwater management components and the monitoring protocols included in this groundwater management plan upgrade will further promote responsible management of the groundwater basin in coordination with other local agencies and will provide the District with reliable information on current groundwater conditions. This information will help the District manage the groundwater resources available, and as stated in the overall goal, "... help maintain a long term, sustainable, reliable supply of high quality groundwater which will benefit the water supplies for all parties within the service area." The District will strive to meet at least once each year to coordinate its groundwater management plan with other public entities in the basin that utilize groundwater or may be impacted by the plan.

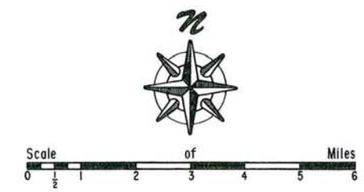
In developing and implementing the plan the District makes a commitment to minimize any adverse impacts on business activities and specifically its impact on agricultural activities. The preparation of this groundwater management plan upgrade shall not be interpreted as authorizing the District to make a determination of groundwater rights for any person or entity and will not authorize the District to limit or suspend any private groundwater extractions. If a determination is made through study and investigation that groundwater levels are dropping in the basin and a dynamic equilibrium is not being maintained, the District will coordinate with other local agencies the joint reduction of groundwater pumping until water levels recover.

Assembly Bill 3030 provided procedures for funding and implementation of groundwater management plans. This was not altered by Senate Bill 1938. However, the District's ongoing groundwater program has always been funded as part of its annual budget and it is not anticipated that any new fees will be imposed to implement the upgraded groundwater management plan.



SOLANO IRRIGATION DISTRICT

VACAVILLE CALIFORNIA



LEGEND

- DISTRICT BOUNDARY
- COUNTY LINE
- LAND GRANT BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- CREEK, SLOUGH, CANAL
- CITY
- RAILROAD
- PIPELINE
- AIRPORT (CIVILIAN, MILITARY)
- LANDS INCLUDED WITHIN DISTRICT

SUMMERS ENGINEERING, INC.
Consulting Engineers
HANFORD CALIFORNIA

JUNE 1988

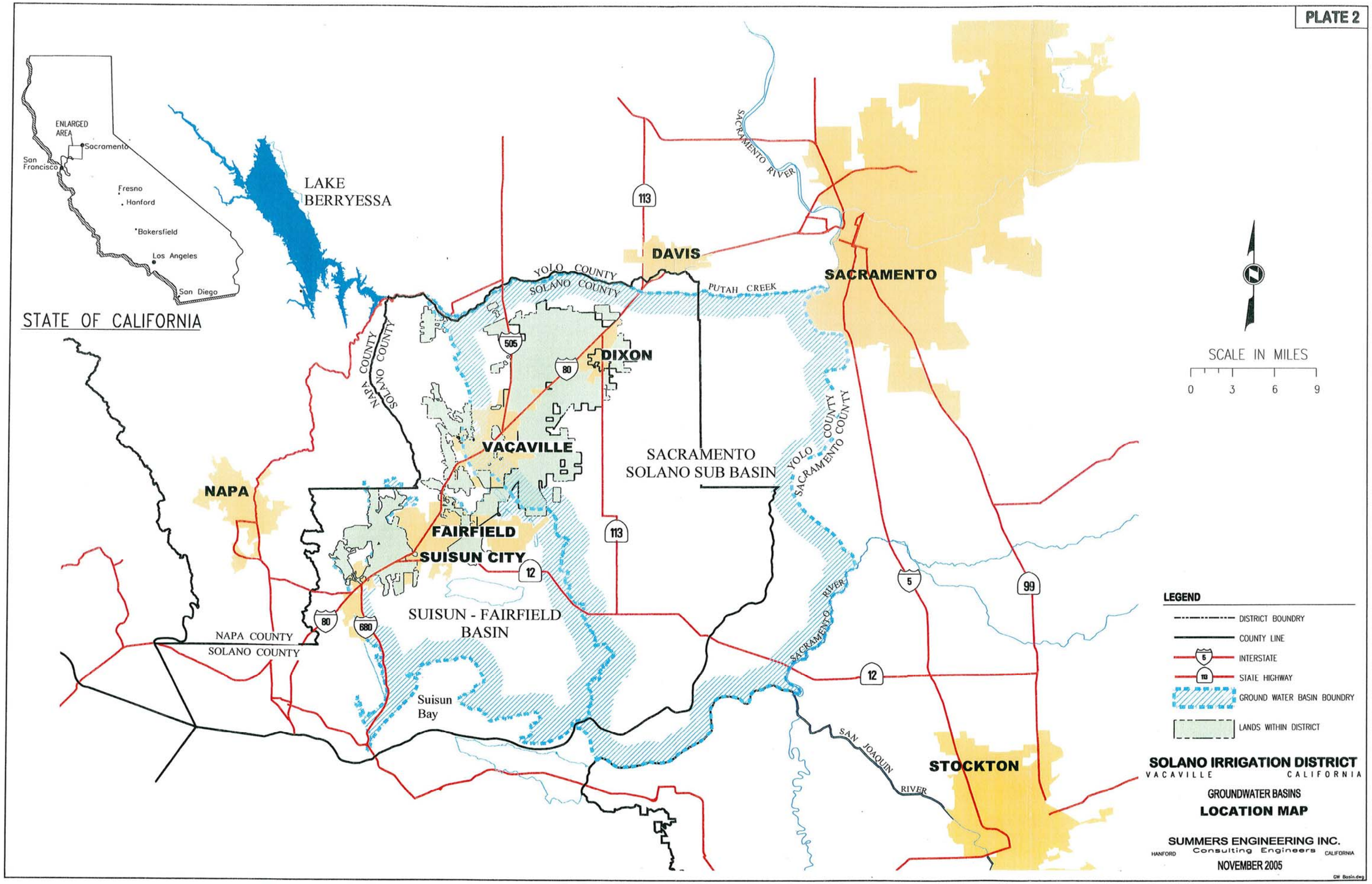


PLATE 2
ENLARGED AREA
Sacramento
San Francisco
Fresno
Hanford
Bakersfield
Los Angeles
San Diego
STATE OF CALIFORNIA
LAKE BERRYESSA
SACRAMENTO RIVER
DAVIS
SACRAMENTO
YOLO COUNTY
SOLANO COUNTY
PUTAH CREEK
DIXON
VACAVILLE
NAPA COUNTY
SOLANO COUNTY
SACRAMENTO SOLANO SUB BASIN
YOLO COUNTY
SACRAMENTO COUNTY
NAPA
FAIRFIELD
SUISUN CITY
SUISUN - FAIRFIELD BASIN
NAPA COUNTY
SOLANO COUNTY
Suisun Bay
SACRAMENTO RIVER
SAN JOAQUIN RIVER
STOCKTON
SCALE IN MILES
0 3 6 9
LEGEND
DISTRICT BOUNDRY
COUNTY LINE
INTERSTATE
STATE HIGHWAY
GROUND WATER BASIN BOUNDRY
LANDS WITHIN DISTRICT
SOLANO IRRIGATION DISTRICT
VACAVILLE CALIFORNIA
GROUNDWATER BASINS
LOCATION MAP
SUMMERS ENGINEERING INC.
HANFORD Consulting Engineers CALIFORNIA
NOVEMBER 2005

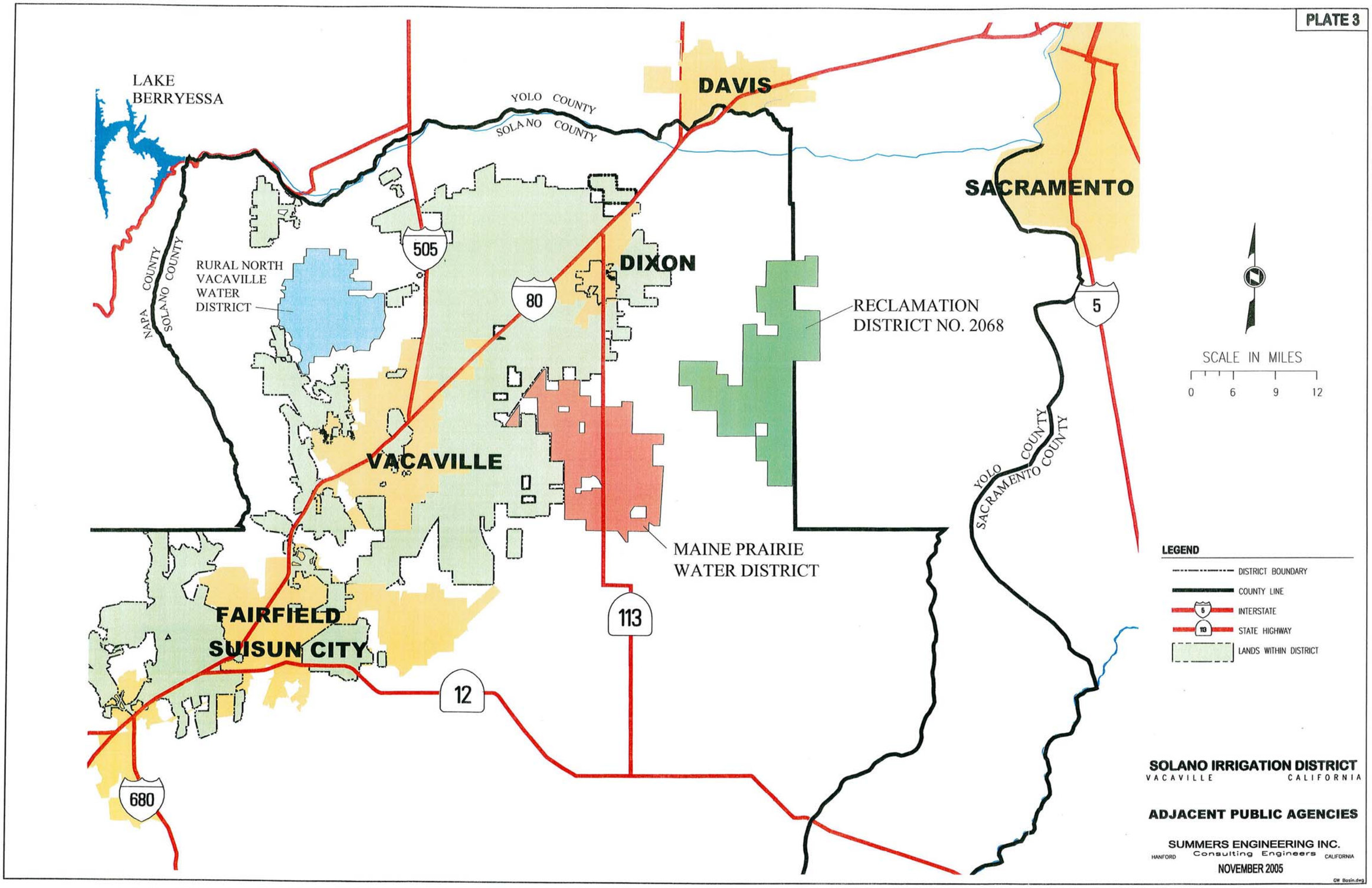
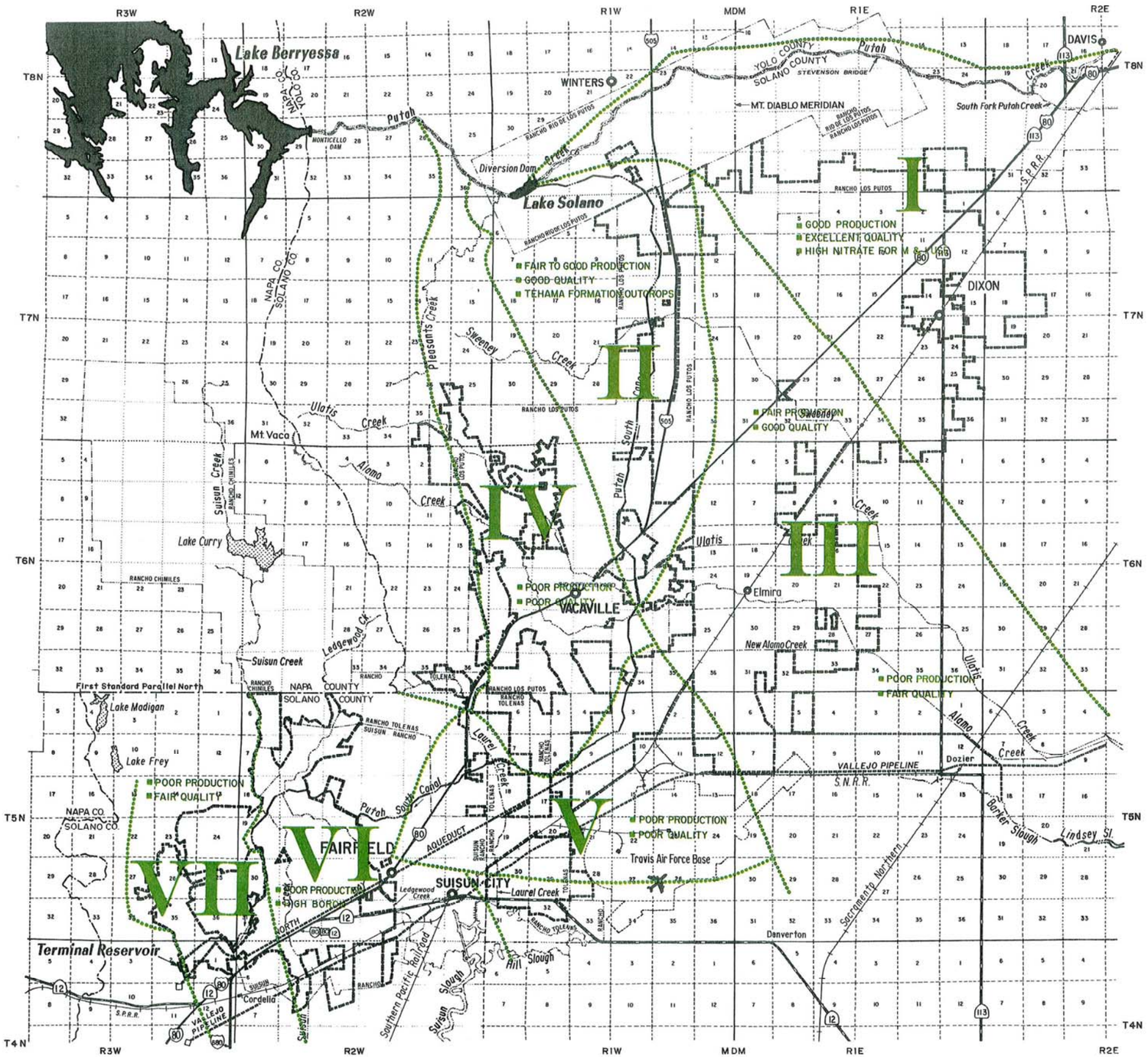


PLATE 3
LAKE BERRYESSA
YOLO COUNTY
SOLANO COUNTY
DAVIS
SACRAMENTO
NAPA COUNTY
SOLANO COUNTY
RURAL NORTH VACAVILLE WATER DISTRICT
505
80
DIXON
RECLAMATION DISTRICT NO. 2068
5
SCALE IN MILES
0 6 9 12
VACAVILLE
YOLO COUNTY
SACRAMENTO COUNTY
MAINE PRAIRIE WATER DISTRICT
FAIRFIELD
SUISUN CITY
113
12
680
LEGEND
DISTRICT BOUNDARY
COUNTY LINE
INTERSTATE
STATE HIGHWAY
LANDS WITHIN DISTRICT
SOLANO IRRIGATION DISTRICT
VACAVILLE CALIFORNIA
ADJACENT PUBLIC AGENCIES
SUMMERS ENGINEERING INC.
HANFORD Consulting Engineers CALIFORNIA
NOVEMBER 2005



SOLANO IRRIGATION DISTRICT

VACAVILLE CALIFORNIA

HYDROGEOLOGIC SUB - AREAS
WITH POTENTIAL GROUNDWATER AVAILABILITY

N

Scale of Miles
0 ½ 1 2 3 4 5 6

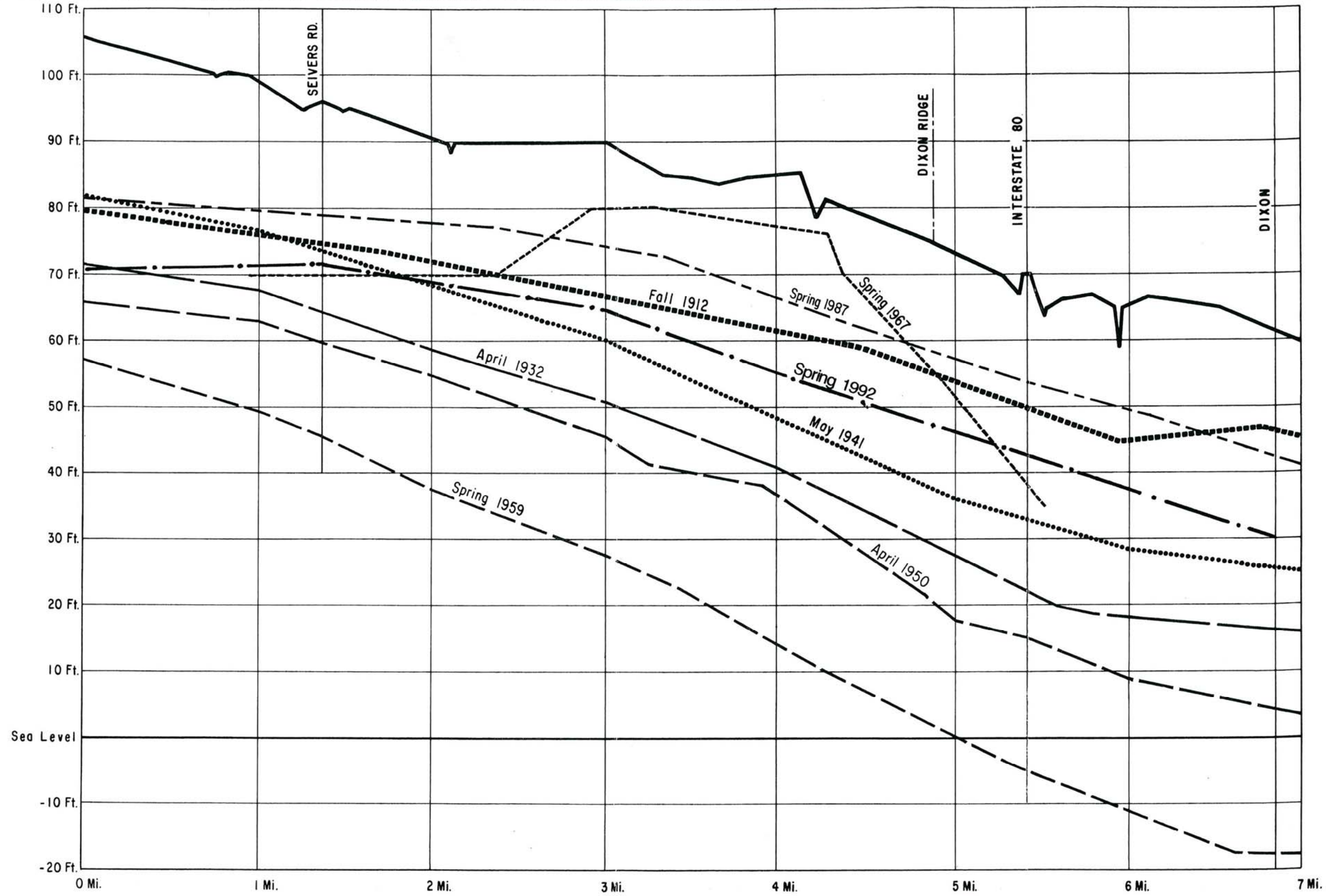
LEGEND

- DISTRICT BOUNDARY
- COUNTY LINE
- LAND GRANT BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- INTERSTATE HIGHWAY
- STATE HIGHWAY
- CREEK, SLOUGH, CANAL
- CITY
- RAILROAD
- PIPELINE
- AIRPORT (CIVILIAN, MILITARY)

PUTAH CREEK FAN	I
LOS PUTOS FOOTHILLS	II
SOUTHWEST PUTAH PLAIN	III
ENGLISH HILLS / VACA VALLEY	IV
TOLENAS BENCH	V
SUISUN VALLEY	VI
GREEN VALLEY	VII

SUMMERS ENGINEERING, INC.
Consulting Engineers
HANFORD CALIFORNIA

JUNE 1988



NOTE: For Profile Axis See Section A-A Plate 1

SOLANO IRRIGATION DISTRICT
VACAVILLE CALIFORNIA

GROUND WATER PROFILES

FEBRUARY 1995

APPENDIX A

PUBLIC NOTICES

1. A description of Basin Management Objectives
2. Components relating to the monitoring and management of groundwater levels within the groundwater basin, groundwater quality degradation, land surface subsidence, and changes in surface flow and surface water quality that may directly affect groundwater levels or quality or are caused by groundwater pumping.
3. Monitoring protocols to detect changes in the components listed above.
4. Preparation of a map showing the groundwater basin, District boundaries and the boundaries of other local agencies that overlie the groundwater basin.

You are cordially invited to attend this meeting, listen to the anticipated changes which will be proposed for incorporation into the new plan, and to provide comment on any issues of concern regarding groundwater management within the Solano Irrigation District. If you have any questions, you may reach me at 455-4009.

Sincerely,

Suzanne Butterfield
General Manager

SB/RR/kj

Mike Hardesty, Manager
Reclamation District No. 2068
7178 Yolano Road
Dixon, CA 95620-9621

Subject: ***Upgrade of the Solano Irrigation District Groundwater Management Plan***

Dear Mike:

In 1995, the Solano Irrigation District (District) approved a Groundwater Management Plan prepared under the authority of Assembly Bill 3030. During the past 10 years, the District has continued monitoring the groundwater levels and quality within its service area. The District, under Solano Water Authority #2, has been meeting with other public entities utilizing the same groundwater basin. The goal has been to coordinate planning efforts to assure groundwater resources of the basin are maintained and sustainable for the beneficial use of all parties.

Senate Bill (SB) 1938, passed by the legislature and approved by the Governor in September 2002, encourages an agency with an existing groundwater management plan to upgrade its plan if it wants to be eligible for state funds which may become available in the future for the construction of groundwater projects or groundwater quality projects in Solano County.
The District has made the decision to upgrade its existing groundwater management plan so it will be eligible for any future funding. A public meeting will be held at 6:00 p.m on August 15, 2005 at the office of the Solano Irrigation District, 508 Elmira Road, Vacaville, CA to discuss the following anticipated changes which will be incorporated into an upgraded groundwater management plan for the Solano Irrigation District:

508 ELMIRA ROAD, VACAVILLE, CA 95687-4999 · TELEPHONE (707) 448-6847 · (800) 675-3833 · FAX (707) 448-7347

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CA 95687

PRESS RELEASE

For Immediate Release

Contact: Suzanne Butterfield
General Manager
455-4009

Upgrade of the Solano Irrigation District Groundwater Management Plan

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3. The District shall adopt monitoring protocols to detect changes in the components listed above.

4. Preparation of a map showing the groundwater basin, District boundaries and the boundaries of other local agencies that overlie the groundwater basin.

The public is invited to attend this meeting, listen to the anticipated changes which will be proposed for incorporation into the new plan, and to provide comment on any issues of concern regarding groundwater management within the Solano Irrigation District.

# # #

SOLANO IRRIGATION NEWS

PRODUCED BY SOLANO IRRIGATION DISTRICT

August 2005

Upgrade of the Solano Irrigation District Groundwater Management Plan

In 1995 the Solano Irrigation District (District) approved a Groundwater Management Plan prepared under the authority of Assembly Bill 3030. During the past 10 years the District has continued monitoring the groundwater levels and quality within its service area. The District meets periodically with other public entities utilizing the same groundwater basin. The goal has been to coordinate planning efforts to assure groundwater resources of the basin are maintained and sustainable for the beneficial use of all parties.

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4. Preparation of a map showing the groundwater basin, District boundaries and the boundaries of other local agencies that overlie the groundwater basin.

The public is invited to attend this meeting, listen to the anticipated changes which will be proposed for incorporation into the new plan, and to provide comment on any issues of concern regarding the management of groundwater wells owned by Solano Irrigation District.

Employee Profile: Watertender William "Mac" MacDonald

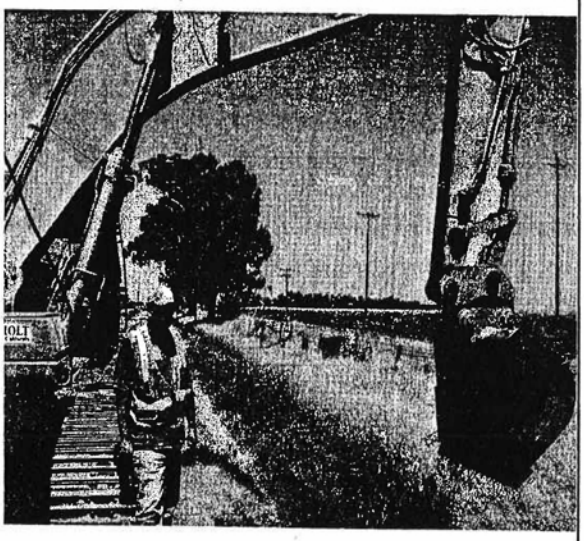
Mac MacDonald manages the 704 beat near Dixon, which includes the Weyand Pipeline, the lower Weyand Canal, and Vaughn Pipe Lateral 5. The beat stretches from the west side of Dixon to Pedrick Rd., on the east side. Mac is working his 4th year for S.I.D., all as a watertender on the 704 beat.

Mac says, "The 704 beat is interesting because the main part of the beat is the Weyend pipeline. During the busy part of the season the pipeline reaches capacity, and we have to schedule our deliveries to farmers on a first come first served basis. The hard part of the job is keeping all of our customers satisfied. What I like about the job, though, is that I can manage my schedule to best serve the farmers. Between the other watertenders, the farmers and irrigators, we all work together to get the water delivered."

Mac enjoys the changes in the year when water season ends and maintenance begins, and then back to water season in the Spring. "The change of pace is nice. I plan my vacations in the Winter when the time off doesn't affect water deliveries. In the Spring its nice to be back on the beat." When not on the job, Mac enjoys boating, fishing, and raising his family.

508 ELMIRA ROAD, VACAVILLE, CALIFORNIA 95687 • TELEPHONE (707) 448-6847 • (800) 675-3833 • FAX (707) 448-7347

Rehabilitation & Betterment Update - Annual Projects



Excavator Operator Dennis Hennagin

Maintenance crews have been busy this month cleaning and clearing out drains throughout the District. Silt and vegetation builds up quickly up during the irrigation season, requiring annual maintenance. In addition, drain undercrossings are being replaced when necessary, with new culvert pipes being installed. Roads over new undercrossings are paved as well. Drain undercrossing replacements are one of a number of important annual projects, including:

- Canal Bank Reconstruction
- Ag Meter Replacements
- Stanchion Weir Guide Replacements
- Turbine Pump System Replacements
- Pump Efficiency Testing
- Canal Gate Replacements
- Pipeline Gate Replacements
- Sectionalizing Valve Replacements
- Trash/Safety Barriers on Drainage and Irrigation Systems

weathernews

www.wxnet.com

Get Current and Historical Agricultural Weather Conditions & Crop Evapotranspiration Rates Throughout Solano County

(707) 863-8978

Do You Farm in the Suisun Valley?

Call our weather station on Suisun Valley Road for current crop weather information, updated every 10 minutes.

Watertender's Reminders

- Watertenders meet every day of the week (including weekends & holidays) at 2 p.m. for water orders. The meeting places are in Elmira at the Elmira deep well on Meridian Rd., (north of Elmira Rd.), and in Dixon at the corner of Dixon Avenue West and the Weyand Canal.
- Water changes should be made between 6 am and 6 p.m.
- District office hours are Monday-Friday from 7am-5pm.
- On weekends and holidays, contact your watertender directly.
- Call water orders in by 2 p.m. the day before requiring a water turn on or shut off.

Below is a listing of Watertenders' cell phone #'s (all 707)

701 Justin Noutary	249-6078	
703 Jeff Meitrott	249-6083	
704 William MacDonald (Mac)	249-6074	
705 John Yandel	249-6080	
706 Ramon Lemus	249-6108	
708 Robert Chavez	249-6070	
709 Mike Helton	249-6085	
710 Randy Miller	249-5305	Relief for 703 &705
711 Larry Aguilera	249-6107	Relief for 701 & 704
712 Danny Dunham	249-6098	Relief for 706 & 708
717 Mark Martinson	249-6230	Relief for 709
713 Tavo Lizarraga	249-6229	Ag Ops Supervisor
714 Stuart Chaney	249-6006	

Please note: When the regular watertender is off, their calls are automatically forwarded to the relief watertender on duty.

We are now at the peak of our water season. Due to crop rotations and the time of year, the majority of our systems are at capacity and will remain so through August.

When you are on a waiting list, please have a representative at water order everyday from 2:00 – 2:30 pm to maintain your water order and assist us with scheduling.

Lake Berryessa Levels

As of August 1, 2005

Lake Level (feet above sea level)	**436.00**
Acre-Feet Storage	**1,525,874**
Percentage of Capacity	**95%**

Lake Berryessa stores 1.6 million acre feet
And spills at 439.96 feet above sea level

Attachment H: Groundwater Banking Plan (not included in this report)

Attachment I: Annual Potable Water Quality Reports – Urban

SID-Stocking Ranch Public Water System
2008 Annual Water Quality Report

Solano Irrigation District welcomes this yearly opportunity to communicate our commitment to delivering quality water to our SID-Stocking Ranch PWS customers. Your ground water is supplied from one well in your local area. Public involvement in SID decisions is welcome. SID Board meetings are held regularly the third Monday of the month at 7:00 p.m. at 508 Elmira Road, Vacaville, CA 95687.

This report tells you that after testing for over 100 different constituents, your drinking water supply surpasses all health related standards established by the California Department of Public Health, and the U.S. Environmental Protection Agency.

All source waters used for drinking water are required to be assessed for the vulnerability to possible contaminants. A Source Water Assessment for the groundwater well was completed in 2003. The source is considered most vulnerable to the following activities not associated with any detected contaminants: above ground storage tanks, metal plating/finishing/fabricating. A summary of the assessment can be obtained by contacting SID at 707-455-4021.

For more information, contact Carol Walfoort-Municipal & Industrial Division Superintendent, 707-455-4027.

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo ó hable con alguien que lo entienda bien.

TERMS USED IN THIS REPORT:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (ug/L)

pCi/L: picocuries per liter

Primary Drinking Water Standards (PDWS): MCLs or MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Notification Level (NL): Health based advisory level set by the Department for constituents with no MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

NA: not applicable

ND: not detectable at testing limit

µS/cm: microsiemens per centimeter

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the CA Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Tables below list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows systems to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF BACTERIA

Microbiological Constituents	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
E. coli	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects E. coli	0	Human and animal fecal waste

TABLE 2 – CUSTOMER TAP SAMPLING RESULTS FOR LEAD AND COPPER

Lead and Copper (reporting units)	No. of samples collected	90th percentile level detected	No. of sites exceeding AL	AL	PHG	Typical Source of Constituent
Lead (ppb) 8/11/06	5	1.6	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm) 8/11/06	5	0.175	0	1.3	0.30	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	6/16/05	85	85	none	none	Generally found in ground & surface water
Hardness (ppm)	6/16/05	71.7	71.7	none	none	Generally found in ground & surface water

TABLE 4 - DETECTION OF CONSTITUENTS WITH A PRIMARY DRINKING WATER STANDARD

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Constituent
Gross Alpha Particle Activity (pCi/L)	Quarterly 2004	2.29	2.29	15	(0)	Erosion of natural deposits
Aluminum (ppm)	6/25/08	0.021	0.021	1	0.6	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	6/25/08	6.9	6.9	10	0.004	Erosion of natural deposits; residue from some surface water treatment processes
Barium (ppm)	6/25/08	0.11	0.11	1	2	Discharge of oil drilling wastes, metal refineries; erosion of natural deposits
Fluoride (ppm)	6/26/08	0.07	0.07	2.0	1	Erosion of natural deposits
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors in Distribution System						
Total Trihalomethanes (ppb)	7-16-07	5.1	5.1	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	7-16-07	ND	ND	60	NA	By-product of drinking water chlorination
Chlorine (ppm)	Monthly 2008	1.0	0.1-1.6	[4.0]	[4]	Drinking water disinfectant added for treatment

TABLE 5 - DETECTION OF CONSTITUENTS WITH A SECONDARY DRINKING WATER STANDARD

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Aluminum (ppb)	6/25/08	21	21	200	NA	Erosion of natural deposits
Color (units)	6/16/05	5	5	15	NA	Naturally-occurring organic materials
Chloride (ppm)	6/16/05	9.7	9.7	500	NA	Runoff/leaching from natural deposits; seawater influence
Iron (ppb)	4/28/08 5/2/08	390	**80-1,110***	300	NA	Leaching from natural deposits; industrial wastes
Manganese (ppb)	4/28/08 5/2/08	47	**22-79****	50	NA	Leaching from natural deposits
Odor (units)	6/16/05	1	1	3	NA	Naturally-occurring organic materials
Specific Conductance (µS/cm)	6/16/05	416	416	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	6/16/05	21	21	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	6/16/05	280	280	1000	NA	Runoff/leaching from natural deposits
Turbidity (units)	6/16/05	2.4	2.4	5	NA	Soil runoff
Zinc (ppm)	6/16/05	0.0055	0.0055	5.0	NA	Runoff/leaching from natural deposits; industrial wastes

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

Summary Information for Constituents Exceeding an MCL, MRDL, or AL, or a Violation of Any Treatment Technique or Monitoring and Reporting Requirement

* Iron was found at levels that exceed the secondary MCL of 300 ppb. The iron MCL was set to protect you against unpleasant aesthetic effects (e.g., color, taste, odor) and the staining of plumbing fixtures (e.g., tubs and sinks) and clothing while washing. The high iron levels are due to leaching of natural deposits.

** Manganese was found at levels that exceed the secondary MCL of 50 ppb. The manganese MCL was set to protect you against unpleasant aesthetic effects (e.g., color, taste, odor) and the staining of plumbing fixtures (e.g., tubs and sinks) and clothing while washing. The high manganese levels are due to leaching of natural deposits.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. More information about contaminants, potential health effects, and reducing risks can be obtained by calling the USEPA's Safe Drinking Water Hotline 1-800-426-4791.

CONSERVE IS THE WORD!

Water conservation practices can save thousands of gallons of water per year, save you money, and it is the right thing to do! When utilities are able to reduce demand, they can frequently extend the life of existing infrastructure, saving their consumers the cost of building or renovating. Finally, sound water use practices can make us more resilient during times of drought, negating the need for mandatory measures. Water is a valuable resource.

One way to conserve is replacing old washing machines and toilets with high efficiency models. Rebates may be available to help with the costs! You can check out the program details at: www.solanosaveswater.org/residents.htm. You can request a FREE Solano County Water Wise Gardening CD from the same website. Installing low flow shower heads in bathrooms, faucet aerators in the kitchen, and using a shut-off hose nozzle when washing your car are other ways to save water.

SID-Gibson Canyon Public Water System
2008 Annual Water Quality Report

Solano Irrigation District welcomes this yearly opportunity to communicate our commitment to delivering quality water to our SID-Gibson Canyon PWS customers. Your surface water is supplied from Lake Berryessa. Public involvement in SID decisions is welcome. SID Board meetings are held regularly the third Monday of the month at 7:00 p.m. at 508 Elmira Road, Vacaville, CA 95687.

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All source waters used for drinking water are required to be assessed for the vulnerability to possible contaminants. A Source Water Assessment for Lake Berryessa was completed in 2003. The source is considered most vulnerable to the following activities not associated with any detected contaminants: illegal activities/dumping, herbicide application, and urban/agricultural runoff. A summary of the assessment can be obtained by contacting SID at 707-455-4021.

For more information, contact Carol Walfoort-Municipal & Industrial Division Superintendent, 707-455-4027.

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minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
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The tables below list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows systems to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF BACTERIA

Microbiological Constituents	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
E. coli	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects E. coli	0	Human and animal fecal waste

TABLE 2 – CUSTOMER TAP SAMPLING RESULTS FOR LEAD AND COPPER

Lead and Copper (reporting units)	No. of samples collected	90th percentile level detected	No. of sites exceeding AL	AL	PHG	Typical Source of Constituent
Lead (ppb) 8/13/08	11	0.84	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm) 8/13/08	11	0.091	0	1.3	0.30	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	3/12/08	23	23	none	none	Generally found in ground & surface water
Hardness (ppm)	3/12/08	200	200	none	none	Generally found in ground & surface water

TABLE 4 - DETECTION OF CONSTITUENTS WITH A PRIMARY DRINKING WATER STANDARD						
Constituent (reporting units)	**Sample Date**	**Average Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Constituent**
Gross Alpha Particle Activity (pCi/L)	Quarterly 2002	2.14	0.66-4.11	15	(0)	Erosion of natural deposits
Arsenic (ppb)	3/12/08	1.2	1.2	10	0.004	Erosion of natural deposits; runoff from orchards; glass and electronic production wastes
Barium (ppm)	3/12/08	0.051	0.051	1	2	Discharge of oil drilling wastes, metal refineries; erosion of natural deposits
Copper (ppm)	3/12/08	0.003	0.003	AL=1.3	0.30	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	3/12/08	0.13	0.13	2.0	1	Erosion of natural deposits
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors in Distribution System						
Total Trihalomethanes (ppb)	Quarterly 2008	53.5	21-75(1)	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	Quarterly 2008	39.5	27-61(1)	60	NA	By-product of drinking water chlorination
Chlorine (ppm)	Monthly 2008	1.5	0.8-2.1	[4.0]	[4]	Drinking water disinfectant added for treatment
Control of DBP precursors (Total Organic Carbon)	Monthly 2008	1.58	0.26-2.58(1)	TT	NA	Various natural and manmade sources

TABLE 5 - DETECTION OF CONSTITUENTS WITH A SECONDARY DRINKING WATER STANDARD						
Constituent (reporting units)	**Sample Date**	**Average Level Detected**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Constituent**
Chloride (ppm)	3/12/08	16	16	500	NA	Runoff/leaching from natural deposits; seawater influence
Copper (ppm)	3/12/08	0.003	0.003	1.0	NA	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Odor (units)	3/12/08	1	1	3	NA	Naturally-occurring organic materials
Specific Conductance (µS/cm)	3/12/08	432	432	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	3/12/08	41	41	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	3/12/08	230	230	1000	NA	Runoff/leaching from natural deposits
Turbidity (units)	3/12/08	0.20	0.20	5	NA	Soil runoff

TABLE 7 - SAMPLING RESULTS RELATED TO TREATMENT OF SURFACE WATER	
Treatment Technique [(a)] (Type of approved filtration technology used)	Membrane Microfiltration
Turbidity Performance Standards [(b)] (that must be met through the water treatment process)	Turbidity of the filtered water must: 1 – Be less than or equal to 0.1 NTU in 95% of measurements in a month. 2 – Not exceed 1.0 NTU at any time.
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	100%
Highest single turbidity measurement during the year	0. 04 NTU
Number of violations of any surface water treatment requirements	0

[(1)] Compliance is based on a running annual average (RAA).

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(a) A required process intended to reduce the level of a contaminant in drinking water.

(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

Summary Information for Constituents Exceeding an MCL, MRDL, or AL, or a Violation of Any Treatment Technique or Monitoring and Reporting Requirement

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SID-Elmira Public Water System
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Microbiological Constituent	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
E. coli	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects E. coli	0	Human and animal fecal waste

TABLE 2 – CUSTOMER TAP SAMPLING RESULTS FOR LEAD AND COPPER

Lead and Copper (reporting units)	No. of samples collected	90th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Constituent
Lead (ppb) 8/9/07	5	1.75	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm) 8/9/07	5	0.315	0	1.3	0.30	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	6/11/08	62	62	none	none	Generally found in ground & surface water
Hardness (ppm)	6/11/08	223	223	none	none	Generally found in ground & surface water

TABLE 4 - DETECTION OF CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD						
Constituent (reporting units)	**Sample Date**	**Average Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Constituent**
Gross Alpha Particle Activity (pCi/L)	Quarterly 2004	4.02	4.02	15	(0)	Erosion of natural deposits
Barium (ppm)	6/11/08	0.066	0.066	1	2	Discharge of oil drilling wastes, metal refineries; erosion of natural deposits
Chromium (ppb)	6/11/08	2	2	50	(100)	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	6/11/08	0.13	0.13	2.0	1	Erosion of natural deposits
Nitrate (as nitrate, NO_3) (ppm)	6/11/08	7.4	7.4	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium (ppb)	6/11/08	7.3	7.3	50	(50)	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors in Distribution System						
Total Trihalomethanes (ppb)	2007	ND	ND	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	2007	ND	ND	60	NA	By-product of drinking water chlorination
Chlorine (ppm)	Monthly 2008	1.1	0.3-2.1	[4.0]	[4]	Drinking water disinfectant added for treatment

TABLE 5 - DETECTION OF CONSITUENT WITH A SECONDARY DRINKING WATER STANDARD						
Constituent (reporting units)	**Sample Date**	**Average Level Detected**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Constituent**
Chloride (ppm)	6/11/08	18	18	500	NA	Runoff/leaching from natural deposits; seawater influence
Odor (units)	6/11/08	1	1	3	NA	Naturally-occurring organic materials
Specific Conductance (µS/cm)	6/11/08	585	585	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	6/11/08	52	52	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	6/11/08	370	370	1000	NA	Runoff/leaching from natural deposits
Turbidity (units)	6/11/08	0.10	0.10	5	NA	Soil runoff

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. More

information about contaminants, potential health effects, and reducing risks can be obtained by calling the USEPA's Safe Drinking Water Hotline 1-800-426-4791.

CONSERVE IS THE WORD!

Water conservation practices can save thousands of gallons of water per year, save you money, and it is the right thing to do! When utilities are able to reduce demand, they can frequently extend the life of existing infrastructure, saving their consumers the cost of building or renovating. Finally, sound water use practices can make us more resilient during times of drought, negating the need for mandatory measures. Water is a valuable resource.

One way to conserve is replacing old washing machines and toilets with high efficiency models. Rebates may be available to help with the costs! Check out the program details at: www.solanosaveswater.org/residents.htm. You can request a FREE Solano County Water Wise Gardening CD from the same website. Installing low flow shower heads in bathrooms, faucet aerators in the kitchen, and using a shut-off hose nozzle when washing your car are other ways to save water.

SID-Quail Canyon Public Water System
2008 Annual Water Quality Report

Solano Irrigation District welcomes this yearly opportunity to communicate our commitment to delivering quality water to our SID-Quail Canyon PWS customers. Your ground water is supplied from one well in your local area. Public involvement in SID decisions is welcome. SID Board meetings are held regularly the third Monday of the month at 7:00 p.m. at 508 Elmira Road, Vacaville, CA 95687.

This report tells you that after testing for over 100 different constituents, your drinking water supply surpasses all health related standards established by the California Department of Public Health, and the U.S. Environmental Protection Agency.

All source waters used for drinking water are required to be assessed for the vulnerability to possible contaminants. A Source Water Assessment for the well was completed in 2003. The source is considered most vulnerable to the following activities not associated with any detected contaminants: above ground storage tanks, metal plating/finishing/fabricating. A summary of the assessment can be obtained by contacting SID at 707-455-4021.

For more information, contact Carol Walfoort-Municipal & Industrial Division Superintendent, 707-455-4027.

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo ó hable con alguien que lo entienda bien.

TERMS USED IN THIS REPORT:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (ug/L)

pCi/L: picocuries per liter

Primary Drinking Water Standards (PDWS): MCLs or MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Notification Level (NL): Health based advisory level set by the Department for constituents with no MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

NA: not applicable

ND: not detectable at testing limit

µS/cm: microsiemens per centimeter

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring

minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the CA Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

The tables below list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows systems to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF BACTERIA

Microbiological Constituents	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
E. Coli	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects E. coli	0	Human and animal fecal waste

TABLE 2 – CUSTOMER TAP SAMPLING RESULTS FOR LEAD AND COPPER

Lead and Copper (reporting units)	No. of samples collected	90th percentile level detected	No. of sites exceeding AL	AL	PHG	Typical Source of Constituent
Lead (ppb) 9/7/2006	5	7.35	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm) 9/7/2006	5	0.315	0	1.3	0.30	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	9/23/08	18	18	none	none	Generally found in ground & surface water
Hardness (ppm)	9/23/08	240	240	none	none	Generally found in ground & surface water

TABLE 4 - DETECTION OF CONSTITUENTS WITH A PRIMARY DRINKING WATER STANDARD						
Constituent (reporting units)	**Sample Date**	**Average Level Detected**	**Range of Detections**	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	**Typical Source of Constituent**
Gross Alpha Activity (pCi/L)	Quarterly 2004	4.02	4.02	15	(0)	Erosion of natural deposits
Arsenic (ppb)	9/23/08	1.4	1.4	10	0.004	Erosion of natural deposits; runoff from orchards; glass and electronic production wastes
Barium (ppm)	9/23/08	0.11	0.11	1	2	Discharge of oil drilling wastes, metal refineries; erosion of natural deposits
Chromium (ppb)	9/23/08	1.8	1.8	50	(100)	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	9/23/08	0.16	0.16	2.0	1	Erosion of natural deposits
Nitrate (as NO_3) (ppm)	1/29/08	1.1	1.1	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors in Distribution System						
Total Trihalomethanes (ppb)	7/22/08	8.0	8.0	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	7/22/08	ND	ND	60	NA	By-product of drinking water chlorination
Chlorine (ppm)	Monthly 2008	1.0	ND-2.1	[4.0]	[4]	Drinking water disinfectant added for treatment

TABLE 5 - DETECTION OF CONSTITUENTS WITH A SECONDARY DRINKING WATER STANDARD						
Constituent (reporting units)	**Sample Date**	**Average Level Detected**	**Range of Detections**	**MCL**	**PHG (MCLG)**	**Typical Source of Constituent**
Chloride (ppm)	9/23/08	6.5	6.5	500	NA	Runoff/leaching from natural deposits; seawater influence
Specific Conductance (µS/cm)	9/23/08	541	541	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	9/23/08	18	18	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	9/23/08	346	346	1000	NA	Runoff/leaching from natural deposits
Zinc (ppm)	9/23/08	0.021	0.021	5.0	NA	Runoff/leaching from natural deposits; industrial wastes

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. More information about contaminants, potential health effects, and reducing risks can be obtained by calling the USEPA's Safe Drinking Water Hotline 1-800-426-4791.

CONSERVE IS THE WORD!

Water conservation practices can save thousands of gallons of water per year, save you money, and it is the right thing to do! When utilities are able to reduce demand, they can frequently extend the life of existing infrastructure, saving their consumers the cost of building or renovating. Finally, sound water use practices can make us more resilient during times of drought, negating the need for mandatory measures. Water is a valuable resource.

One way to conserve is replacing old washing machines and toilets with high efficiency models. Rebates may be available to help with the costs! Check out the program details at: www.solanosaveswater.org/residents.htm. You can request a FREE Solano County Water Wise Gardening CD from the same website. Installing low flow shower heads in bathrooms, faucet aerators in the kitchen, and using a shut-off hose nozzle when washing your car are other ways to save water.

SID-Blue Ridge Oaks Public Water System
2008 Annual Water Quality Report

Solano Irrigation District welcomes this yearly opportunity to communicate our commitment to delivering quality water to our SID-Blue Ridge Oaks PWS customers. Your surface water is purchased from the City of Fairfield, and comes from Lake Berryessa, and the Sacramento River Delta. Public involvement in SID decisions is welcome. SID Board meetings are held regularly the third Monday of the month at 7:00 p.m. at 508 Elmira Road, Vacaville, CA 95687.

This report tells you that after testing for over 100 different constituents, your drinking water supply surpassses all health related standards established by the California Department of Public Health, and the U.S. Environmental Protection Agency.

All source waters used for drinking water are required to be assessed for the vulnerability to possible contaminants. A Source Water Assessment for Lake Berryessa was completed in 2003, and the Sacramento Delta was completed in 2002. These sources are considered most vulnerable to illegal activities/dumping, herbicide application, and urban/agricultural runoff not associated with any contaminants detected in the water supply. A summary of these assessments can be obtained by contacting SID at 707-455-4021.

For more information, contact Carol Walfoort-Municipal & Industrial Division Superintendent, 707-455-4027.

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo ó hable con alguien que lo entienda bien.

TERMS USED IN THIS REPORT:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (ug/L)

Primary Drinking Water Standards (PDWS): MCLs or MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Notification Level (NL): Health based advisory level set by the Department for constituents with no MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

NA: not applicable

ND: not detectable at testing limit

pCi/L: picocuries per liter

µS/cm: microsiemens per centimeter

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the CA Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Tables below list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows systems to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Constituents	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or *E. coli*	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 – CUSTOMER TAP SAMPLING RESULTS FOR LEAD AND COPPER

Lead and Copper (reporting units)	No. of samples collected	90th percentile level detected	No. of sites exceeding AL	AL	PHG	Typical Source of Constituents
Lead (ppb) 8/8/2008	5	1.2	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm) 8/8/2008	5	0.160	0	1.3	0.30	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	Quarterly 2008	33.2	15.1-75.7	None	None	Generally found in ground & surface water
Hardness (ppm)	Quarterly 2008	138	58-204	None	None	Generally found in ground & surface water

TABLE 4 - DETECTION OF CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Constituent
Aluminum (ppm)	Quarterly 2008	0.056	ND-0.75	1	0.6	Erosion of natural deposits; residue from some surface water treatment processes
Cadmium (ppb)	Quarterly 2008	0.573	ND-1.08	3	0.04	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Fluoride (ppm)	Quarterly 2008	0.850	0.68-1.03	2.0	1	Erosion of natural deposits; water additive which promotes strong teeth
Nickel (ppb)	Quarterly 2008	11.9	ND-24.4	100	12	Erosion of natural deposits; discharge from metal factories
Nitrate (as NO_3) (ppm)	Quarterly 2008	3.03	ND-5.27	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors (Federal Rule, implemented in CA per USEPA)						
TTHMs (Total Trihalomethanes) (ppb)	7/10/08	71	71	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	7/10/08	22	22	60	NA	By-product of drinking water chlorination
Chlorine (ppm)	Monthly 2008	0.7	ND-2.7[1]	[MRDL = 4.0 (as Cl_2)]	[MRDLG = 4 (as Cl_2)]	Drinking water disinfectant added for treatment
Control of DBP precursors (Total Organic Carbon)	Monthly 2008	2.52	1.90-4.07	TT	NA	Various natural and manmade sources

TABLE 5 - DETECTION OF CONSTITUENT WITH A SECONDARY DRINKING WATER STANDARD IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Aluminum (ppb)	Quarterly 2008	56	ND-75	200	NA	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	Quarterly 2008	16.8	8-54.5	500	NA	Runoff/leaching from natural deposits; seawater influence
Foaming agents (ppb)	Quarterly 2008	28.5	ND-53	500	NA	Municipal and Industrial waste discharges
Manganese (ppb)	Quarterly 2008	18.1	ND-66	50	NA	Leaching from natural deposits
Odor (units)	Quarterly 2008	1.48	1.4-2.0	3	NA	Naturally-occurring organic materials
Silver (ppb)	Quarterly 2008	10.8	ND-15.5	100	NA	Industrial discharges
Specific Conductance (µS/cm)	Quarterly 2008	370	238-630	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	Quarterly 2008	54.9	35-88.5	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	Quarterly 2008	202	163-387	1000	NA	Runoff/leaching from natural deposits
Turbidity (units)	Quarterly 2008	0.047	0.034-0.198	5	NA	Soil runoff

[1] Compliance is based on a running annual average (RAA).

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

For Systems Providing Surface Water as a Source Of Drinking Water:

TABLE 8 - SAMPLING RESULTS RELATED TO TREATMENT OF SURFACE WATER SOURCES	
Treatment Technique [(a)] (Type of approved filtration technology used)	Conventional Filtration
Turbidity Performance Standards [(b)] (that must be met through the water treatment process)	Turbidity of the filtered water must: 1 – Be less than or equal to 0.3 NTU in 95% of measurements in a month. 2 – Not exceed 1.0 NTU at any time.
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	99%
Highest single turbidity measurement during the year	0.32 NTU
Number of violations of any surface water treatment requirements	0

(a) A required process intended to reduce the level of a contaminant in drinking water.
(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

CONSERVE IS THE WORD!

SOLANO WATER
BE GREEN, SAVE BLUE™

Water conservation practices can save thousands of gallons of water per year, save you money, and it is the right thing to do! When utilities are able to reduce demand, they can frequently extend the life of existing infrastructure, saving their consumers the cost of building or renovating. Finally, sound water use practices can make us more resilient during times of drought, negating the need for mandatory measures. Water is a valuable resource.

One way to conserve is replacing old washing machines and toilets with high efficiency models. Rebates may be available to help with the costs! Check out the program details at: www.solanosaveswater.org/residents.htm. You can request a FREE Solano County Water Wise Gardening CD from the same website. Installing low flow shower heads in bathrooms, faucet aerators in the kitchen, and using a shut-off hose nozzle when washing your car are other ways to save water.

SID-Pleasant Hills Public Water System
2008 Annual Water Quality Report

Your drinking water supply DOES NOT meet health related standards. It is UNSAFE to drink.

Solano Irrigation District welcomes this yearly opportunity to communicate to our SID-Pleasant Hills Public Water System customers. Your untreated surface water is supplied from Lake Berryessa. Public involvement in SID decisions is welcome. SID Board meetings are held regularly the third Monday of the month at 7:00 p.m. at 508 Elmira Road, Vacaville, CA 95687.

All source waters used for drinking water are required to be assessed for the vulnerability to possible contaminants. A Source Water assessment for Lake Berryessa was completed in 2003. This source is considered most vulnerable to the following activities not associated with any detected contaminants: illegal activities/dumping, herbicide application, and urban/agricultural runoff.

For more information, contact Carol Walfoort-Municipal & Industrial Division Superintendent, 707-455-4027.

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo ó hable con alguien que lo entienda bien.

TERMS USED IN THIS REPORT:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (ug/L)

Primary Drinking Water Standards (PDWS): MCLs or MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Notification Level (NL): Health based advisory level set by the Department for constituents with no MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

NA: not applicable

ND: not detectable at testing limit

pCi/L: picocuries per liter (a measure of radiation)

µS/cm: microsiemens per centimeter

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the California Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Tables below list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water **DOES INDICATE** that the water poses a health risk. The Department allows systems to monitor for certain contaminants less than once per year because the system uses untreated surface water.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Constituents	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	Always Present	12*	More than 1 sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or *E. coli*	Always Present	12*	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 - SAMPLING RESULTS FOR SODIUM AND HARDNESS IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	2/14/2008	23	23	none	none	Generally found in ground & surface water
Hardness (ppm)	2/14/2008	200	200	none	None	Generally found in ground & surface water

TABLE 3 - DETECTION OF CONSTITUENTS WITH A PRIMARY DRINKING WATER STANDARD IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Constituent
Gross Alpha Particle Activity (pCi/L)	Quarterly 2002	2.14	0.66-4.11	15	(0)	Erosion of natural deposits
Aluminum (ppm)	2/14/2008	0.15	0.15	1	0.6	Erosion of natural deposits; residue from some surface water treatment processes
Barium (ppm)	2/14/2008	0.60	0.60	1	2	Discharge of oil drilling wastes, metal refineries; erosion of natural deposits
Copper (ppm)	2/14/2008	0.002	0.002	NL=1.3	0.30	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2/14/2008	0.09	0.09	2.0	1	Erosion of natural deposits

TABLE 4 - DETECTION OF CONSTITUENTS WITH A SECONDARY DRINKING WATER STANDARD IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Aluminum (ppb)	2/14/008	150	150	200	NA	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	2/14/2008	14	14	500	NA	Runoff/leaching from natural deposits; seawater influence
Color (units)	2/14/2008	15	15	15	NA	Naturally –occurring organic materials
Copper (ppm)	2/14/2008	0.002	0.002	1.0	NA	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Iron (ppb)	2/14/2008	290	290	300	NA	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2/14/2008	28	28	50	NA	Leaching from natural deposits
Odor (units)	2/14/2008	**4***	**4***	3	NA	Naturally-occurring organic materials
Specific Conductance (µS/cm)	2/14/2008	471	471	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2/14/2008	46	46	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2/14/2008	262	262	1000	NA	Runoff/leaching from natural deposits
Turbidity (units)	2/14/2008	**7.0***	**7.0***	5	NA	Soil runoff

TABLE 6 - SAMPLING RESULTS RELATED TO TREATMENT OF SURFACE WATER SOURCES

Treatment Technique [a] (Type of approved filtration technology used)	**NO TREATMENT**
Turbidity Performance Standards [b] (that must be met through the water treatment process)	**NOT APPLICABLE NO TREATMENT**
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	**NOT APPLICABLE NO TREATMENT**
Highest single turbidity measurement during the year	**NOT APPLICABLE NO TREATMENT**
Number of violations of any surface water treatment requirements	**ALWAYS IN VIOLATION**

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

(a) A required process intended to reduce the level of a contaminant in drinking water.

(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

Summary Information for Constituents Exceeding an MCL, MRDL, or AL, or a Violation of Any Treatment Technique or Monitoring and Reporting Requirement

The RAW surface water being delivered to your service was in violation of state Primary Drinking Water Standards for turbidity (a measure of the clarity of the water), and coliform bacteria all year.

Your drinking water supply DOES NOT meet health related standards. It is UNSAFE to drink.

In addition, the raw water is also in violation of Secondary Standards for Odor, and Turbidity.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. More information about contaminants, potential health effects, and reducing risks can be obtained by calling the USEPA's Safe Drinking Water Hotline 1-800-426-4791.

CONSERVE IS THE WORD!

Water conservation practices can save thousands of gallons of water per year, save you money, and it is the right thing to do! When utilities are able to reduce demand, they can frequently extend the life of existing infrastructure, saving their consumers the cost of building or renovating. Finally, sound water use practices can make us more resilient during times of drought, negating the need for mandatory measures. Water is a valuable resource.

One way to conserve is replacing old washing machines and toilets with high efficiency models. Rebates may be available to help with the costs! Check out the program details at: www.solanosaveswater.org/residents.htm. You can request a FREE Solano County Water Wise Gardening CD from the same website. Installing low flow shower heads in bathrooms, faucet aerators in the kitchen, and using a shut-off hose nozzle when washing your car are other ways to save water.

SID-Peabody Public Water System
2008 Annual Water Quality Report

Solano Irrigation District welcomes this yearly opportunity to communicate our commitment to delivering quality water to our SID-Peabody PWS customers. Your surface water is purchased from the City of Fairfield, and comes from Lake Berryessa, and the Sacramento River Delta. Public involvement in SID decisions is welcome. SID Board meetings are held regularly the third Monday of the month at 7:00 p.m. at 508 Elmira Road, Vacaville, CA 95687.

This report tells you that after testing for over 100 different constituents, your drinking water supply surpasses all health related standards established by the California Department of Public Health, and the U.S. Environmental Protection Agency.

All source waters used for drinking water are required to be assessed for the vulnerability to possible contaminants. A Source Water Assessment for Lake Berryessa was completed in 2003, and the Sacramento Delta was completed in 2002. These sources are considered most vulnerable to illegal activities/dumping, herbicide application, and urban/agricultural runoff not associated with any contaminants detected in the water supply. A summary of these assessments can be obtained by contacting SID at 707-455-4021.

For more information, contact Carol Walfoort-Municipal & Industrial Division Superintendent, 707-455-4027.

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo ó hable con alguien que lo entienda bien.

TERMS USED IN THIS REPORT:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (ug/L)

Primary Drinking Water Standards (PDWS): MCLs or MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Notification Level (NL): Health based advisory level set by the Department for constituents with no MCL. This is not an enforceable standard, although requirements and recommendations may apply if detected above this level.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

NA: not applicable

ND: not detectable at testing limit

pCi/L: picocuries per liter

µS/cm: microsiemens per centimeter

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA and the CA Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Tables below list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows systems to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Constituents	Highest No. of detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.) 0	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
E. coli	(In the year) 0	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 – CUSTOMER TAP SAMPLING RESULTS FOR LEAD AND COPPER

Lead and Copper (reporting units)	No. of samples collected	90th percentile level detected	No. of sites exceeding AL	AL	PHG	Typical Source of Constituents
Lead (ppb) 8/13/2007	5	11	0	15	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm) 8/13/2007	5	0.130	0	1.3	0.30	Internal corrosion of household water plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Sodium (ppm)	Quarterly 2008	33.2	15.1-75.7	None	None	Generally found in ground & surface water
Hardness (ppm)	Quarterly 2008	138	58-204	None	None	Generally found in ground & surface water

TABLE 4 - DETECTION OF CONSTITUENT WITH A PRIMARY DRINKING WATER STANDARD IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Constituent
Aluminum (ppm)	Quarterly 2008	0.056	ND-0.75	1	0.6	Erosion of natural deposits; residue from some surface water treatment processes
Cadmium (ppb)	Quarterly 2008	0.573	ND-1.08	5	0.04	Discharges of oil drilling wastes and from metal refineries;erosion of natural deposits
Fluoride (ppm)	Quarterly 2008	0.850	0.68-1.03	2.0	1	Erosion of natural deposits; water additive which promotes strong teeth
Nickel (ppb)	Quarterly 2008	11.9	ND-24.4	100	12	Erosion of natural deposits; discharge from metal factories
Nitrate (as NO_3) (ppm)	Quarterly 2008	3.03	ND-5.27	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors						
TTHMs (Total Trihalomethanes) (ppb)	7/11/08	37	37	80	NA	By-product of drinking water chlorination
Haloacetic Acids (ppb)	7/11/2008	2.0	2.0	60	NA	By-product of drinking water chlorination
Chlorine (ppm)	Monthly 2008	0.4	ND-0.7	[MRDL = 4.0 (as Cl_2)]	[MRDLG = 4 (as Cl_2)]	Drinking water disinfectant added for treatment
Control of DBP precursors (Total Organic Carbon)	Monthly 2008	2.52	1.90-4.07	TT	NA	Various natural and manmade sources

TABLE 5 - DETECTION OF CONSTITUENT WITH A SECONDARY DRINKING WATER STANDARD IN SOURCE

Constituent (reporting units)	Sample Date	Average Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Constituent
Aluminum (ppb)	Quarterly 2008	56	ND-75	200	NA	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	Quarterly 2008	16.8	8-54.5	500	NA	Runoff/leaching from natural deposits; seawater influence
Foaming Agents (ppb)	Quarterly 2008	28.5	ND-53	500	NA	Municipal and Industrial waste discharges
Manganese (ppb)	Quarterly 2008	18.1	ND-66	50	NA	Leaching from natural deposits
Odor (units)	Quarterly 2008	1.48	1.4-2.0	3	NA	Naturally-occurring organic materials
Silver (ppb)	Quarterly 2008	10.8	ND-16.5	100	NA	Industrial discharges
Specific Conductance (µS/cm)	Quarterly 2008	370	238-630	1600	NA	Substances that form ions when in water; seawater influence
Sulfate (ppm)	Quarterly 2008	54.9	35-88.5	500	NA	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	Quarterly 2008	229	163-387	1000	NA	Runoff/leaching from natural deposits
Turbidity (units)	Quarterly 2008	0.047	0.034-0.198	5	NA	Soil runoff

(1) Compliance is based on a running annual average (RAA).

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

For Systems Providing Surface Water as a Source Of Drinking Water:

TABLE 8 - SAMPLING RESULTS RELATED TO TREATMENT OF SURFACE WATER SOURCES	
Treatment Technique [(a)] (Type of approved filtration technology used)	Conventional Filtration
Turbidity Performance Standards [(b)] (that must be met through the water treatment process)	Turbidity of the filtered water must: 1 – Be less than or equal to 0.3 NTU in 95% of measurements in a month. 2 – Not exceed 1.0 NTU at any time.
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	99%
Highest single turbidity measurement during the year	0.32 NTU
Number of violations of any surface water treatment requirements	0

(a) A required process intended to reduce the level of a contaminant in drinking water.
(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

CONSERVE IS THE WORD!

SOLANO WATER
BE GREEN, SAVE BLUE™

Water conservation practices can save thousands of gallons of water per year, save you money, and it is the right thing to do! When utilities are able to reduce demand, they can frequently extend the life of existing infrastructure, saving their consumers the cost of building or renovating. Finally, sound water use practices can make us more resilient during times of drought, negating the need for mandatory measures. Water is a valuable resource.

One way to conserve is replacing old washing machines and toilets with high efficiency models. Rebates may be available to help with the costs! Check out the program details at: www.solanosaveswater.org/residents.htm. You can request a FREE Solano County Water Wise Gardening CD from the same website. Installing low flow shower heads in bathrooms, faucet aerators in the kitchen, and using a shut-off hose nozzle when washing your car are other ways to save water.

Attachment J: Notices of District Educational Programs and Services Available to Customers

The Irrigator

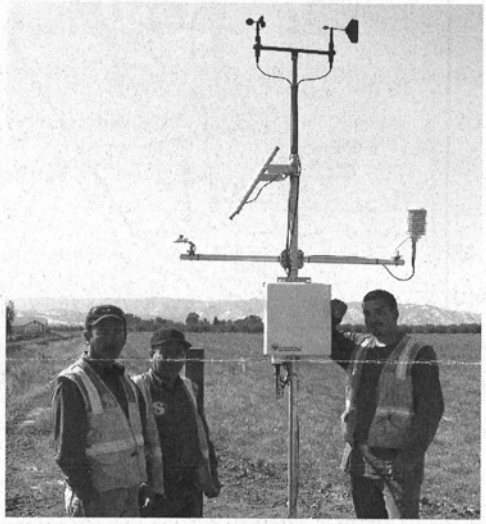
A crop water use information project of Solano Irrigation District, Reclamation District 2068, Maine Prairie Water District, U.C. Cooperative Extension, Solano County Water Agency and Natural Resources Conservation Service

508 Elmira Road
Vacaville, CA 95687

Telephone: (707) 455-4024
October 2008

New Weather Station Installed

The Solano Agricultural Water Conservation Committee (AWCC) recently completed installation of a new weather station , "Dixon-West." Located on Jahn Road, the station provides weather-based irrigation management data in a region previously not covered. Mike Barrett, Dixon grower, says, "Having the station in this area is really helpful, since it is warmer here, and less windy than the east side of Dixon. I use the ET numbers to help me manage the trees, and the new station will help me become more accurate with irrigations." Tavo Lizarraga, Solano Irrigation District Ag Operations Supervisor says, "This is a major agricultural area with prime soils, diverse crops, and many growers. We are looking forward to providing real-time weather information for our farmers; some of whom live outside of the area. We are encouraging those growers to use the phone feature to check current wind and rain condititons as well as irrigation conditions."



West Dixon Weather Station with Solano Irrigation District watertenders Ramon Lemus, Robert Chavez & Kris Aguilera

The AWCC now manages nine weather stations in Solano County; three of which are co-owned with the Californa Irrigation Management Information System (CIMIS), and six of which are fully owned by the AWCC. All of the stations provide website access, and six of the stations provide phone access with 10 minute updates for current temperatures, dew points, wind speeds, and precipitation. Weather data such as degree-days and evaportranspiration rates are posted, and all of the data is collected for historical records.

To access our network of weather stations, see the table below. For help with utilizing local weather data towards efficient irrigation scheduling, call Paul Lum, Irrigation Specialist, at (707) 455-4024. The AWCC thanks the Bureau of Reclamation for providing partial grant funding.

Weather Station Access

Station	Access	Location
Dixon-West	**(707) 693-1077 & website :*www.westernwx.com/sid***	**Jahn Rd., Dixon**
Dixon CIMIS #121	website	Midway Rd. & Robben Rd., Dixon
Hastings Tract CIMIS #122	website	Hastings Tract, Dixon
Suisun CIMIS #123	website	Solano Coummunity College
Suisun Valley (Wooden Valley Winery)	(707) 863-8978 & website	4756 Suisun Valley Rd., Suisun
Abernathy 1 (Green Valley Tractor)	(707) 426-4896 & website	4135 Abernathy Rd., Suisun
Abernathy 3 (JT Ranch)	(707) 426-4097 & website	4423 Abernathy Rd., Suisun
Williams 2 (Upper Suisun Valley)	(707) 426-4063 & website	5272 Williams Rd., Suisun
Gordon Valley 3 (Gordon Valley Rd.)	(707) 426-4971 & website	5134 Gordon Valley Rd., Suisun
Winters CIMIS #139	website	Winters
Davis CIMIS #6	website	U.C. Davis

Update on the 2008 Soil Moisture Monitoring Program

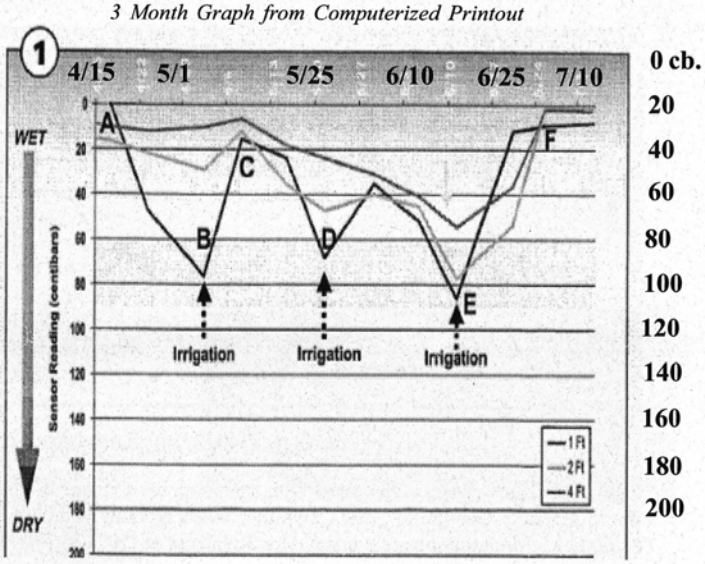
The Ag Water Conservation Committee assisted a growing number of farmers and ranchers with monitoring soil moisture levels on their farms this season. Watermark soil sensors and the AM400 Datalogger were installed in fields county-wide, in all of the major crops. Our aim is to provide growers with the most practical tools available to assist with efficient irrigation scheduling, and the soil monitoring program has been a success.

Call the Irrigation Specialist at (707) 455-4024 for information. Our inventory of free soil sensors and dataloggers are limited, and on a first come, come first served basis. Attendance at our annual irrigation management workshop is required to get on the sign up list for the sensors, and to gain practical knowledge regarding their use in scheduling irrigations. A combination of soil and leaf monitoring and recording crop evapotranspiration losses are the major tools we recommend for irrigation scheduling.

How Do I Read My Datalogger?

35 Day Graph from AM400 Soil Meter

3 Month Graph from Computerized Printout



A common question among growers is "How Do I Read the Graph?" The following are excerpts from UC Cooperative Extension's pamphlet, "Soil Moisture Monitoring - A Simple Method to Improve Alfalfa and Pasture Irrigation Management."

Figure 1. Proper Irrigation Management

The areas between 60 - 90 centbars (cb) indicate where irrigations should occur. In this example of an alfalfa field, the soil is moist from winter rainfall, and readings measure less than 20 cb. on April 15th (**A**). Gradually the soil dries and the readings increase, beginning with the sensor located at the one foot depth followed by the deeper depths. When the soil moisture reading dropped to near 80 in early May (**B**), irrigation water was applied and the soil moisture profile was restored, as shown by the graph lines reaching just below 20 cb (**C**). The drying cycle resumed until a partial irrigation occurred in late May (**D**). A partial irrigation was needed to replenish enough soil moisture to carry the crop through harvest without excessive moisture depletion and crop stress. The first cutting occurred in early June (**E**). Following cutting and baling, irrigation resumed until soil moisture content at all three depths was restored and readings measured below 20 cb (**F**).

www.westernwx.com/sid

Western Weather

Solano County Forecast

Western Weather Group
www.westernwx.com/sid
phone: 530-342-1700
email: forecaster@westernwx.com
by Forecaster Tom Cushman

Wednesday October 1, 2008 issued 5:30am

HIGHLIGHTS: Increasing cloudiness, not as warm today. Partly cloudy but dry tonight into Thursday morning. Much cooler Friday into Saturday as overnight rain gives way to scattered showers.

Short Term Weather Discussion: A weakening offshore weather system made good progress toward the West Coast overnight as the westerlies reasserted their influence over this disturbance. Thus while today will begin mostly sunny across the North State, leading clouds from this disturbance will spread inland over the region during the day as this system begins to advance onshore. This will leave Solano County cooler today as interference from this increase in cloudiness limits temperatures to the lower to middle 80s. Clouds will continue to increase across the North State, especially north of Solano County, overnight to bring a modest chance of sprinkles to the northern Sacramento Valley after midnight. This north valley precipitation threat is expected to peak shortly after dawn tomorrow, after which clouds will be on the decrease across the county the rest of the day. Still regional temperatures will be hard pressed to even reach 80F tomorrow as increasing sunshine will be insufficient to overcome the cooling of the air mass aloft.

SHORT TERM FORECAST SPECIFICS:

		Weather	Max/Min	Dew Pts	POP	Amounts	Winds
TODAY	(am)	Mostly Sunny	82-87	50-55	0%	none	S-SW 5-10 → 10-15
	(pm)	Partly Cloudy	80-85				S-SW 5-15 → 10-20
TONIGHT		Partly Cloudy	55-60	50-55	0%	none	S-SW 5-15
THURSDAY	(am)	Partly Cloudy	75-80	52-57	0%	none	SW-W 5-10 → 10-20
	(pm)	Mostly Sunny					SW-W 10-15 → 15-25

SV = Suisun Valley, D/H = Dixon/Hastings Tract

Extended Forecast Discussion: Weak ridging in advance of a fast approaching North Pacific storm system, will minimize cloudiness across Solano County Thursday night into Friday morning. However this will quickly change Friday afternoon as this well supported disturbance returns frontal clouds to the region. Models are significantly stronger with this weather system than yesterday, and now project a decent soaking for Solano County with this system's cold frontal passage Friday evening into the predawn hours of Saturday with amounts likely to range from 1/4-3/4". The current projection of the supporting trough moving across California (instead of Oregon) will leave the county cool and showery in the front's wake on Saturday. Dry weather will return Sunday as rebuilding high pressure leaves the valley sunny, breezy as north winds bring good drying to the region. North winds should extend through next Monday before the approach and passage of a secondary disturbance mainly north of California leaves Solano County a little cloudy and somewhat cooler on Tuesday. Further down the road, model solutions become more muddled.

EXTENDED RANGE OUTLOOK

	Fri 10/3	Sat 10/4	Sun 10/5	Mon 10/6	Tue 10/7
Weather	Mostly Cldy	Rain→Shwrs	M Sunny	Sunny	Partly Cldy
Max T	72-77	**62-67**	75-80	80-85	80-85
Min T	45-55	55-60	45-55	45-50	45-50
POP	40% eve	**60%**	0%	0%	0%
Amounts	Tr -.25	**.25 -.50**	none	none	none
Winds	S-SW 5-20	S → W 15-25	NW-N 5-25	NW-N 5-15	S-SW 5-15
ETo	.08 -.12	.02 -.06	.15 -.20	.15 -.20	.12 -.17

Trends Wed 10/8 - Fri 10/10

Max Temps:	Near to Above Normal
Min Temps:	Near normal
Precipitation:	None to Below normal
Wx Pattern:	Ridge emerges along West Coast after Tue system clips North State

SOLANO COUNTY CLIMATE SUMMARY

30 September 2008	Max/Min	Rainfall 24hr	Rainfall Seas	Rainfall % normal	Daily ETo	Past week ETo	Normals mx/mn	Record Max & Min
Winters (139)	90/53	0.00	0.00	--	--	--	--	--
Davis (006)	88/55	0.00	0.00	--	0.16	1.22	--	--
Dixon (121)	85/54	0.00	0.00	--	0.16	1.19	--	--
Vacaville	92/61	0.00	0.00	0%	--	--	85/52	105 (2001), 37 (1950)
Hastings Tract (122)	87/58	0.00	0.00	--	0.18	1.34	--	--
Travis AFB	88/58	0.00	0.00	0%	--	--	83/53	104 (1952), 41 (1954)
Suisun (123)	88/58	0.00	0.00	--	0.16	1.19	--	--
Suisun Valley	90/49	0.00	0.00	--	0.14	1.07	--	--

Solano County Weather Station Network
Daily Meteorological Summary
Tuesday, September 30, 2008

	Temperature					Avg	Avg	WIND			Precipitation		Min
	Max	time	Min	time	Avg	DewPt	RH	Avg	Gust	Gust	24hr	7/1 to date	Battery
	°F	occur	°F	occur	°F	°F	%	mph	mph	Dir	in.	in.	volts
Upper Suisun Valley	92.0	1601	51.2	613	69.4	46.3	50.2	1.4	9.3	SSE	0.00	0.00	12.36
Gordon Valley	88.1	1348	49.0	604	66.4	46.7	56.4	2.3	10.3	SSW	0.00	0.00	12.21
Suisun Valley	89.9	1402	49.4	537	67.8	45.7	51.6	1.9	10.3	SSW	0.00	0.00	12.57
Abernathy North	88.9	1527	48.7	516	66.6	47.7	57.4	2.9	12.5	SW	0.00	0.00	12.36
Abernathy South	86.4	1354	57.6	549	69.7	49.2	52.2	5.5	16.3	WSW	0.00	0.00	12.36
Dixon-West	91.0	1522	51.9	601	70.6	48.9	52.2	2.2	13.0	SSW	0.00	0.00	12.20

Solano County Weather Station Network
Daily Biometeorological Summary
Tuesday, September 30, 2008

	Grape GGD T>50°F		continuous hours		Mildew Stress	Chill Hours hrs < 45°F		Solar Rad	ETo	
	ytd	since 4/1	70-85	T>95°F	pts	ytd	11/1 on	cal/cm²	daily in.	weekly in.
Upper Suisun Valley	19.4	3554	4.0	0.0	30	0.0	-----	444	0.15	1.13
Gordon Valley	16.4	3301	4.5	0.0	0	0.0	-----	455	0.15	1.15
Suisun Valley	17.8	3232	2.8	0.0	0	0.0	1248	412	0.14	1.07
Abernathy North	16.7	3102	4.3	0.0	30	0.0	-----	449	0.16	1.14
Abernathy South	19.7	3079	4.4	0.0	40	0.0	-----	438	0.16	1.15
Dixon-West	20.6	278	3.4	0.0	20	0.0	-----	467	0.17	1.26

Solano County Weather Station Network
Suisun Valley Weather Station Degree-Day Report
Tuesday, September 30, 2008

	Peach Twig Borer/Codling Moth		Two-spotted Spider Mite	
	yesterday	season*	yesterday	season*
Suisun Valley	17.74	3332.0	15.12	2880.0

* season began February 29, 2008

Sacramento Valley ETo forecast	7 day outlook 10/1 - 10/7		Past week (9/24 - 9/30) summary				
			Daily		7 day	period	percent
	normal	forecast	max	min	total	normal	normal
Orland	1.00	0.90	0.19	0.15	1.18	1.08	109%
Durham	0.95	0.86	0.16	0.13	1.03	1.05	98%
Nicolaus	0.91	0.86	0.17	0.10	1.02	1.02	100%
Esparto	1.09	0.93	0.20	0.13	1.22	1.02	120%
Suisun Valley	0.99	0.94	0.19	0.14	1.19	1.08	110%
Davis	1.09	0.98	0.20	0.16	1.22	1.19	103%

Attachment K: District Agricultural Water Order form (not included in this report)

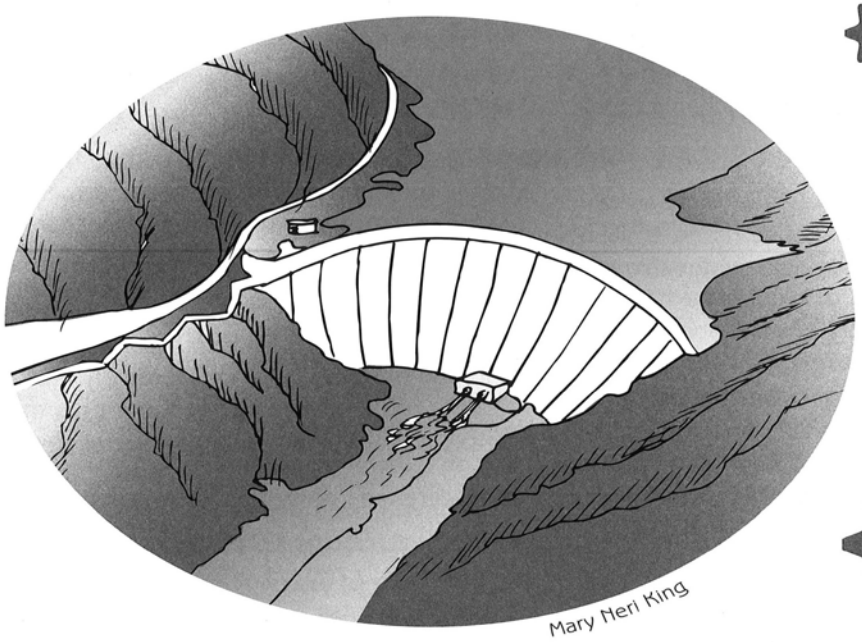
Attachment L: Drainage Problem Area Report (not included in this report)

Attachment M: School Education Program – media example

FREE

Classroom Materials for Teachers and Students!

2009-2010 WATER IN YOUR CLASSROOM



WATER IN OUR WATERSHED

School Water Education Program (SWEP)

Funded by:
City of Fairfield
City of Vacaville
Dixon-Solano Municipal Water Service
Fairfield-Suisun Sewer District
Solano County Water Agency
Solano Irrigation District
Suisun City
Suisun-Solano Water Authority

School Water Education Program Introduction & Contact Info

Teacher Curriculum Packets — PAGE 1

NEW!

Student Workbooks — PAGE 2

NEW!

Maps, Posters, and Other Items — PAGE 3

Resources for Loan — PAGE 4

Water Education Programs & More — PAGE 5

NEW! & Updated Programs

Water Education Programs & More *continued* — PAGE 6

Teacher Workshops — PAGE 7

Links to More Resources — PAGE 8

How to Order Information & Order Form — PAGE 9

WATER IS ESSENTIAL FOR LIFE

The cities, water agencies, and wastewater districts listed on the cover of this brochure are pleased to provide in-classroom educational programs by a California credentialed teacher and to supply DIXON, FAIRFIELD, SUISUN, TRAVIS, AND VACAVILLE educators with additional materials that are consistent with the California Public Science Content Standards (Kindergarten through grade twelve) **FREE** of cost to schools, teachers and students. These resources are available on a first-come, first-served basis for all schools (public and private), and other organizations such as 4-H, Scouts, After-school Programs, etc. and are delivered FREE of charge. The School Water Education Program (SWEP) is dedicated to providing resources to encourage students and adults to develop a healthy attitude of personal responsibly toward the environment and to develop skills needed to contribute meaningfully to the decision-making process on issues involving our resources, in particular conserving our most precious natural resource, **WATER**.

STUDENTS WITH A BETTER UNDERSTANDING OF THE VALUE OF WATER WILL:

- Personally use water more wisely
- Positively influence home & school water use
- Become more knowledgeable citizens

BENEFITS TO TEACHERS:

- Quality materials, evaluated by educators across the state
- State content standards alignment
- In-service workshops with possible professional development credits
- Challenging and fun cross-curricular activities enriching student learning while promoting student appreciation and awareness of water conservation

CLASSROOM PRESENTATIONS WITH ACTIVITIES FOR ALL GRADES EMPHASIZING:

- Water and its uses
- The water cycle
- Water conservation tips
- Water pollution prevention
- Where our water comes from
- The nature of water
- Water and wastewater treatment
- Our local watershed, irrigation systems and canal safety
- And so much more

HOW TO GET INVOLVED:

Simply choose the resources you need by using the order form at the back of this brochure. For further information or additional brochures please contact:

Ursula Heffernon, School Water Education Program Consultant
Tele/Fax: 530.661.7149 or uheffernon@pacbell.net
or plum@sidwater.org or go online (see page 8)

Orders will be delivered to and picked up from your classroom FREE of charge.

FREE TEACHER CURRICULUM PACKETS

ALIGNED TO CALIFORNIA STATE STANDARDS

PAGE 1

ALL ABOUT WATER *Grades K-2*

Teacher's guide containing 26 water related activities that integrate science, math, language arts, geography, art, music and drama. Activities include the water cycle, landforms, and conservation practices. These hands-on activities include reproducible student worksheets, allowing for investigative experiments.

WAVES, WETLANDS AND WATERSHEDS **Grades 3-8**

A classroom and community activity guide that addresses issues such as endangered species, marine debris, coastal geology, water use and much more. It is carefully aligned to the California State Science Content Standards.

CALIFORNIA WATER STORY *Grade 4*

Six lessons teaching about water as one of California's most important resources. The material integrates geography, history, science, math, and art to help develop specific skills (critical thinking, organizing data, predicting, graphing, etc.) It includes reproducible student sheets, a video, an EXCELLENT California water map, poster, and stickers.

FOUNTAINS OF COLUMBIA *Grades 4-6*

This 11 minute video is based on the actual diary of 11 year old Mary Leary who lived during the California Gold Rush Days. It was shot on location at Columbia State Historic Park, California, telling the story of a mining town struggling to manage resources and wrangling over water issues. The interdisciplinary lesson plans correlate with the California Content Standards for science, history/social science, and language arts. Hands-on ACTIVITIES included.

WATER PRECIOUS WATER *Grades 4-6*

Cooperative learning lessons about water and four activities that deal with the properties of water.

HANDS-ON WATER ACTIVITIES *Grades 1-6* NEW!

Several water science experiments promoting student math, graphing, manual dexterity, and interpretive skills.

CONSERVE WATER EDUCATOR'S GUIDE *Grades 6-12*

A 300 page guide designed to teach students how to conserve water with innovative activities and case studies. Other activities move students beyond the classroom to the community.

GROUNDWATER EDUCATION *Grades 7-12*

The material is designed to teach students about the relationship between groundwater and surface water, porosity and permeability, geology of aquifers, and the concept of measuring contaminants. The 52-page teacher's booklet contains lesson plans, demonstrations, lab experiments, a board game, a groundwater map, and a groundwater model (loan item) for demonstration purposes. See page 4 for details.

CALIFORNIA WATER PROBLEMS *Grades 9-12*

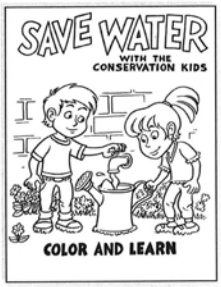
Reproducible materials for four role-playing strategies that allow students to research and work out solutions to real problems involving the management of California water. The four topics included are: Delta Dilemma; Kesterson Clean Up; Colorado Cut-Back; and Groundwater Worries. Includes map and supplemental materials.

PROJECT WATER SCIENCE *Grades 9-12*

Designed for earth and physical science classes, these 14 labs include reproducible student sheets and background teacher materials. Consistent with California Content Standards, these labs can be used individually or as a unit. They are divided into three sections: Water Quality; Water and the Environment; and Water and People.

FREE STUDENT WORKBOOKS

Available while supplies last. Substitution may be made pending availability of materials.



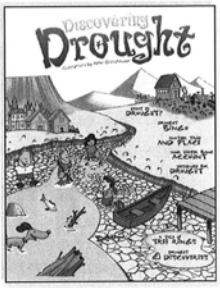
WATER AND ME *Grades K-1*

"Water and Me" is an activity and coloring book that includes various puzzles teaching children about water use, the importance of clean water, the forms water takes, and includes a two page illustration of the water cycle. (16 pages)

PAGE 2

SAVE WATER *Grades 1-2*

An 8 page coloring booklet of various puzzles and activities to inspire students to save water and money while sharpening their reading skills.

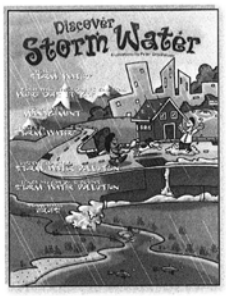


WATER PLAY *Grades 2-3* NEW!

Fun-filled fourteen pages of guided activities promoting math and reading skills while encouraging students to save water. Includes teacher guide, too.

SALMONID SAVERS *Grades 2-6*

Capture the imagination of your students as they learn about the anadromous species native to their local waters in this beautifully illustrated activity book. Tiny and Flo, a chinook salmon and a steelhead trout, share their experiences as they travel from the ocean back to their spawning grounds in seven engaging, cross-curricular activities.



WATER FUN *Grades 3-4*

A colorfully illustrated 16-page comic book with stories, games, and puzzles designed to teach about the water cycle and water conservation. Includes teacher guide, too.

DISCOVERING DROUGHT *Grades 3-6* NEW!

Teaching about DROUGHT cannot come at a better time for Californians! Reading and math skills are promoted in this fun-filled activity booklet developed by Project WET and other water agencies. (14 pages)

CALIFORNIA WATER WORKS AND WHY IT DOES *Grades 4-8*

This colorful student workbook helps students understand the water cycle and how water is delivered by natural and man-made systems in California. Conservation is also discussed. Available in English and **Spanish**. (16 pages)

CONSERVE WATER STUDENT'S BOOKLET *Grades 4-8*

A 16 page booklet of games, puzzles, and activities designed to teach students about water conservation. To be used with CONSERVE WATER EDUCATOR'S GUIDE. (See page 1)

DISCOVER STORM WATER *Grades 5-8*

This lively booklet explains the importance of storm water management and is filled with interesting facts, engineering and mathematical exercises, vocabulary, puzzles and ways in which we all can prevent storm water pollution.

CAPTAIN HYDRO, A WATER CONSERVATION WORKBOOK *Grades 5-8*

A comic book story of Captain Hydro chasing down the Evil Water Bandit with 26 pages of student worksheets, projects, and problem-solving situations. Available in English and **Spanish**. (30 pages)

FREE MAPS, POSTERS AND OTHER ITEMS

Available while supplies last. Substitution may be made pending availability of materials

FREE STUDENT INCENTIVE ITEMS

LIST A—Teach a unit on water and request a classroom set of **TWO ITEMS** from the following list to distribute to participating students. Colorful items below boast a variety of water messages; great for extending students' awareness.

Erasers

Pencils

Rulers

Static Clings

Stickers

"Kids Save Water" Coloring Pamphlet (for Kindergarten only)

MAPS & POSTERS!

ONE PER TEACHER:

The Water Cycle Map ***Grades K-12***

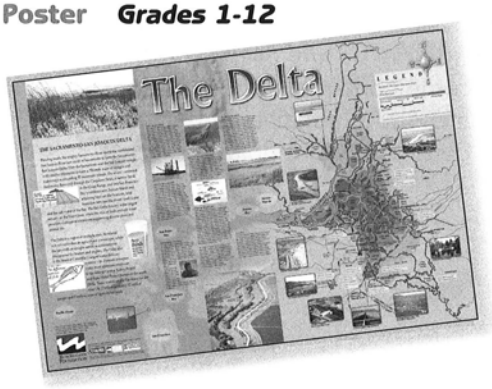
California Water Ways Poster Map ***Grades 3-12***

The Delta Map ***Grades 4-12***

Watershed Water Supply and Uses Poster ***Grades 1-6***

How Does Groundwater Affect Your Water Supply ***Grades 6-12***

How We Can Save Water At Home Poster ***Grades 1-12***



LIST B—The following items are also available for teachers to order. Please check 1 to 5 of these items on the order form for students to receive.

CALIFORNIA'S AMAZING DELTA NEW!
Book Covers: graphics and activities students complete illustrating the routing of water through our Sacramento-San Joaquin Delta-our vital source of drinking water for California!

PAGE 3

Bookmarks: student designed providing water conservation tips.

California Water Facts Booklet: provides important facts about California water.

Control It!: a hand reference guide to identify and control pests in and around the home with less toxic methods.

"F.O.G. - No Fats, Oil or Greasy Scraps Down the Drain!": plastic scrapers to remind families of disposing "F.O.G." in the garbage rather than drains to prevent clogs. NEW!

WATER CONSERVATION PLEDGE SHEETS NEW!
Students and teachers read and sign the pledge acknowledging their efforts to conserve California water.

PARENT/STUDENT WATER CONSERVATION SURVEY CHECKLIST SHEETS NEW!
Students and families complete their household survey checklists and return them to class for further discussion and ways of taking action. Prizes for students included.

RESOURCES FOR LOAN

Up to 2 weeks loan time.

ENVIROSCAPE MODEL ***Grades 5-12***

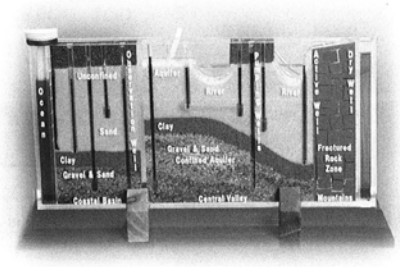
A table top model of a community that may be used for hands-on activities to teach about point and nonpoint source pollution.

GROUNDWATER MODEL ***Grades 7-12***

Engage your class with a vivid demonstration of groundwater flow, its sources, its flow beneath the earth's surface, and how this resource impacts life at the earth's surface.

WATERSHED & CALIFORNIA MAPS ***Grades 4-12***

- Excellent 2' x 3.5' relief map of California for students and teachers alike.
- A dynamic watershed relief map to teach students about our local watershed.



PAGE 4

WATER TEST KIT ***Grades 5-9***

A simple water monitoring kit testing for pH, alkalinity, and dissolved oxygen.

THE WATER CYCLE/WATER CONSERVATION VIDEO ***All ages***

The **video** is several minutes long describing the water cycle and conservation methods.

OLLIE SAVES THE PLANET ***Grades 1- 12***

A recently developed **CD ROM** game including lesson plans by the Water Education Foundation. Ollie and friends help spread the message of environmental stewardship and sustainability.

CADILLAC DESERT VIDEOS ***Grades 9-12***

Five **videos** (55-131 minutes each) illustrate the history of our "invisible resource," while showing us the natural beauty of our waterways and the artificial beauty of dams. What happens, however, when the dams start silting up, rivers become contaminated, wetlands vanish, and rivers no longer flow to the sea? With desalinization a costly alternative, and with increased pressures to restore native ecosystems, what does the future hold?

WATER EDUCATION PROGRAMS & MORE

IN-CLASS SWEP WATER CONSERVATION PRESENTATIONS FOR ALL GRADE LEVELS

Take advantage of this FREE, varied and highly interactive 45-50 minute water conservation presentation based on CA State Standards for each grade level (Kindergarten to 12 grades). Useful and fun FREE teacher and student give-a-ways included. Why not invite your entire grade level at your school to participate?

Faculty In-Service Presentations at Your School

This is an opportunity for entire school staff or individual grade level/subject area teachers, to learn about the program as well as preview and receive/order materials. General information about local water sources and issues will be presented. Presentations are 10-20 minutes and are scheduled at staff's convenience. We recommend scheduling an abbreviated version during monthly school in-service programs.

2009–2010 Conserve Water Bookmark Art Contest for all grades is sponsored by the SWEP Committee. This well received annual event in our region will be in April/May 2010 through your local libraries which will provide contest information and entry forms. This event is in anticipation of California's recognition of "May–Water Awareness Month." **Wonderful prizes such as tickets to Six Flags, movie theater tickets, teacher gift certificates, etc.*** and public recognition will be awarded in June to student contest winners and their classmates.

Contact

Ursula Heffernon

at

530.661.7149

or

uheffernon@pacbell.net

PAGE 5

WATERWAYS

WaterWays is a FREE water education program for Solano County 4th, 5th, and 6th grade classes. Our three distinct grade-level programs are based on science standards. WaterWays teaches about our watershed, water systems, water conservation, water quality protection, and regional ecology as part of our interactive one hour class visit program OR a hands-on Friday field trip to Lake Solano Park OR both! At least 2 participating teachers per school please. Limited numbers of bus scholarships are available. Please contact WaterWays coordinator Megan Harns at megan.harns@gmail.com for more information.

Register as soon as possible to reserve your field trip-don't wait, as trip dates go fast!

WATER EDUCATION PROGRAMS & MORE *continued*

LYNCH CANYON—WATERSHED EXPLORERS PROGRAM

Investigating the connection between storm water and our environment

Third grade classes are invited to the Lynch Canyon Open Space area for a FREE four-hour field trip. The field trip is led by professional environmental educators from Solano and Suisun Resource Conservation Districts. Students will take a two-mile hike, participating in field discussions and activities designed to help them understand the fragile habitats of birds and other wildlife that live in our watersheds. The program utilizes science and place-based learning to build awareness and understanding of how storm water affects local creeks. Funding is provided through Solano County and city jurisdictions.

All concepts are directly linked to the California State Standards. A limited number of spaces are available

For further details contact Marianne Butler with the Solano Resource Conservation District — 707.301.5778 or mkb353@hotmail.com

RUSH RANCH - SUISUN MARSH EDUCATION PROGRAM

Sixth & seventh graders from Fairfield and Suisun City are invited on a FREE full-day field trip to Rush Ranch Nature Center. Students will learn about marine debris, take a nature hike and rotate through stations centered on soil, water, and plants. Students prepare for the field trip with three pre-field trip classroom lessons presented by educators from Solano and Suisun Resource Conservation Districts. Hands-on classroom lessons center on watersheds, wetland functions, mapping, and endangered species in Suisun Marsh. Funding is provided by the Solano County Water Agency.

SUISUN MARSH NATURAL HISTORY ASSOCIATION ENVIRONMENTAL EDUCATION PROGRAM (SMNHA)

Visit the 55,000 acre Suisun Marsh, the largest brackish marsh in the United States and the largest remaining coastal wetland in California. Various exciting and fun presentations and field trip opportunities are available for you and your students for a nominal fee.

For further details contact Monique Liguori, at 707.429.4295 or monique@suisunwildlife.org or www.suisunwildlife.org/eeclass.htm

TEACHER WORKSHOPS & OTHER OPPORTUNITIES

PROJECT W.E.T. TEACHER WORKSHOPS

This **FREE** hands-on workshop will allow participants to receive and explore a 516 page curriculum guide. This guide, highly rated in the Environmental Compendium for Water Resources from the State Department of Education, has activities for grades K-12. The teacher friendly guide includes indexes by topics, subject areas, concepts, time requirements, and much more. Each activity includes background material, supply lists, prep time, and reproducible student worksheets. It is aligned with the California State Content Standards.

The Project WET Workshops scheduled in Solano County are: Saturday, November 7, 2009 & possibly another workshop in February, TBA, 2010. Mark your calendars and request registration forms for the upcoming FREE workshops. Workshops fill up quickly.

Breakfast and lunch provided on site (TBA). A Great way to earn professional development credits or college units! ***Contact Ursula at 530.661.7149 or uheffernon@pacbell.net***

COASTWEEKS—September 19–October 11, 2009

A 3-week long celebration encourages appreciation and preservation of our coast and inland waterways. A calendar of events for you and your students to participate in is posted at www.coastforyou.org. International Coastal Cleanup Day kicks off September 19, 2009. Marianne Butler is our Solano County Coordinator for this event this year. Contact her at 707.301.5778 or mkb353@hotmail.com for further information. Plan ahead for next year (*September 18-October 10, 2011*) if you missed the fun this year.

High School Science Fair Project Awards will be provided recognizing water related projects. Just indicate when your school science event will be held and details will be forwarded to you and your students.

LINKS TO MORE RESOURCES

AN EYE ON CLIMATE CHANGE - http://www.usanpn.org

AQUAFORNIA - http://aquafornia.com

BEFORE YOU HARVEST- CONSERVE - http://www.harvesth2o.com/BeforeHarvest.shtml

CA Department Of Water Resources - http://www.dwr.water.ca.gov/ and http://www.water.ca.gov/

CALIFORNIA COOPERATIVE SNOW SURVEYS - http://cdec.water.ca.gov/snow/

CALIFORNIA DROUGHT WEBSITE - http://www.water.ca.gov/drought

CALIFORNIA WATER RESOURCES - http://ca.water.usgs.gov

City of Dixon - http://www.ci.dixon.ca.us/publicworks/index.html

***City of Fairfield** - http://www.ci.fairfield.ca.us/publicworks.htm

***City of Vacaville** - http://www.ci.vacaville.ca.us/departments/public_works/

CLIMATE CLUES IN SPRING WILDFLOWERS - http://www.budburst.org

***CREEC Network and Resource Directory** - http://www.creec.org/

Education and the Environment Initiative - http://www.calepa.ca.gov/education/eei/

***Fairfield Suisun Sewer District** - http:///www.fssd.com

H2O, WHERE DID YOU GO? - http://www.showsthatteach.com

http://www.creec.org/

***Solano County Water Agency** - http://www.solanosaveswater.org

***Solano Irrigation District (SID)** - http://www.sidwater.org/water_quality

***Suisun City** - http://www.suisun.com/PublicWorks.html

The California Regional Environmental Education Community (CREEC)

WATER & MYTHOLOGY
http://webworld.unesco.org/water/wwd2006/world_views/water_mythology.shtml

WATER AND OUR HERITAGE
http://webworld.unesco.org/water/wwd2006/water_heritage/water_social_lives.shtml

WATER AND WORLD VIEWS
http://webworld.unesco.org/water/wwd2006/world_views/water_language.shtml#top

Water Education Foundation - http://www.watereducation.org/

WATER USE CALCULATOR http://www.waterbudgets.com/ConserVision/CUWCC/DataInput.htm

***Links to the electronic version of this SWEP Brochure on these sites.**

TO ORDER, COMPLETELY fill out the information at the bottom of THIS PAGE.

One form for each teacher. Detach order page, fold, stamp and mail or FAX to 530.661.7149.

Post or fax this completed order form immediately while materials are still available and before programs are filled.

To schedule in-class programs, field trips and/or workshops, be sure to contact the person noted to make your request as early as possible in the school year for the best chance of participating.

For additional information, contact: Ursula Heffernon, School Water Education Program Consultant; Tele/Fax: 530.661.7149 or uheffernon@pacbell.net or plum@sidwater.org

PLEASE INDICATE WHICH RESOURCE ITEMS YOU WOULD LIKE TO BORROW (page 4)

_____

_____

TEACHER CURRICULUM PACKETS (page 1)

One per teacher for grade level taught:

_____ All About Water **Grades K-2**
_____ Waves, Wetlands and Watersheds **Grades 3-8**
_____ California Water Story **Grade 4**
_____ Fountains of Columbia **Grades 4-6**
_____ Water Precious Water **Grades 4-6**
_____ Hands-On Water Activities **Grades 1-6**
_____ Conserve Water Educator's Guide **Grades 6-12**
_____ Groundwater Education **Grades 7-10**
_____ California Water Problems **Grades 9-12**
_____ Project Water Science **Grades 9-12**

STUDENT WORKBOOKS (page 2 & 3)

Indicate number of students taught:

_____ Water and Me **Grades K-1**
_____ Save Water **Grade 1-2**
_____ Water Play **Grade 2-3**
_____ Salmonid Savers **Grade 2-6**
_____ Water Fun **Grades 3-4**
_____ Discovering Drought **Grades 3-6**
_____ California Water Works **Grades 4-8**
_____ **English** _____ **Spanish**
_____ Conserve Water Student's Workbook **Grades 4-8**
_____ Discover Storm Water **Grades 5-8**
_____ Captain Hydro **Grades 5-8**
_____ **English** _____ **Spanish**

MAPS AND POSTERS (page 3 & 4)

Maximum of one per teacher:

_____ The Water Cycle Map **Grades K-12**
_____ California Water Ways Poster Map **Grades 3-12**
_____ The Delta Map **Grades 4-12**
_____ Watershed Water Supply & Uses Poster **Grades K-6**
_____How Does Groundwater Affect Your Water Supply Poster **Grades 6-12**
_____ How We Can Save Water At Home Poster **Grades 1-12**

OTHER FREE ITEMS (page 3 & 4)

Check only 2 items per classroom from List A:

_____ Erasers _____ Pencils _____ Rulers
_____ Static Clings _____ Stickers
_____ Kids Save Water Pamphlets (for Kindergarten only)

Check 1 to 5 of the following items per classroom from List B:

_____ California's Amazing Delta Book Covers
_____ Student art bookmarks
_____ California Water Facts Booklet
_____ Control It! Guide
_____ F.O.G. Scrapers
_____ Water Conservation Pledge Sheets
_____ Parent/Student Water Conservation Survey Checklist Sheets

CHECK AS MANY OF THE FOLLOWING 2009-2010 OPPORTUNITIES YOU WOULD LIKE TO PARTICIPATE IN: (pages 5-7)

_____ In-Class Water Conservation Presentations **All Grade Levels**
_____ Faculty In-Service SWEP presentation **FOR EDUCATORS**
_____ 2009-2010 Conserve Water Bookmark Art Contest April - May, 2010 (**K-12**)
_____ *WaterWays* Program **Grades 4-6**
_____ Lynch Canyon – *Watershed Explorers Program* **Grades 3**
_____ Rush Ranch - *Suisun Marsh Program* **Grades 6 & 7**
_____ Suisun Marsh Field Trips **All Grades 2-12: Nominal Fee**
_____ Project WET Teachers Workshops **All Grade Levels**
___ **November 11, 2009** ___ **February TBA, 2010**
_____ COASTWEEKS Participation **September 19–October 11, 2009**
_____ High School Science Fair Project Awards

TEACHER'S FULL NAME: _____

Grade: _____ Number of Students: _____ School Name: _____

Email (*must provide*): _____

Telephone: _____

Best time to call: _____

Comments: _____

Attachment N: School Education Program – outreach table

SWEP School Districts July 1, 2007 - June 30, 2008	**SWEP Program**	**WaterWays Program**	**Great Water Mystery Assembly Program**	**Journey of the Salmonid Assembly Program**	**Fairfield-Suisun Sewer District**	**Vacaville Utility District**	**Solano RCD Biomonitoring& Watershed Explorers' Programs**	TOTALS REACHED	
(Revised June 27, 2008)	Ursula Heffernon	Megan Harns	Lyndly Martin/	Lyndly Martin/	Kevin Cullen/	Lily Meyer	Marianne Butler	TEACHERS	STUDENTS
		Fieldtrips/	Jennifer Seims	Jennifer Seims	Margaret Kralovec	No #'s provided			
		Class visits							
Dixon									
Teachers	2	3/0	4	0	M. Kralovec provided #'s		0	9	
Students	41		60	0	for the Bioassessment		0		101
					& Watershed Explorer				
Vacaville					programs which M. Butler				
Teachers	32	17/6	0	6	taught. Kralovec's #'s did		0	61	
Students	1283		0	200	not match M. Butler's #'s.		0		1,483
					M. Kralovec did not				
Travis					provide any FSSD tour #'s				
Teachers	4	2/6	0	69			8	90	
Students	100		0	1545			180		1,825
Fairfield									
Teachers	25	9/6	38	66			15	159	
Students	818		824	2125			383		4,150
Suisun									
Teachers	15	Part of Fairfield #'s	Part of Fairfield #'s	Part of Fairfield #'s			1	16	
Students	300						33		333
Vallejo									
Teachers	2	0/0	47	28			10	87	
Students	43	0	640	810			229		1,722
	(2585 students)	(2165 Students*)	(1524 Students)	(4680 Students)	(Students)	(Students)	(825 Students)		
		[* #'s not provided							
		per school district]							
Vallejo (Youth Ag Day)									
Teachers		M. Kralovec did not							
Students		provide #'s							
Suisun Valley Farm Fun Days									
Adults	68							68	
Children	50								50
Project WET Workshop									
Teachers (Nov. + Feb.)	24							24	
SWEP Totals Reached								**514**	**11,779**

Attachment O: Board Resolution adopting plan

SOLANO IRRIGATION DISTRICT
RESOLUTION NO. 09-17

RESOLUTION OF THE BOARD OF DIRECTORS OF SOLANO IRRIGATION DISTRICT ADOPTING THE 5 YEAR WATER MANAGEMENT PLAN REVISION, MARCH 2009

WHEREAS, SID has been implementing water conservation measures at the District level for many years; and

WHEREAS, SID prepared a Water Management Plan in December 2002 under the USBR Central Valley Project Improvement Act requirements, received comments from the USBR and adopted the Plan in March 17, 2003; and

WHEREAS, the District has prepared annual updates to the Plan since 2000; and

WHEREAS, the USBR is requiring a 5 Year Water Management Plan Revision.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Solano Irrigation District adopts the March 2009, 5 Year Water Management Plan Revision, prepared pursuant to USBR guidelines, and will implement the Plan and practices contained therein.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Solano Irrigation District on the 16th day of March 2009, by the following vote:

AYES: BISHOP, COLLA, GRANT, HANSEN

NOES: NONE

ABSENT: CURREY

ABSTAIN: NONE

Robert Hansen, President
Solano Irrigation District Board of Directors

ATTEST: I hereby certify that the foregoing Resolution was duly made, seconded and adopted by the Board of Directors of Solano Irrigation District at a regular meeting of this Board held March 16, 2009.

David M. Mansfield, General Manager to the
Board of Directors of
Solano Irrigation District

SOLANO IRRIGATION DISTRICT

RESOLUTION NO. 09-58

ADOPTING THE REVISED 5-YEAR WATER MANAGEMENT PLAN (WMP)

At a regular meeting of the Board of Directors of Solano Irrigation District held at the District Office on the 17th day of November 2009, the following resolution was approved and adopted:

WHEREAS, SID submitted a plan to the USBR in March, 2009; and,

WHEREAS, the USBR has since requested additional information and data; and,

WHEREAS, the District has revised the plan based on USBR comments and includes an urban water management plan component,

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of Solano Irrigation District authorizes the submission of the revised plan to the USBR.

PASSED AND ADOPTED on the 17th day of November 2009, by the following vote:

AYES: BISHOP, COLLA, CURREY, GRANT, HANSEN

NOES: NONE

ABSTAINING: NONE

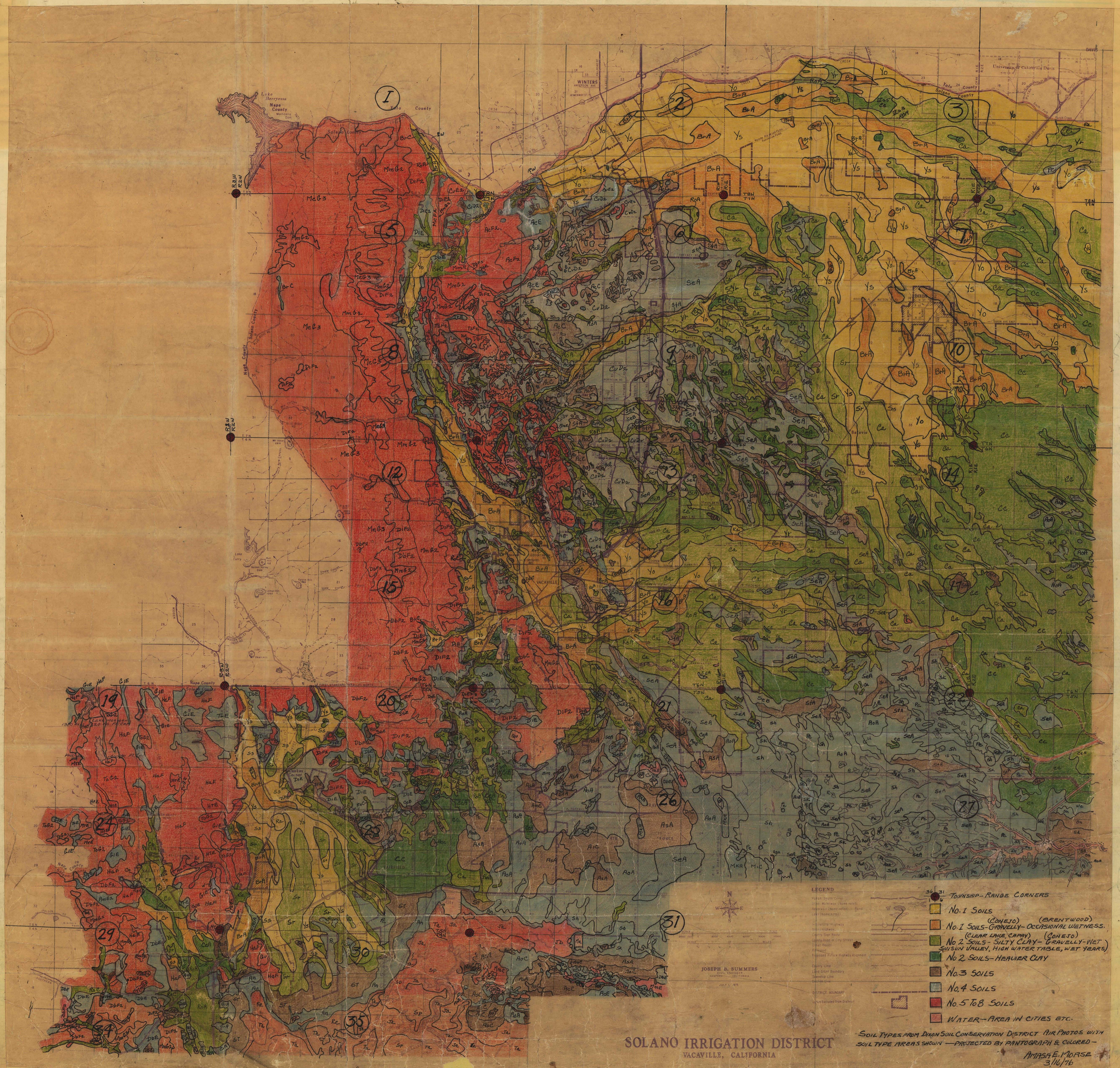
ABSENT: NONE

DATED:

Robert Hansen,
President of the
Board of Directors of the
Solano Irrigation District

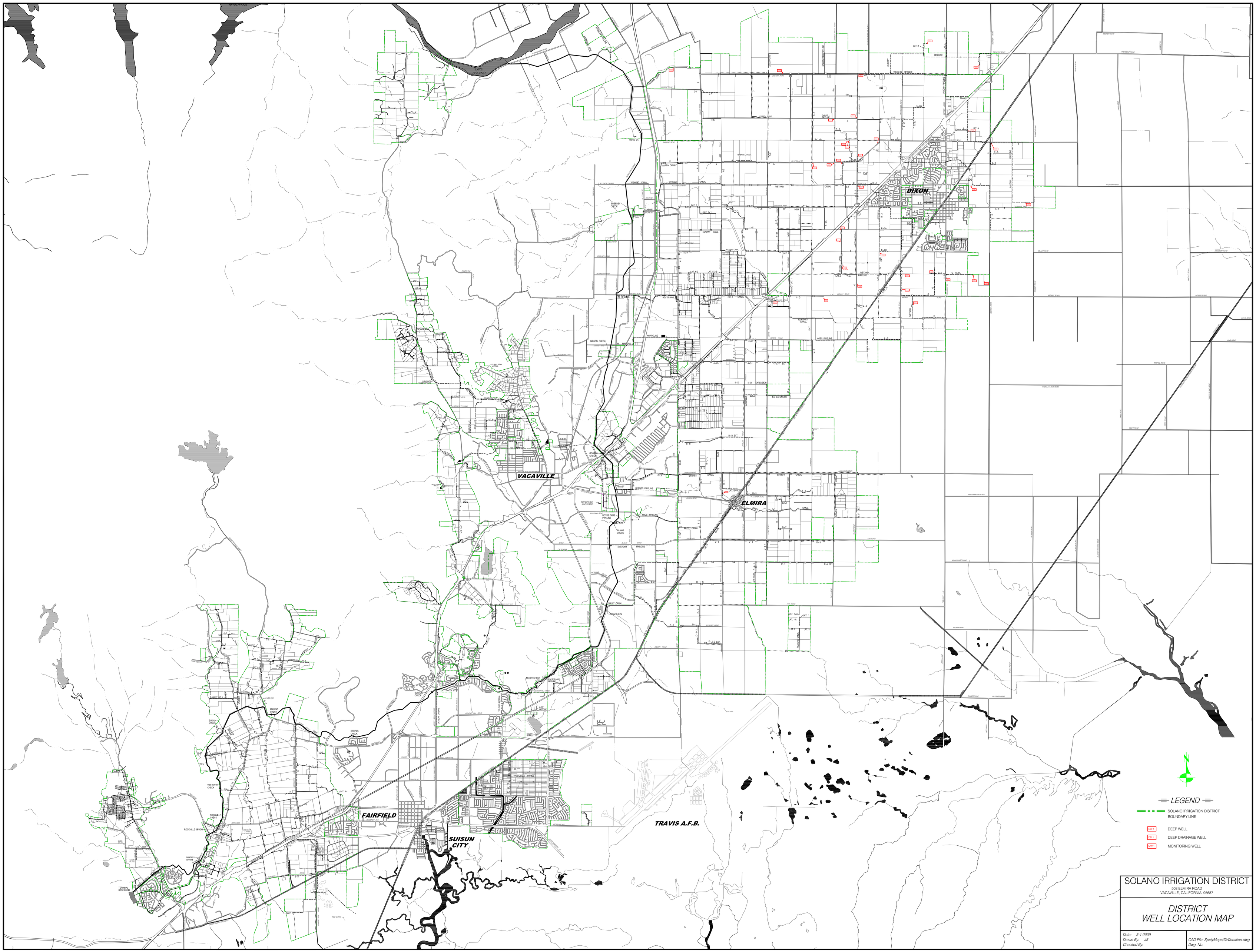
ATTEST: I hereby certify that the foregoing was duly made, seconded and adopted by the Board of Directors of the Solano Irrigation District at a special meeting of this Board held November 17, 2009.

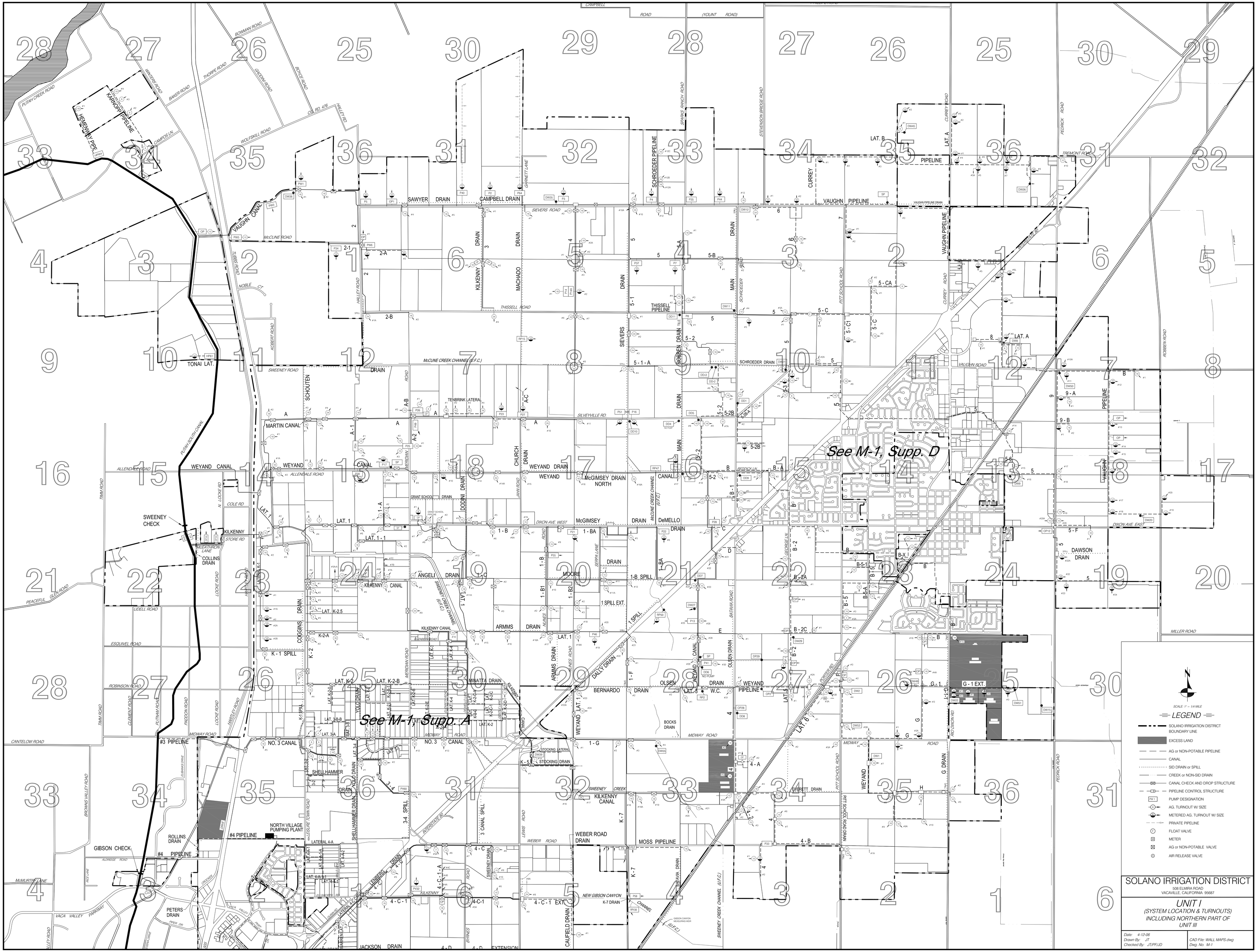
David M. Mansfield,
Secretary to the
Board of Directors of the
Solano Irrigation District

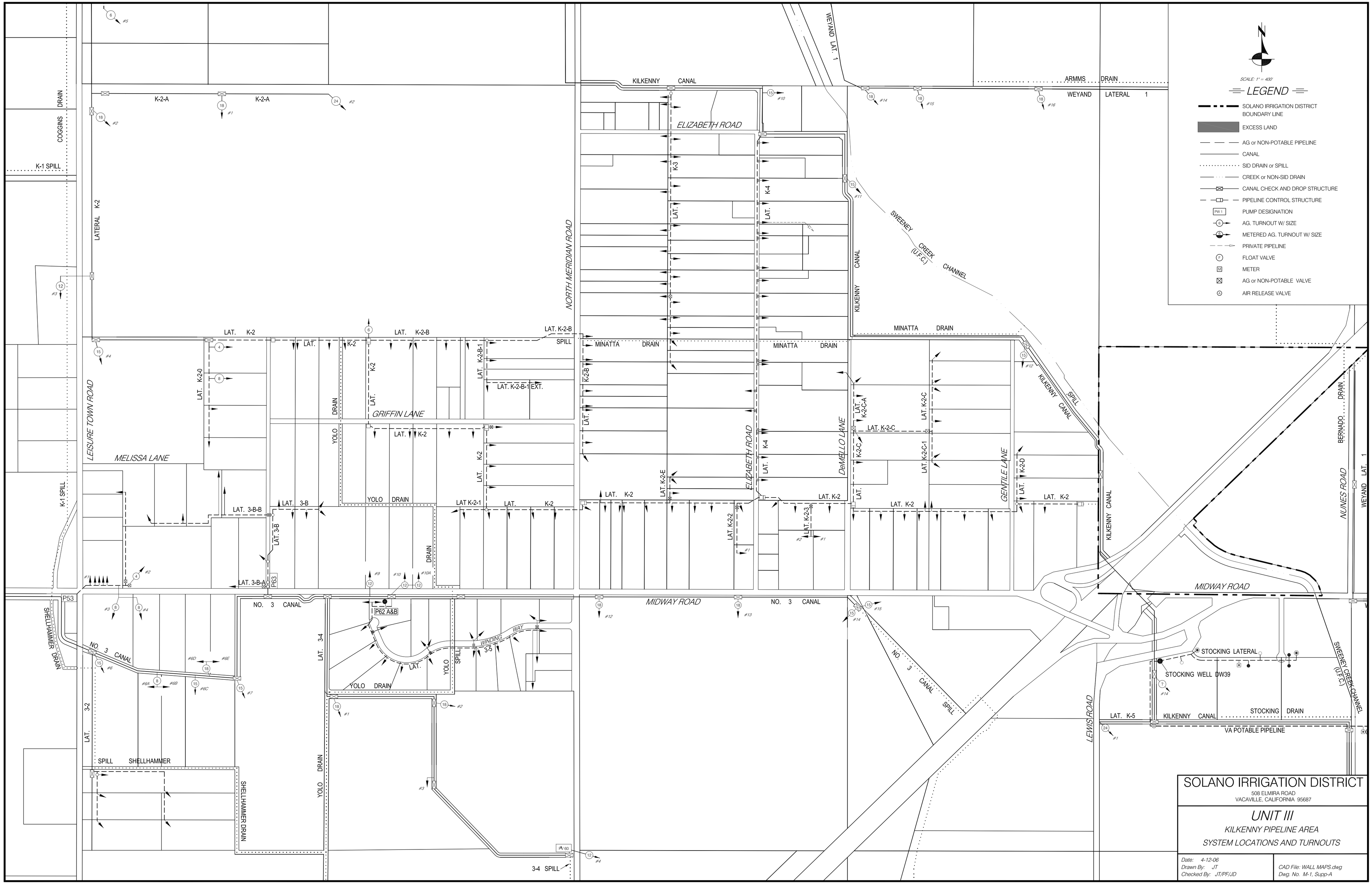


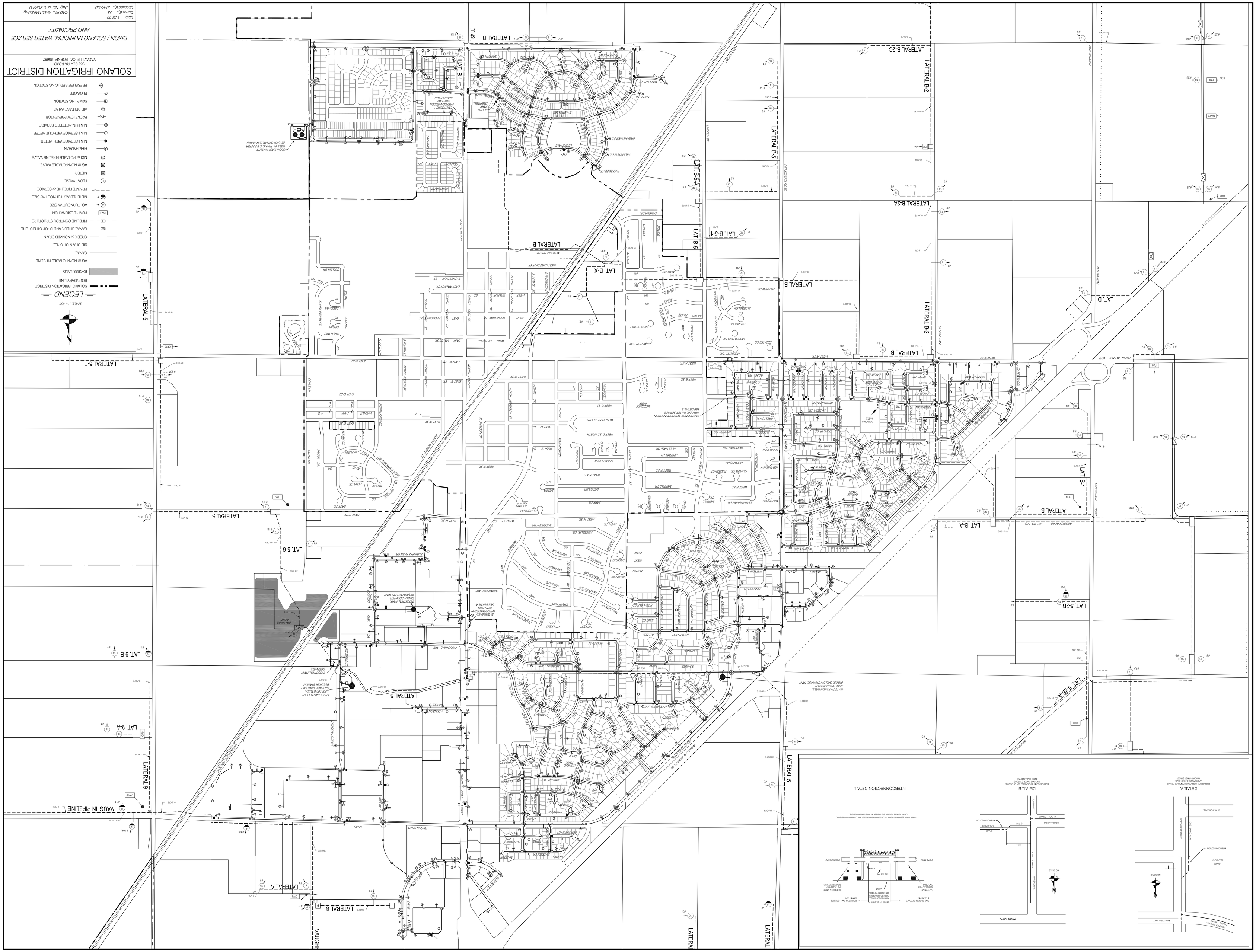
SOLANO IRRIGATION DISTRICT

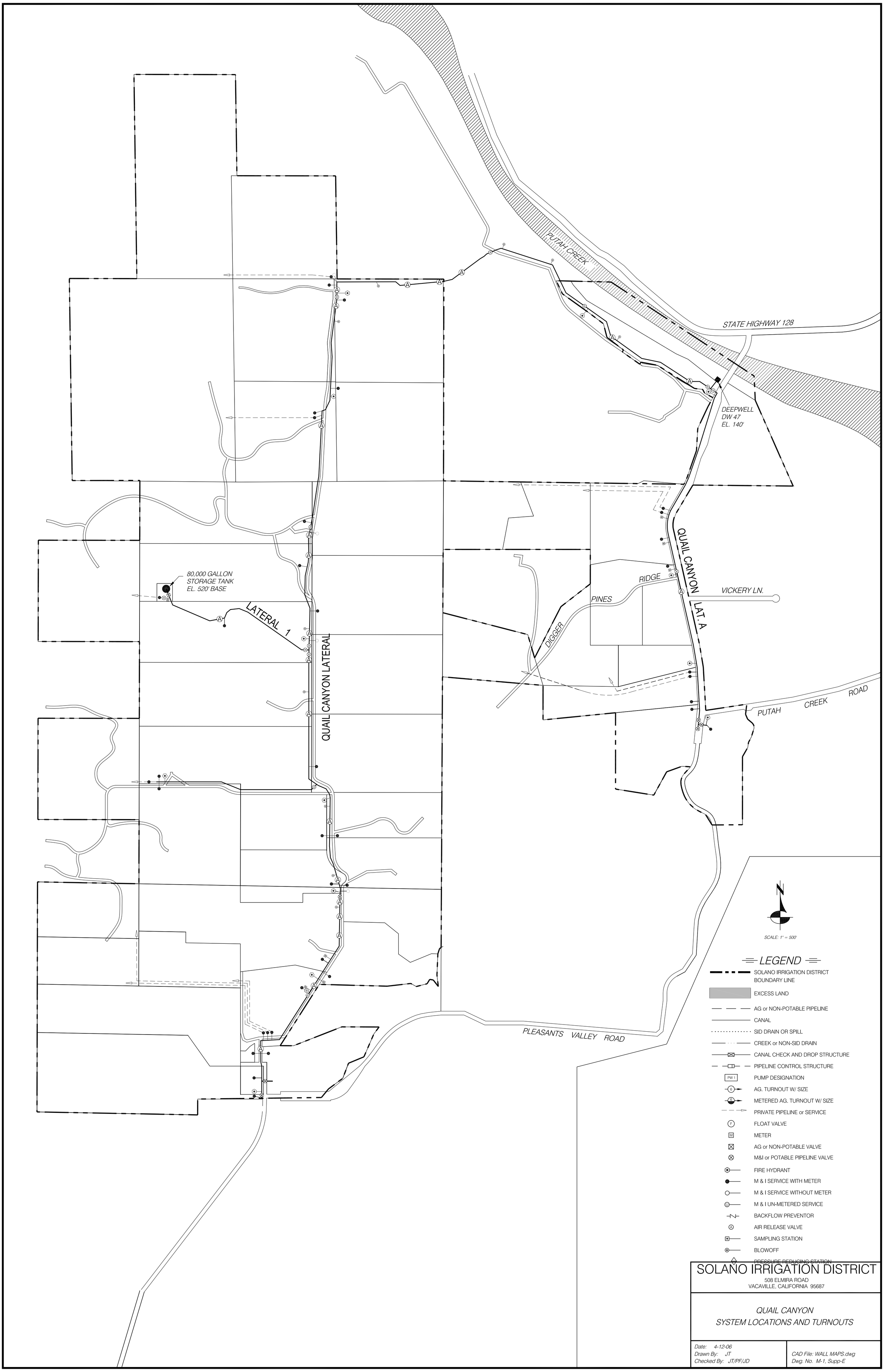
VACAVILLE, CALIFORNIA


DIXON
VACAVILLE
ELMIRA
FAIRFIELD
SUISUN CITY
TRAVIS A.F.B.
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
DW 1
DEEP WELL
DD 1
DEEP DRAINAGE WELL
MW 1
MONITORING WELL
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
DISTRICT
WELL LOCATION MAP
Date: 5-1-2009
Drawn By: JS
Checked By:
CAD File: SpctyMaps/DWlocation.dwg
Dwg. No.


See M-1, Supp. D
See M-1, Supp. A
SCALE: 1" = 1/4 MILE
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT I
(SYSTEM LOCATION & TURNOUTS)
INCLUDING NORTHERN PART OF
UNIT III
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-1
SAWYER DRAIN
CAMPBELL DRAIN
VAUGHN CANAL
McCUNE ROAD
SIEVERS ROAD
THISSELL ROAD
McCUNE CREEK CHANNEL (U.F.C.)
SWEENEY ROAD
SILVEYVILLE RD
MARTIN CANAL
WEYAND CANAL
ALLENDALE ROAD
DIXON AVE. WEST
DIXON AVE. EAST
MILLER ROAD
MIDWAY ROAD
CANTELOW ROAD
PEACEFUL GLEN ROAD
ROBINSON ROAD
ESQUIVEL ROAD
UDELL ROAD
COLE RD
KILKENNY STORE RD
SWEENEY CHECK
COLLINS DRAIN
KILKENNY CANAL
ANGELI DRAIN
MOORE DRAIN
ARMMS DRAIN
DALLY DRAIN
BERNARDO DRAIN
OLSEN DRAIN
WEYAND PIPELINE
MINATTA DRAIN
NO. 3 CANAL
#3 PIPELINE
#4 PIPELINE
NORTH VILLAGE PUMPING PLANT
ROLLINS DRAIN
GIBSON CHECK
PETERS DRAIN
JACKSON DRAIN
WEBER ROAD DRAIN
MOSS PIPELINE
NEW GIBSON CANYON K-7 DRAIN
CAUFIELD DRAIN
SWEENEY CREEK CHANNEL (U.F.C.)
G - 1 EXT.
DAWSON DRAIN
PIPELINE
VAUGHN PIPELINE
SCHROEDER PIPELINE
THISSELL PIPELINE
KARNOFF PIPELINE
HEINEMANN PIPE
TONAI LAT.
LAT. A
LAT. B
TENBRINK LATERAL
SHELLHAMMER DRAIN
EVERETT DRAIN
G DRAIN
PITT SCHOOL ROAD DRAIN
PUTAH SOUTH CANAL
PUTAH CREEK ROAD
VACA VALLEY PARKWAY
BROWNS VALLEY ROAD
TIMM ROAD
LOCKE ROAD
PEDRICK ROAD
ROBBEN ROAD
VAUGHN ROAD
CURREY ROAD
PITT SCHOOL ROAD
TREMONT ROAD
WALTERS ROAD
BAKER ROAD
THORPE ROAD
BOWMAN ROAD
GADDY ROAD
ROYCE ROAD
HALLEY RD
WOLFSKILL ROAD
CAMPOS LN
NOBLE CT
KORBIT ROAD
TUBBS ROAD
HALLEY ROAD
MEYERS ROAD
ALLEN ROAD
COLE RD
N. LOCKE RD
MEADOW LANE
LATERAL K1
MATRIX ROAD
COGGINS DRAIN
CLEMENT ROAD
PUTNAM ROAD
PADDON ROAD
HARTLEY ROAD
BROWN VALLEY ROAD
ALDRIDGE ROAD
RIZZI LANE
McMURTRY LANE
EBBANKS DRIVE
ELLIS LAKE TOWN ROAD
SHELLHAMMER DRIVE
VOLO DRIVE
VACA VALLEY PARKWAY
RIVER DRIVE
INTERSTATE 80
LEWIS ROAD
WEBER ROAD
SWEENEY CREEK
KILKENNY
MIDWAY
WEYAND
SPRINGS RANCH ROAD
STEVENSON BRIDGE ROAD
GARNETT LANE
SEVERS
MAIN
DRAIN
CHURCH DRAIN
DODONI DRAIN
GRANT SCHOOL DRAIN
McGIMSEY DRAIN NORTH
McGIMSEY
DeMELLO DRAIN
1 SPILL
1 SPILL EXT.
1-B SPILL
K-1 SPILL
3 CANAL SPILL
3-4 SPILL
STOCKING LATERAL
STOCKING DRAIN
LEBERG DRAIN
4-C-1 EXT.
4-D EXTENSION
BOCKS DRAIN
BATAVIA ROAD
GEORGE LN.
OLSEN DRAIN
WEYAND CANAL
SCHROEDER DRAIN
VAUGHN PIPELINE DRAIN
McCUNE CREEK CHANNEL (U.F.C.)
GIBSON CANYON MEASURING WEIR (U.F.C.)


SCALE: 1" = 400'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
KILKENNY CANAL
ARMMS DRAIN
WEYAND LATERAL 1
WEYAND LAT. 1
ELIZABETH ROAD
NORTH MERIDIAN ROAD
SWEENEY CREEK (U.F.C.) CHANNEL
MINATTA DRAIN
GRIFFIN LANE
MELISSA LANE
LEISURE TOWN ROAD
COGGINS DRAIN
K-1 SPILL
LATERAL K-2
K-2-A
LAT. K-2
LAT. K-2-B
LAT. K-2-B-1
LAT. K-2-B-1 EXT.
LAT. K-2-0
LAT. 3-B
LAT. 3-B-B
LAT. 3-B-A
P63
P53
YOLO DRAIN
LAT K-2-1
LAT. K-2-2
LAT. K-2-3
LAT. K-2-E
LAT. K-2-C
LAT. K-2-C-1
LAT. K-2-C-A
LAT. K-2-D
DeMELLO LANE
GENTILE LANE
MIDWAY ROAD
NO. 3 CANAL
P62 A&B
WINDING WAY
LAT. 3-4
LAT. 3-5
LAT. 3-2
SHELLHAMMER DRAIN
SPILL
3-4 SPILL
STOCKING LATERAL
STOCKING WELL DW39
STOCKING DRAIN
LAT. K-5
VA POTABLE PIPELINE
LEWIS ROAD
NUNES ROAD
BERNADO DRAIN
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT III
KILKENNY PIPELINE AREA
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-1, Supp-A


SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
DIXON / SOLANO MUNICIPAL WATER SERVICE
AND PROXIMITY
Date: 1-23-09
Drawn By: JS
Checked By: JTPFUD
CAD File: MAL MWS.dwg
Dwg No. M-1, SUP-D
LEGEND
SCALE: 1" = 400'
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
DRAIN OR NON-SID DRAIN
SID DRAIN OR SPILL
PIPELINE CONTROL STRUCTURE
CANAL CHECK AND DROP STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
FLOAT VALVE
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
M & I UN-METERED SERVICE
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
LATERAL 5
LATERAL 5-F
LATERAL 9
LATERAL 8
LATERAL A
LATERAL B
LATERAL B-2
LATERAL B-2A
LATERAL B-2C
LATERAL B-5
LAT. B-5
LAT. B-5-A
LAT. B-5-1
LAT. B-X
LAT. B
LAT. B-1
LAT. B-A
LAT. 5-6
LAT. 5-2B
LAT. 5-2B-A
LAT. 9-B
LAT. 9-A
VAUGHN PIPELINE
DIXON AVENUE WEST
SOLANO HIGHWAY
SCHOOLHOUSE ROAD
PITT SCHOOL ROAD
DETAIL A
EMERGENCY INTERCONNECTION OF DIXON AND CITY OF VACAVILLE WATER SYSTEMS
AT NORTH PORT STREET
DETAIL B
EMERGENCY INTERCONNECTION OF DIXON AND NORTH SYSTEMS
AT RUSHMAN DRIVE
INTERCONNECTION DETAIL
NO SCALE
JACOBS DRIVE
RUSHMAN DR.
INTERCONNECTION
CAL WATER
DIXON
STRATFORD AVE.
RUSHMAN WAY
PROPOSED INTERCONNECTION
CITY OF VACAVILLE
DIXON
CAL WATER
INTERCONNECTION
STRATFORD AVE.
PROPOSED INTERCONNECTION
CAL WATER
DIXON
CITY OF VACAVILLE
WATER TO BE JOINTLY MAINTAINED BY DIXON PARKS
CITY TO OWN, OPERATE & MAINTAIN
DIXON TO OWN, OPERATE AND MAINTAIN
DIXON TO OWN, OPERATE AND MAINTAIN
DIXON
CITY OF VACAVILLE
Water Meter Installation Details are for general information only. Check manufacturers Check Valves and Strainers for sizes and locations.


PUTAH CREEK
STATE HIGHWAY 128
DEEPWELL
DW 47
EL. 140'
QUAIL CANYON
LAT. A
VICKERY LN.
RIDGE
PINES
DIGGER
80,000 GALLON
STORAGE TANK
EL. 520' BASE
LATERAL 1
QUAIL CANYON LATERAL
PUTAH CREEK ROAD
PLEASANTS VALLEY ROAD
N
SCALE: 1" = 500'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PW 1
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
M & I UN-METERED SERVICE
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
QUAIL CANYON
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-1, Supp-E

NORTH VILLAGE PUMPING PLANT

#4 PIPELINE

#4 PIPELINE

LATERAL 4-A CANAL

LAT. 4-A-1

LAT. 4-A-1-A

LAT. 4-A-1-1

LAT. 4-A-1-1-A

LAT. 4-A-1

ELLSWORTH RD.

LEISURE TOWN ROAD

CROCKER DRIVE

INTERSTATE 505

NORTH VILLAGE PARKWAY

STRATTON RANCH ROAD

CRESCENT DRIVE

PARKSIDE DRIVE

VACA VALLEY PARKWAY

AKERLY DRIVE

QUINN RD.

LATERAL 4-C CANAL

#1

LAT.

WARREN

NEW HORIZON WAY

AKERLY DRIVE

JOHNSON DRAIN

15

#7

GRASSLAND DRIVE

WALNUT ROAD

JOHNSON

ORANGE DRIVE

LAT. 4-2-0

LAT. 4-2

SPILL

LAT. 4-2-A

LAT. 4-2-A

HORSE CREEK DRIVE

INTERSTATE 80

ORANGE DRIVE

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- PIPELINE
- CANAL
- SID DRAIN OR SPILL
- CREEKS OR NON-SID DRAIN
- CHECK AND DROP STRUCTURE
- CONTROL STRUCTURE
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE
- FLOAT VALVE
- METER
- SECTIONALIZING VALVE
- FIRE HYDRANT
- M & I SERVICE
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

N

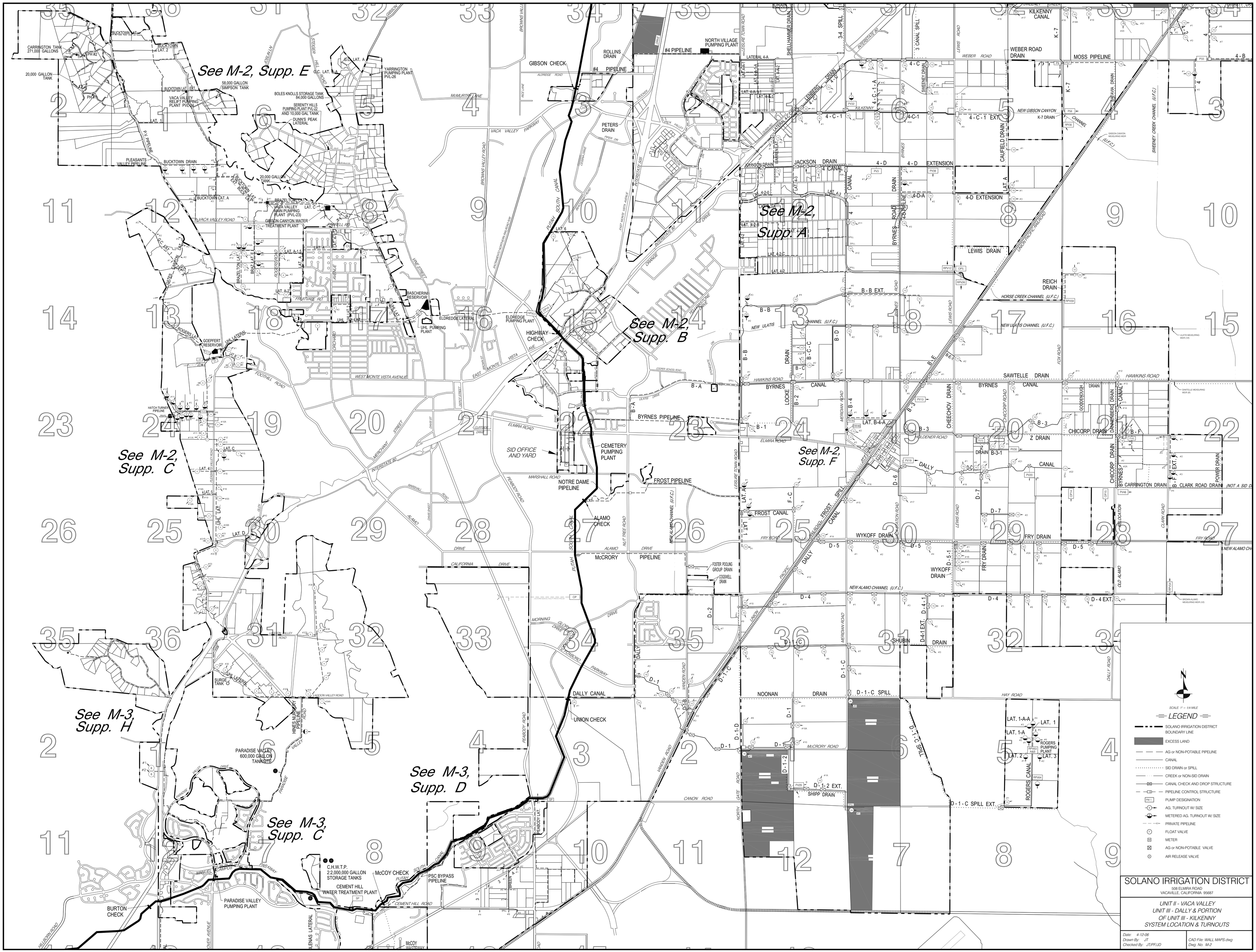
SCALE: 1" = 200'

SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT III
NORTH VILLAGE PIPELINE AREA
SYSTEM LOCATIONS AND TURNOUTS

Date: 4-14-05
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-1, Supp-F


See M-2, Supp. E
See M-2, Supp. A
See M-2, Supp. B
See M-2, Supp. C
See M-2, Supp. F
See M-3, Supp. H
See M-3, Supp. D
See M-3, Supp. C
CARRINGTON TANK 271,000 GALLONS
20,000 GALLON TANK
58,000 GALLON SIMPSON TANK
VACA VALLEY RELIFT PUMPING PLANT PVL-24
BOLES KNOLLS STORAGE TANK 84,000 GALLONS
SERENITY HILLS PUMPING PLANT PVL-22 AND 10,000 GAL TANK
DUNN'S PEAK LATERAL
YARRINGTON PUMPING PLANT PVL-26
PLEASANTS VALLEY PIPELINE
BUCKTOWN DRAIN
BUCKTOWN LAT. A
BRAZELTON LAT. C
VACA VALLEY MAIN PUMPING PLANT (PVL-23)
GIBSON CANYON WATER TREATMENT PLANT
BASCHERINI RESERVOIR
UHL PUMPING PLANT
ELDREDGE LATERAL
ELDREDGE PUMPING PLANT
GOEPPERT RESERVOIR
HATCH TURNER PIPELINE
HIGHWAY CHECK
SID OFFICE AND YARD
CEMETERY PUMPING PLANT
NOTRE DAME PIPELINE
ALAMO CHECK
McCRORY PIPELINE
FROST PIPELINE
BYRNES PIPELINE
DALLY CANAL
UNION CHECK
PARADISE VALLEY 600,000 GALLON TANKSITE
HINES NURSERY PIPELINE
SURGE TANK
C.H.W.T.P. 2:2,000,000 GALLON STORAGE TANKS
CEMENT HILL WATER TREATMENT PLANT
McCOY CHECK
PSC BYPASS PIPELINE
PARADISE VALLEY PUMPING PLANT
BURTON CHECK
McCOY WASTEWAY
GIBSON CHECK
ROLLINS DRAIN
#4 PIPELINE
NORTH VILLAGE PUMPING PLANT
PETERS DRAIN
JACKSON DRAIN
4 CANAL
4-D EXTENSION
LEWIS DRAIN
REICH DRAIN
SAWTELLE DRAIN
BYRNES CANAL
CHICORP DRAIN
Z DRAIN
CARRINGTON DRAIN
CLARK ROAD DRAIN
WYKOFF DRAIN
FRY DRAIN
SHUBIN DRAIN
NOONAN DRAIN
D-1-C SPILL
D-1-2 EXT.
SHIPP DRAIN
D-1-C SPILL EXT.
ROGERS CANAL
ROGERS PUMPING PLANT
KILKENNY CANAL
WEBER ROAD DRAIN
MOSS PIPELINE
CAUFIELD DRAIN
SWEENEY CREEK CHANNEL (U.F.C.)
HORSE CREEK CHANNEL (U.F.C.)
NEW ULATIS CHANNEL (U.F.C.)
NEW ALAMO CHANNEL (U.F.C.)
SCALE: 1" = 1/4 MILE
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II - VACA VALLEY
UNIT III - DALLY & PORTION
OF UNIT III - KILKENNY
SYSTEM LOCATION & TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2

NORTH VILLAGE PUMPING PLANT
#4 PIPELINE
#4 PIPELINE
LATERAL 4-A CANAL
SHELLHAMMER DRAIN
SPILL
LAT. 4-A-1
LAT. 4-A-1-A
LAT. 4-A-2
LAT.
MILLS LN.
LAT. 4-A-1-1
LAT. 4-A-1-CA
LAT. 4-A-1
ELLSWORTH RD.
NEW
LENBERG DRAIN
LATERAL 4-C
KILKENNY ROAD
PV32
LAT 4-C-1
LATERAL 4-C-1
QUINN RD.
LATERAL 4-C CANAL
WILLOW ROAD
LAT.
WARREN
JOHNSON DRAIN
NO. 4 CANAL
JACKSON DRAIN
SPILL
DRAIN
4-3
WALNUT ROAD
JOHNSON
LAT.
ORANGE DRIVE
LAT. 4-2-0
HORSE CREEK CHANNEL (U.F.C.)
LAT. 4-3-A
LAT. 4-3
LAT. 4-3
JACKSON DRAIN
NO. 4 CANAL
LAT. 4-2
SPILL
LAT. 4-2-A
LAT. 4-2-A
LAT. 4-2-B
POPLAR ROAD
LAT. 4-2-B
LAT. 4-2-B-A
LAT. 4-2-B
HORSE CREEK CHANNEL (U.F.C.)
NO. 4 CANAL
SPILL
SPILL
LAT. 4-2
LAT. 4-2
LAT. 4-2-C
WILLOW ROAD
MAPLE ROAD
LAT. 4-2
LAT. 4-2
SPILL
SPILL
LATERAL B-B
CROCKER DRIVE
INTERSTATE 505
NORTH VILLAGE PARKWAY
STRATTON RANCH ROAD
CRESCENT DRIVE
PARKSIDE DRIVE
VACA VALLEY PARKWAY
AKERLY DRIVE
NEW HORIZON WAY
AKERLY DRIVE
GRASSLAND DRIVE
HORSE CREEK DRIVE
ORANGE DRIVE
LEISURE TOWN ROAD
SEQUOIA DRIVE
YELLOWSTONE DRIVE

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- EXCESS LAND
- AG or NON-POTABLE PIPELINE
- CANAL
- SID DRAIN OR SPILL
- CREEKS or NON-SID DRAIN
- CANAL CHECK AND DROP STRUCTURE
- PIPELINE CONTROL STRUCTURE
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE
- FLOAT VALVE
- METER
- AG or NON-POTABLE VALVE
- FIRE HYDRANT
- M & I SERVICE
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

N

SCALE: 1" = 300'

SOLANO IRRIGATION DISTRICT

508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT III

KILKENNY PIPELINE AREA

SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-A

LATERAL 6
15 #1
12 #2
12 #3
12 #4
OPV5
HPVL5
ELDREDGE PUMPING PLANT
HIGHWAY CHECK
ORANGE DR.
NUT TREE PARKWAY
HELEN POWER DR.
NUT TREE ROAD
YELLOWSTONE DR.
E. MONTE VISTA AVE.
INTERSTATE 80
HARBISON DR.
BURTON DR.
ALLISON DRIVE
ULATIS DRIVE
HPVL2
NUT TREE ROAD
BYRNES LATERAL B-A
BYRNES PIPELINE
AGEAN WAY
CITY OF VACAVILLE PIPELINE
ELMIRA ROAD
CEMETERY PUMPING PLANT
HPVL14
MARSHALL ROAD
NOTRE DAME PIPELINE
FROST PIPELINE
ALAMO CHECK

N

SCALE: 1" = 400'

LEGEND

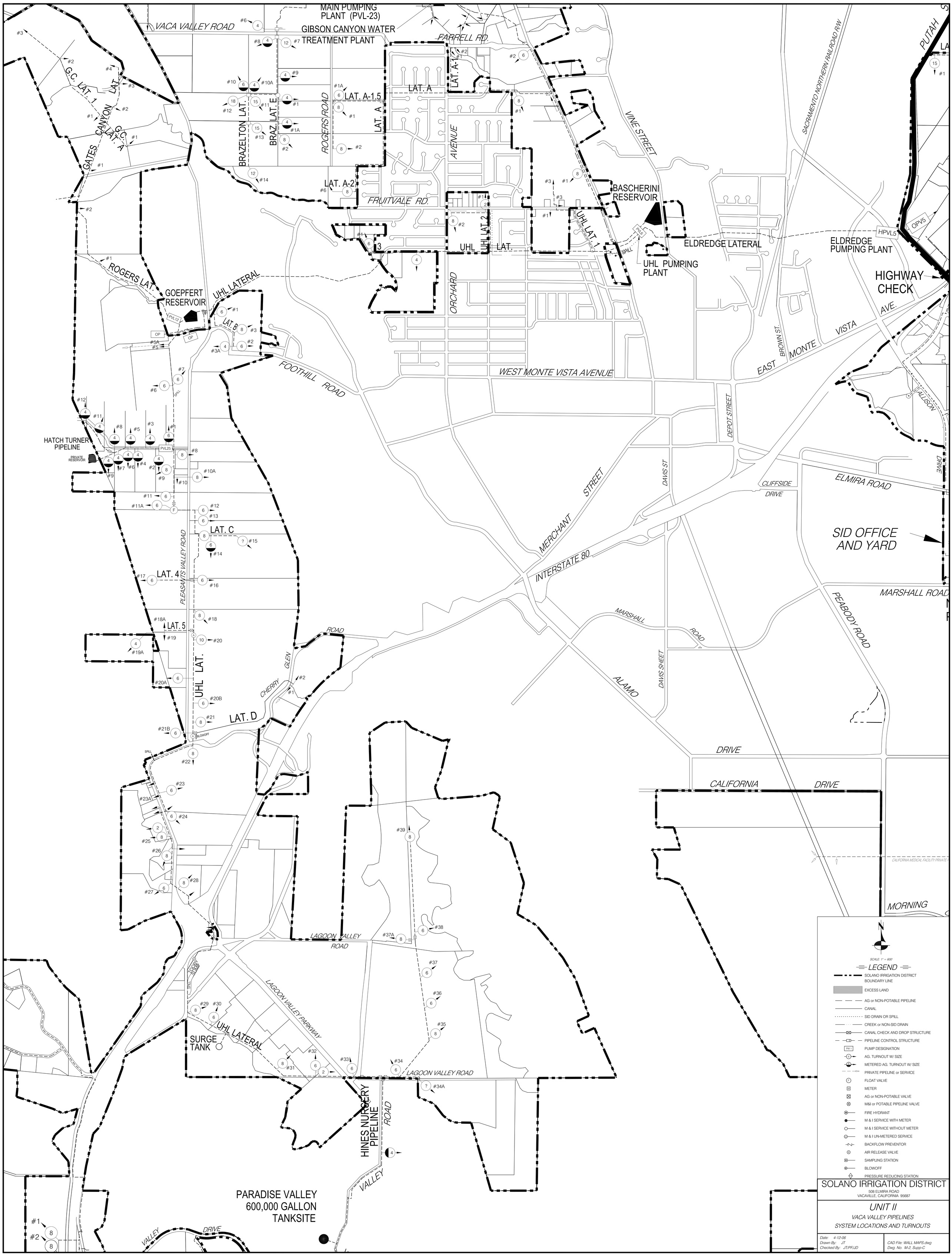
- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- AG. TURNOUT
- PRIVATE PIPELINE or SERVICE
- METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

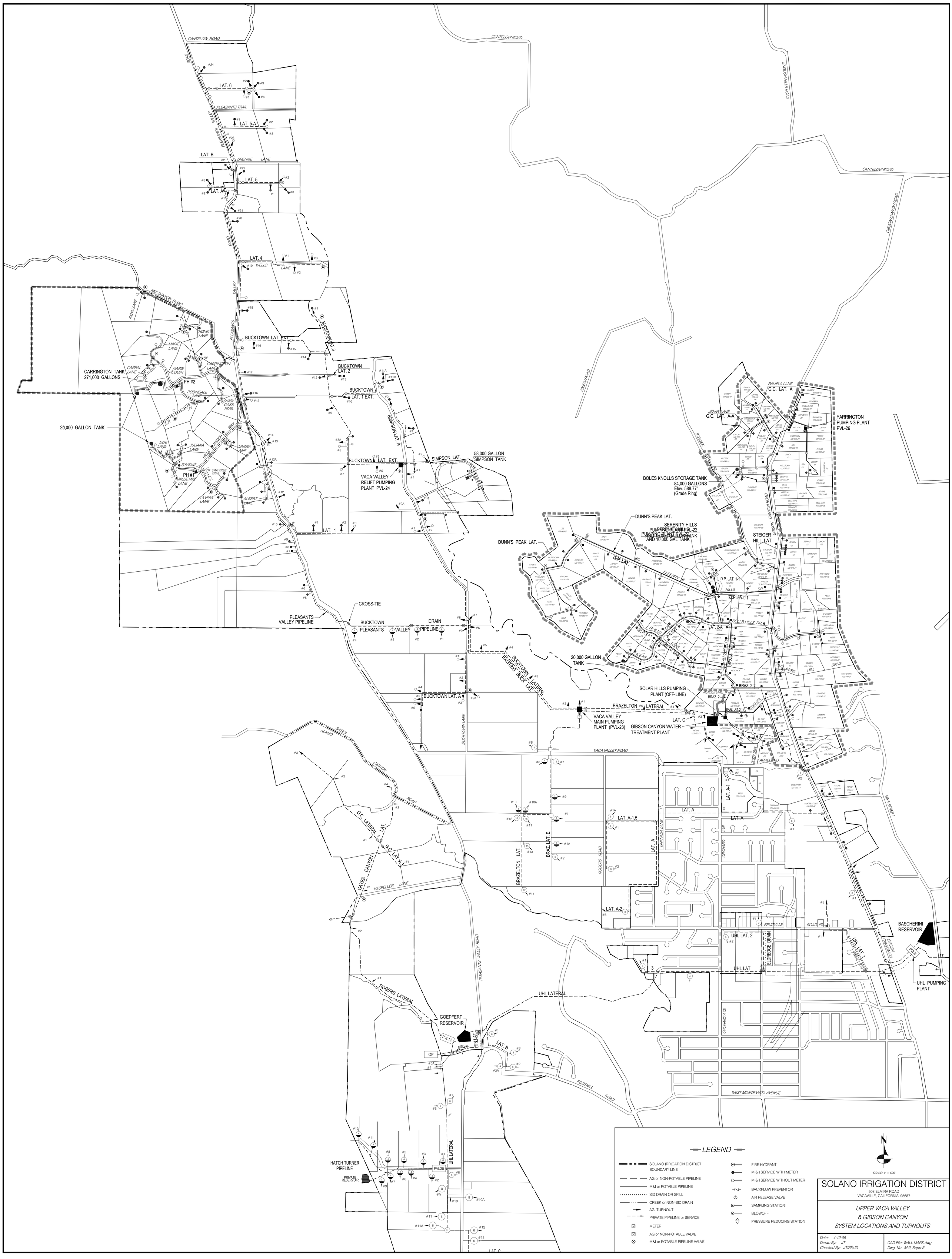
SOLANO IRRIGATION DISTRICT

508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

ALLISON / ULATIS
PIPELINE
SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06	CAD File: WALL MAPS.dwg
Drawn By: JT	Dwg. No. M-2, Supp-B
Checked By: JT/PF/JD	


MAIN PUMPING PLANT (PVL-23)
GIBSON CANYON WATER TREATMENT PLANT
VACA VALLEY ROAD
FARRELL RD.
PUTAH
G.C. LAT. 1
GATES CANYON LAT.
G.C. LAT. A
BRAZELTON LAT.
BRAZ. LAT. E
ROGERS ROAD
LAT. A-1.5
LAT. A
LAT. A-1
LAT. A-2
FRUITVALE RD.
AVENUE
VINE STREET
SACRAMENTO NORTHERN RAILROAD R/W
BASCHERINI RESERVOIR
UHL LAT. 2
UHL LAT. 1
UHL LAT.
ELDREDGE LATERAL
ELDREDGE PUMPING PLANT
UHL PUMPING PLANT
HPVL5
OPV5
HIGHWAY CHECK
ROGERS LAT.
GOEPFERT RESERVOIR
UHL LATERAL
LAT. B
ORCHARD
FOOTHILL ROAD
WEST MONTE VISTA AVENUE
EAST MONTE VISTA AVE.
BROWN ST.
ALLISON DRIVE
DEPOT STREET
HATCH TURNER PIPELINE
PRIVATE RESERVOIR
LAT. C
PLEASANTS VALLEY ROAD
LAT. 4
LAT. 5
UHL LAT.
GLEN ROAD
CHERRY
LAT. D
MERCHANT STREET
DAVIS ST
CLIFFSIDE DRIVE
ELMIRA ROAD
SID OFFICE AND YARD
INTERSTATE 80
MARSHALL ROAD
PEABODY ROAD
ALAMO
DAVIS SHEET
DRIVE
CALIFORNIA DRIVE
MORNING
LAGOON VALLEY ROAD
LAGOON VALLEY PARKWAY
SURGE TANK
HINES NURSERY PIPELINE
VALLEY ROAD
PARADISE VALLEY 600,000 GALLON TANKSITE
VALLEY DRIVE
SCALE: 1" = 600'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
M & I UN-METERED SERVICE
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
VACA VALLEY PIPELINES
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-C


CANTELOW ROAD
ENGLISH HILLS ROAD
GIBSON CANYON ROAD
LAT. 6
PLEASANTS TRAIL
LAT. 5-A
LAT. B
BREHME LANE
LAT. 5
LAT. A
LAT. 4
WELLS LANE
PLEASANTS VALLEY ROAD
BUCKTOWN LAT. EXT.
BUCKTOWN LAT. 3
BUCKTOWN LAT. 2
BUCKTOWN LAT. 1 EXT.
SIMPSON LAT. A
SIMPSON LAT.
58,000 GALLON SIMPSON TANK
VACA VALLEY RELIFT PUMPING PLANT PVL-24
CARRINGTON TANK 271,000 GALLONS
20,000 GALLON TANK
PH #2
PH #1
MIX CANYON ROAD
PAWN LANE
HONEY LANE
MARIE LANE
CARRAL LANE
MARIE COURT
CARRINGTON LANE
ROBINDALE LANE
SHADY OAKS TRAIL
DOE LANE
JULIANA LANE
CZARINA LANE
PLEASANT HILLS
OAK TREE TRAIL
MILLIE MAE LANE
LA VERA LANE
ALBERT LANE
LAT. 1
CROSS-TIE
PLEASANTS VALLEY PIPELINE
BUCKTOWN PLEASANTS VALLEY DRAIN PIPELINE
BUCKTOWN LATERAL
EXISTING BUCK LAT.
BUCKTOWN LAT. A
BUCKTOWN LANE
JOSLIN ROAD
STEIGER HILL RD.
PAMELA LANE
G.C. LAT. A
JENNY LANE
G.C. LAT. A-A
YARRINGTON PUMPING PLANT PVL-26
BOLES KNOLLS STORAGE TANK 84,000 GALLONS Elev. 588.77' (Grade Ring)
DUNN'S PEAK LAT.
SERENITY HILLS PUMPING PLANT PVL-22
STEIGER HILL LAT.
D.P. LAT.
SERENITY HILLS DR.
D.P. LAT. 1-1
D.P. LAT. 1
SOLAR HILLS DR.
LAT. 2-A
LAT. 2-B
LAT. A-1
LAT. 2-2
BRAZ. 2-2
BRAZ. 2-1
MENDES LANE
SOLAR HILLS PUMPING PLANT (OFF-LINE)
20,000 GALLON TANK
BRAZELTON LATERAL
VACA VALLEY MAIN PUMPING PLANT (PVL-23)
GIBSON CANYON WATER TREATMENT PLANT
LAT. C
LAT. B
FARRELL RD.
VACA VALLEY ROAD
GATES CANYON ROAD
ALAMO
G.C. LATERAL 1
G.C. LAT. A
HESPELLER LANE
LAT. A-1.5
LAT. A
GRANADA LANE
ORCHARD AVE.
BRAZELTON LAT.
BRAZ LAT. E
ROGERS ROAD
LAT. A-2
FRUITVALE ROAD
UHL LAT. 2
ELDREDGE DRAIN
UHL LAT.
UHL LAT. 1
PRIVATE DRIVE
BASCHERINI RESERVOIR
PLB
UHL PUMPING PLANT
VINE STREET
PLEASANTS VALLEY ROAD
ROGERS LATERAL
UHL LATERAL
GOEPFERT RESERVOIR
PVL12
OP
LAT. B
FOOTHILL ROAD
WEST MONTE VISTA AVENUE
HATCH TURNER PIPELINE
PRIVATE RESERVOIR
PVL25
LAT. C
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
AG or NON-POTABLE PIPELINE
M&I or POTABLE PIPELINE
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
AG. TURNOUT
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
N
SCALE: 1" = 600'
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UPPER VACA VALLEY
& GIBSON CANYON
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-E

LAT. B-4

#2

15

DW 46
SUPPLY PUMP

60,000 GALLON
STORAGE TANK

BOOSTER PUMP
AND MANIFOLD

PRESSURE
TANK

12

#3

LAT. B-3

HOLDENER ROAD

MERIDIAN ROAD

ELMIRA ROAD

FIRST STREET

HAZEN STREET

VACA ST.

EDWARDS ST. 'A' STREET

EDWARDS STREET

'B' STREET

HAZEN STREET

CALIFORNIA PACIFIC ROAD

UNION PACIFIC RAILROAD

ELMIRA ROAD

VACA STATION ROAD

WATER STREET

Alamo Creek

S.I.D. FROST SPILL

S.I.D. DALLY CANAL

S.I.D. DALLY CANAL

N

SCALE: 1" = 100'

LEGEND

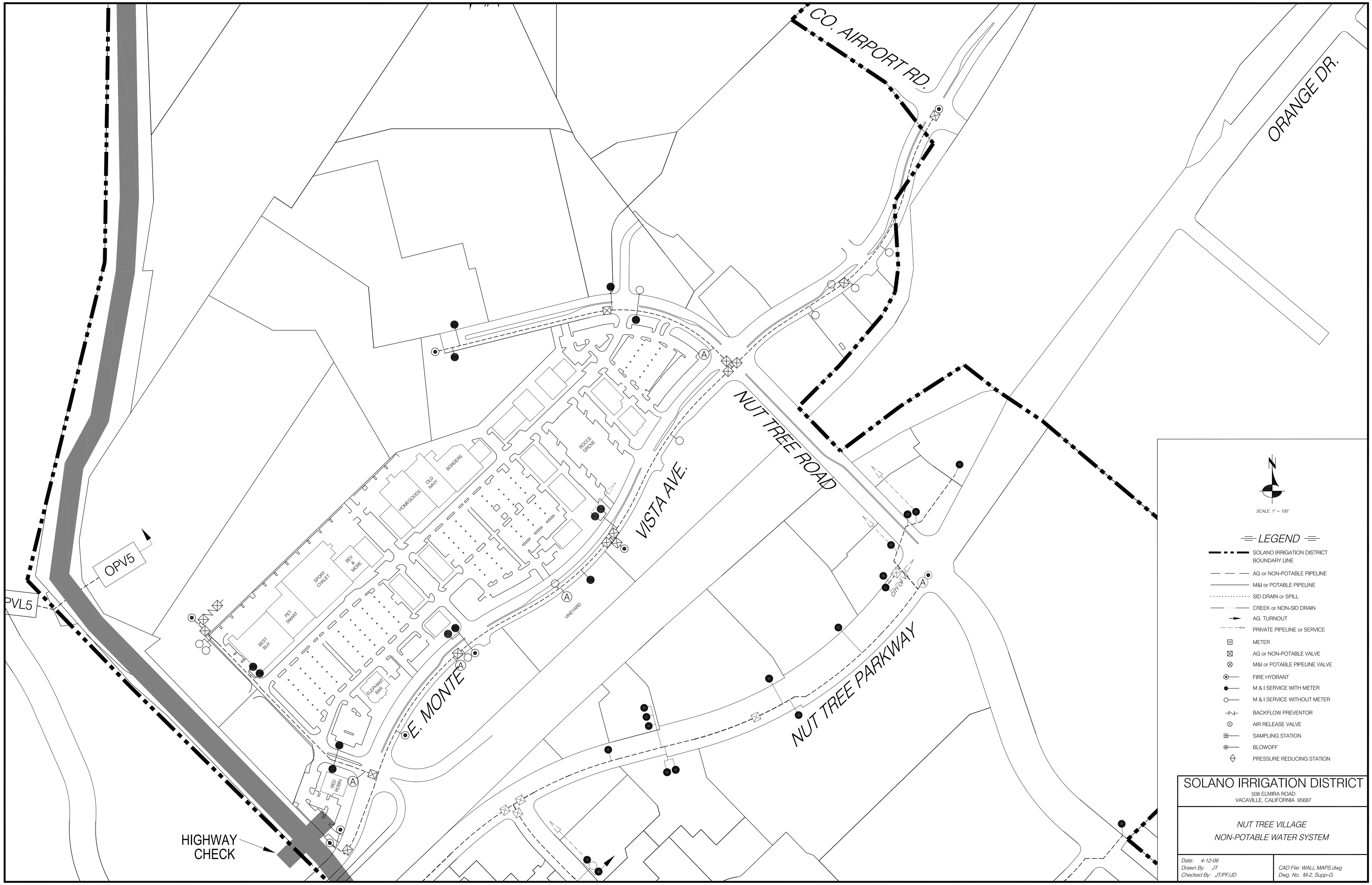
- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN or SPILL
- CREEK or NON-SID DRAIN
- AG. TURNOUT
- PRIVATE PIPELINE or SERVICE
- METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

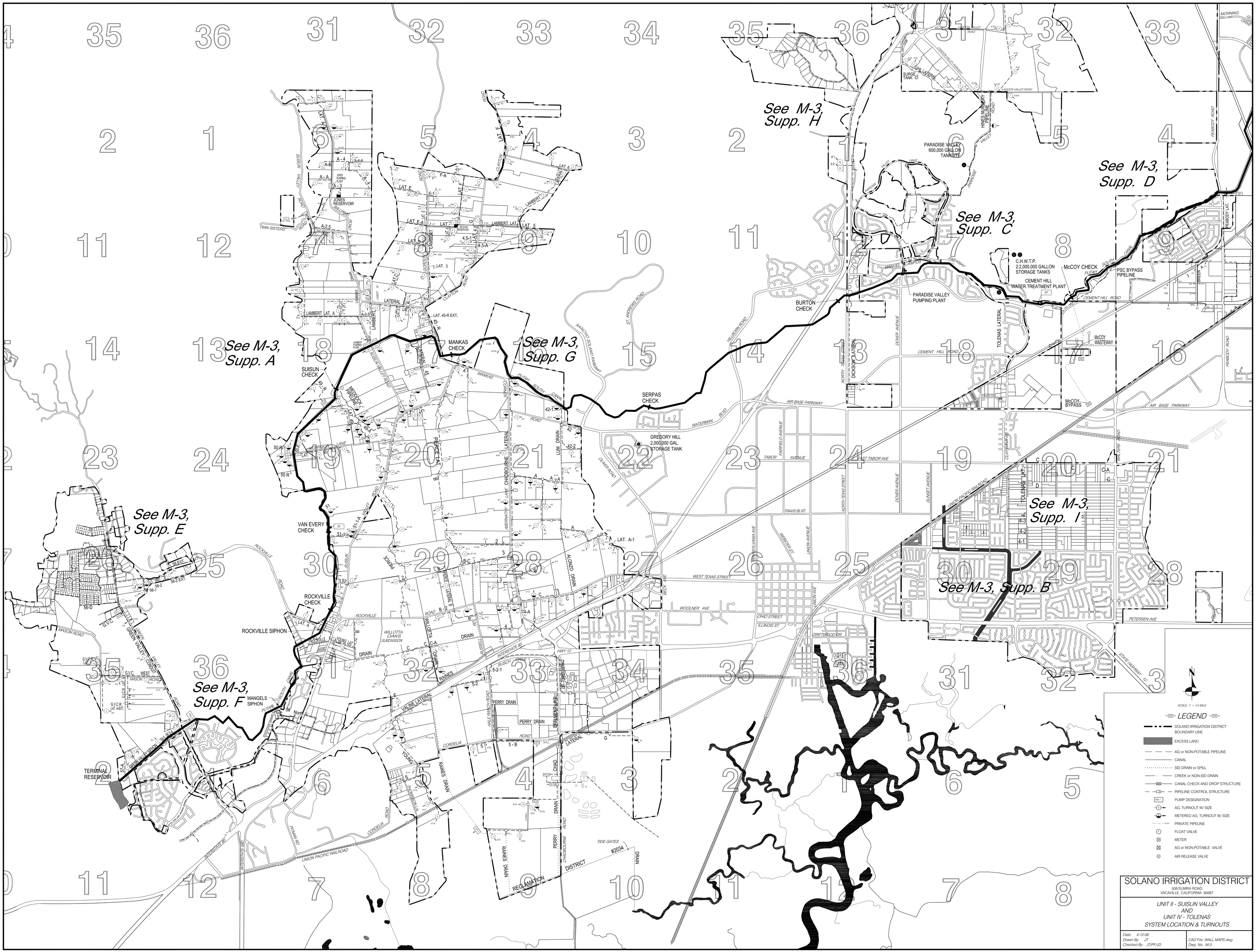
SOLANO IRRIGATION DISTRICT

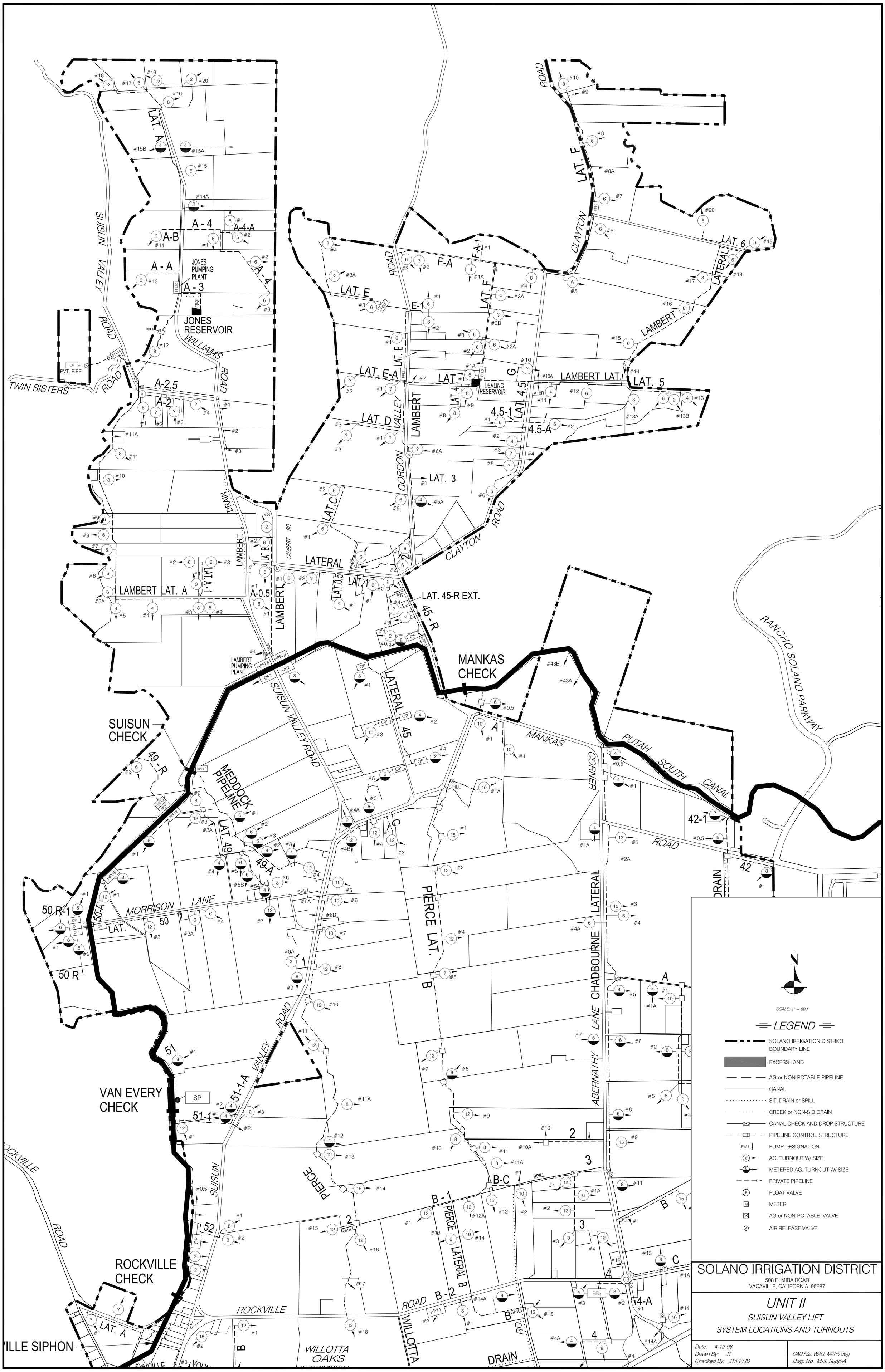
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

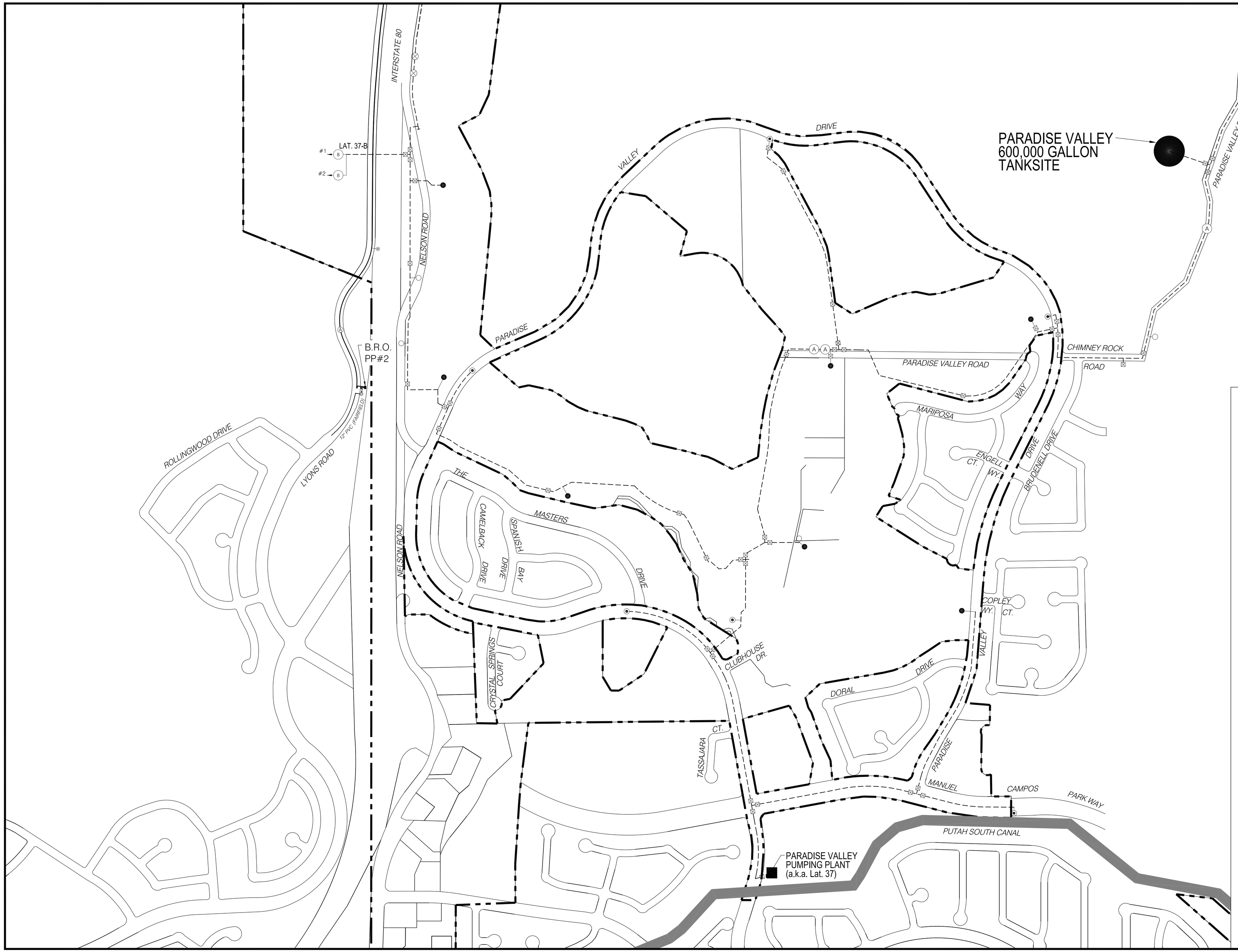
ELMIRA IMPROVEMENT DISTRICT
COMMUNITY WATER SYSTEM

Date: 4-12-06	CAD File: WALL MAPS.dwg
Drawn By: JT	Dwg. No. M-2, Supp-F
Checked By: JT/PF/JD	


CO. AIRPORT RD.
ORANGE DR.
NUT TREE ROAD
VISTA AVE.
NUT TREE PARKWAY
E. MONTE
VINEYARD
CITY OF
OPV5
PVL5
HIGHWAY CHECK
BOCCE GROVE
BORDERS
OLD NAVY
HOMEGOODS
BEV & MORE
SPORT CHALET
PET SMART
BEST BUY
ELEPHANT BAR
RED ROBIN
SCALE: 1" = 150'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
AG or NON-POTABLE PIPELINE
M&I or POTABLE PIPELINE
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
AG. TURNOUT
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
NUT TREE VILLAGE
NON-POTABLE WATER SYSTEM
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-2, Supp-G


See M-3, Supp. A
See M-3, Supp. B
See M-3, Supp. C
See M-3, Supp. D
See M-3, Supp. E
See M-3, Supp. F
See M-3, Supp. G
See M-3, Supp. H
See M-3, Supp. I
SUISUN CHECK
MANKAS CHECK
SERPAS CHECK
BURTON CHECK
VAN EVERY CHECK
ROCKVILLE CHECK
ROCKVILLE SIPHON
MANGELS SIPHON
TERMINAL RESERVOIR
GREGORY HILL 2,000,000 GAL. STORAGE TANK
PARADISE VALLEY 600,000 GALLON TANKSITE
PARADISE VALLEY PUMPING PLANT
C.H.W.T.P. 2;2,000,000 GALLON STORAGE TANKS
CEMENT HILL WATER TREATMENT PLANT
McCOY CHECK
PSC BYPASS PIPELINE
McCOY WASTEWAY
McCOY BYPASS
JONES RESERVOIR
SURGE TANK
TIDE GATES #2034
RECLAMATION DISTRICT
SCALE: 1" = 1/4 MILE
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II - SUISUN VALLEY
AND
UNIT IV - TOLENAS
SYSTEM LOCATION & TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No: M-3


SUISUN VALLEY ROAD
LAT. A
A - 4
A-4-A
A-B
A - A
JONES PUMPING PLANT
A - 3
JONES RESERVOIR
WILLIAMS ROAD
A-2.5
A-2
TWIN SISTERS ROAD
PVT. PIPE.
LAT. E
F-A
F-A-1
LAT. F
CLAYTON ROAD
LAT. 6
LATERAL
LAMBERT
E-1
LAT. E-A
LAT. 4
DEVLING RESERVOIR
G
LAMBERT LAT.
LAT. 5
4.5-1
4.5-A
LAT. D
GORDON VALLEY
LAMBERT
LAT. 3
LAT.C
LAMBERT RD.
LAT.B
LATERAL 2
LAMBERT LAT. A
LAT.A-1
A-0.5
LAT.0.5
LAT. 1
LAT. 45-R EXT.
45 - R
LAMBERT PUMPING PLANT
MANKAS CHECK
RANCHO SOLANO PARKWAY
SUISUN CHECK
49 - R
MEDDOCK PIPELINE
LAT. 49
49-A
45
MANKAS CORNER
PUTAH SOUTH CANAL
42-1
42
DRAIN
MORRISON LANE
LAT. 50
50-A
50 R-1
50 R
PIERCE LAT. B
CHADBOURNE LATERAL
ABERNATHY LANE
51
51-1-A
51-1
VAN EVERY CHECK
SP
PIERCE
SUISUN
52
ROCKVILLE CHECK
ROCKVILLE ROAD
LAT. A
B-1
B-2
B-C
PIERCE LATERAL B
WILLOTTA OAKS
WILLOTTA RD.
DRAIN
4-A
PF5
PF11
SCALE: 1" = 800'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
AG or NON-POTABLE PIPELINE
CANAL
SID DRAIN or SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
AIR RELEASE VALVE
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
SUISUN VALLEY LIFT
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-A



SCALE: 1" = 300'

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- EXCESS LAND
- AG or NON-POTABLE PIPELINE
- CANAL
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- CANAL CHECK AND DROP STRUCTURE
- PIPELINE CONTROL STRUCTURE
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- PRIVATE PIPELINE or SERVICE
- FLOAT VALVE
- METER
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M & I SERVICE WITH METER
- M & I SERVICE WITHOUT METER
- M & I UN-METERED SERVICE
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

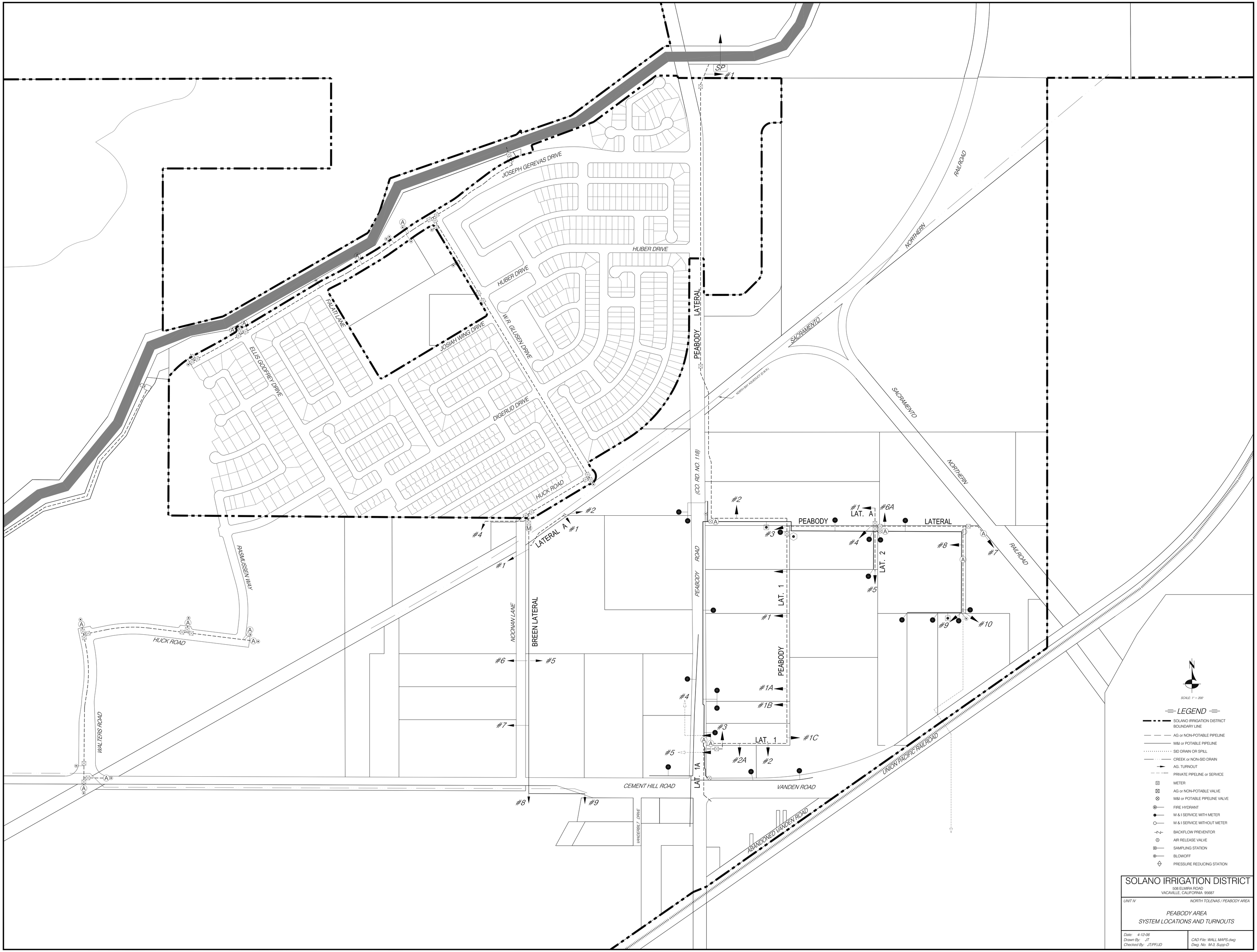
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT II — VACA VALLEY / LATERAL 37

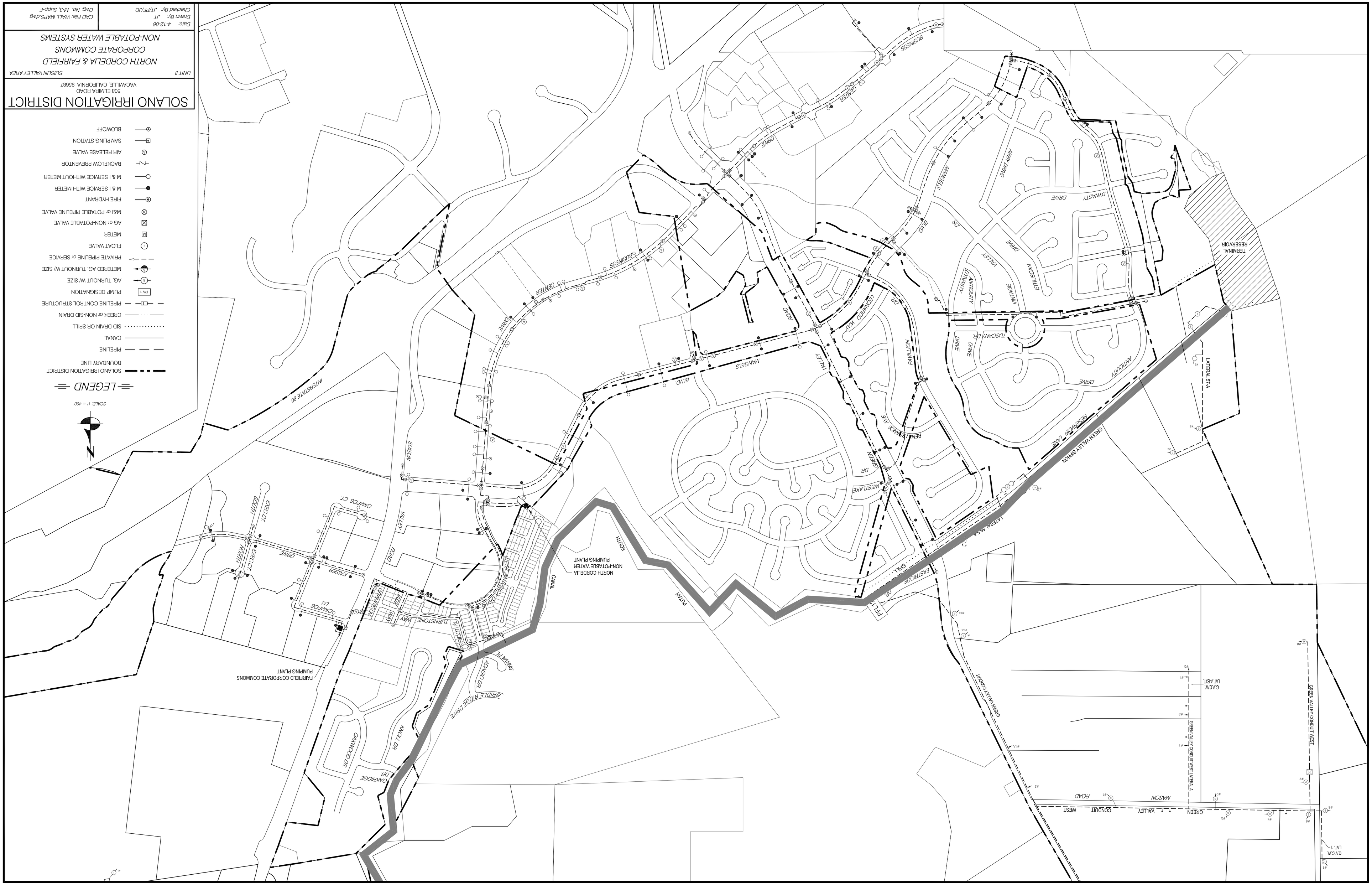
PARADISE VALLEY
SYSTEM LOCATIONS AND TURNOUTS

Date: 11-24-08
Drawn By: JS
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-C


SP
#1
JOSEPH GEREVAS DRIVE
HUBER DRIVE
HUBER DRIVE
W.R. GLUSEN DRIVE
JOSIAH WING DRIVE
FALATTI LANE
ELLIS GODFREY DRIVE
DIGERUD DRIVE
HUCK ROAD
RASMUSSEN WAY
HUCK ROAD
WALTERS ROAD
NOONAN LANE
BREEN LATERAL
LATERAL A
PEABODY LATERAL
(CO. RD. NO. 118)
PEABODY ROAD
NORTHERN RAILROAD
SACRAMENTO
SACRAMENTO
NORTHERN RAILROAD
PEABODY LATERAL
LAT. A
LAT. 2
LAT. 1
PEABODY
LAT. 1
LAT. 1A
CEMENT HILL ROAD
VANDEN ROAD
VANDERBILT DRIVE
ABANDONED VANDEN ROAD
UNION PACIFIC RAILROAD
SCALE: 1" = 200'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
AG or NON-POTABLE PIPELINE
M&I or POTABLE PIPELINE
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
AG. TURNOUT
PRIVATE PIPELINE or SERVICE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT IV
NORTH TOLENAS / PEABODY AREA
PEABODY AREA
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-D

LAT. 56-F-H
LAT. 56-F-3
LAT. 56-F-EXT.
GREEN VALLEY ROAD
LAT. 56-F-2
LAT. 56-F-D
LAT. 56-F-EXT.
COUNTRY CLUB DRIVE
LAT. 56-F-C
LAT. 56-F-EXT.
PRIVATE ROAD
RESERVOIR
LATERAL
GREEN VALLEY RESERVOIR
GREEN VALLEY
LAT. 56-F-B-1
VALLEJO - SID CROSSTIE
LAT. 56-F-B
LAT. 56-F-B
LAT. 56-D EXT.
LAT. 56-F-A5
ROCKVILLE ROAD
CEREDA LANE
KINGS LN.
LAT. 56-F-A
GREEN VALLEY PUMPING PLANT (PFL 15)
EMERALD RIDGE LANE
DYNASTY LANE
LATERAL 56 EXT.
AMARAL COURT
LATERAL
CERRADA CIELO
CERRADA AZUL
PASEO ARBOLES
LAT. 56-D EXT.
G.V.M. LATERAL 5
G.V.O. LATERAL 15
GREEN ACRES
LAT. 56-G-1
LAT. 56-G-1-1
LAT. 56-G
LATERAL 56-F
LATERAL 56-2 EXT.
LATERAL 56
LAT. 56-D-A
G.V.M. LATERAL 5
CALLE DEL CABALLO
WALNUT COURT
G.V.O. LAT. 14
G.V.O. LATERAL 15
LATERAL 56-E
VIA PAJARO
VIA VACQUERO
LAT. 4-1
LAT. 4-A
LAT. 4-2
LAT. 4
CAVALIER COURT
G.V.M. LATERAL 12
VIA PALO LINDA
G.V.O. LAT. 16
BALESTRA TURNOUT
LATERAL 56-D-A
G.V.R.E. PUMP STATION NO. 1 PFL -16
PEACH COURT
CHERRY COURT
LATERAL 56-D
LATERAL 56-D
BLOWOFF
735 GAL. TANK
SIEBE DRIVE
LAT. 56-D-A-A
G.V.R.E. PUMP STATION NO. 2 PFL-17
JENI LANE
DE LEU DRIVE
CEREDA PUMPING PLANT - PFL 11
G.V.C.C. PUMPING PLANT - PFL 20
SCALE: 1" = 200'
LEGEND
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
EXCESS LAND
PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
CANAL CHECK AND DROP STRUCTURE
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
PRESSURE REDUCING STATION
SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
SUISUN VALLEY LIFT
GREEN VALLEY
SYSTEM LOCATIONS AND TURNOUTS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-E


SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687
UNIT II
SUISUN VALLEY AREA
NORTH CORDELIA & FAIRFIELD
CORPORATE COMMONS
NON-POTABLE WATER SYSTEMS
Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD
CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-F
LEGEND
SCALE: 1" = 400'
SOLANO IRRIGATION DISTRICT BOUNDARY LINE
PIPELINE
CANAL
SID DRAIN OR SPILL
CREEK or NON-SID DRAIN
PIPELINE CONTROL STRUCTURE
PUMP DESIGNATION
AG. TURNOUT W/ SIZE
METERED AG. TURNOUT W/ SIZE
PRIVATE PIPELINE or SERVICE
FLOAT VALVE
METER
AG or NON-POTABLE VALVE
M&I or POTABLE PIPELINE VALVE
FIRE HYDRANT
M & I SERVICE WITH METER
M & I SERVICE WITHOUT METER
BACKFLOW PREVENTOR
AIR RELEASE VALVE
SAMPLING STATION
BLOWOFF
INTERSTATE 80
SUISUN VALLEY ROAD
CENTER DRIVE
BUSINESS
MANGELS BLVD.
LEONARDO WAY
PAVILLION DR
ANTIQUITY DRIVE
TUSCANY DR.
DYNASTY DRIVE
ETRUSCAN DRIVE
ABBY DRIVE
RENAISSANCE AVE.
WESTLAKE DR.
EASTRIDGE DR.
GREEN VALLEY SIPHON
RESERVOIR LANE
TERMINAL RESERVOIR
LATERAL 57-A
LATERAL 56-A
SOUTH PUTAH CANAL
NORTH CORDELIA NON-POTABLE WATER PUMPING PLANT
FAIRFIELD CORPORATE COMMONS PUMPING PLANT
WESTAMERICA DRIVE
TURNSTONE WAY
JADE WAY
GRANITE LN
PERIDOT PL
BRAVA PL
ADAGIO DR
BRIDLE RIDGE DRIVE
KNOLL DR
OAKWOOD DR
OAKRIDGE DR
CAMPOS CT.
CAMPOS LN
KAISER DRIVE
EXEC CT.
NORTH
SOUTH
GREEN VALLEY CONDUIT
GREEN VALLEY CONDUIT WEST
GREEN VALLEY CONDUIT WEST LATERAL A
GREEN VALLEY CONDUIT WEST
MASON ROAD
G.V.C.W. LAT. A-EXT.
G.V.C.W. LAT. 1

45,000 GALLON
WATER STORAGE TANK

BLUE MOUNTAIN DRIVE

HIDDEN VALLEY LANE

LYONS ROAD

BLUE RIDGE OAKS
P.P. No. 1
(PFL 19)

LATERAL 37 EXT.

SODA SPRINGS ROAD

INTERSTATE 80

LAT. 37-B

#1

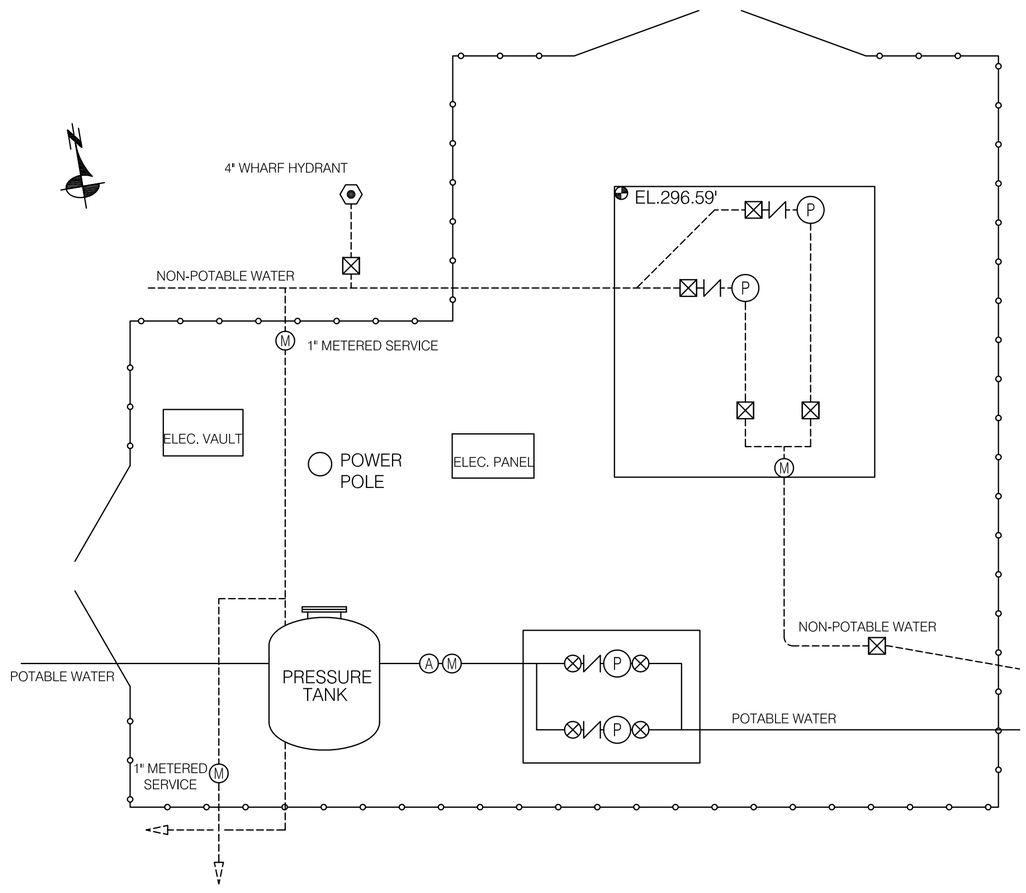
#2

B.R.O.
PP#2

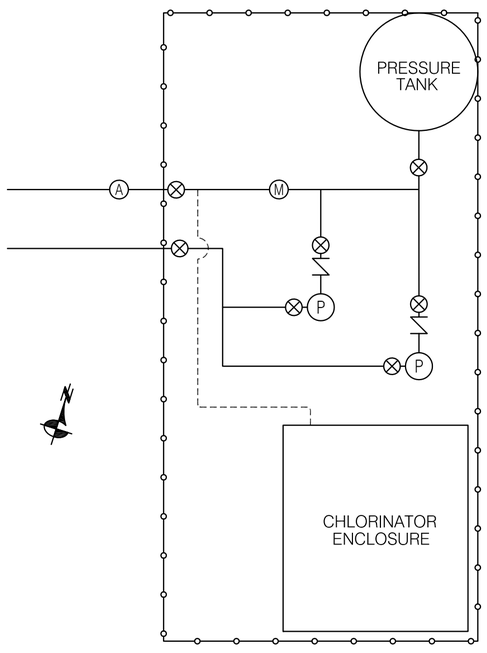
12" PVC (FAIRFIELD)

ROLLINGWOOD DRIVE

LYONS ROAD



BLUE RIDGE OAKS PUMPING PLANT No. 1
(NOT TO SCALE)



BLUE RIDGE OAKS PUMPING PLANT No. 2
(NOT TO SCALE)

LEGEND

- SOLANO IRRIGATION DISTRICT BOUNDARY LINE
- AG or NON-POTABLE PIPELINE
- M&I or POTABLE PIPELINE
- SID DRAIN OR SPILL
- CREEK or NON-SID DRAIN
- PW 1 PUMP DESIGNATION
- AG. TURNOUT W/ SIZE
- METERED AG. TURNOUT W/ SIZE
- NON-POTABLE SERVICE WITH METER
- NON-POTABLE SERVICE WITHOUT METER
- PRIVATE PIPELINE
- FLOAT VALVE
- AG or NON-POTABLE VALVE
- M&I or POTABLE PIPELINE VALVE
- FIRE HYDRANT
- M&I or POTABLE SERVICE WITH METER
- M&I or POTABLE SERVICE WITHOUT METER
- BACKFLOW PREVENTOR
- AIR RELEASE VALVE
- SAMPLING STATION
- BLOWOFF
- PRESSURE REDUCING STATION

SCALE: 1" = 300'

SOLANO IRRIGATION DISTRICT

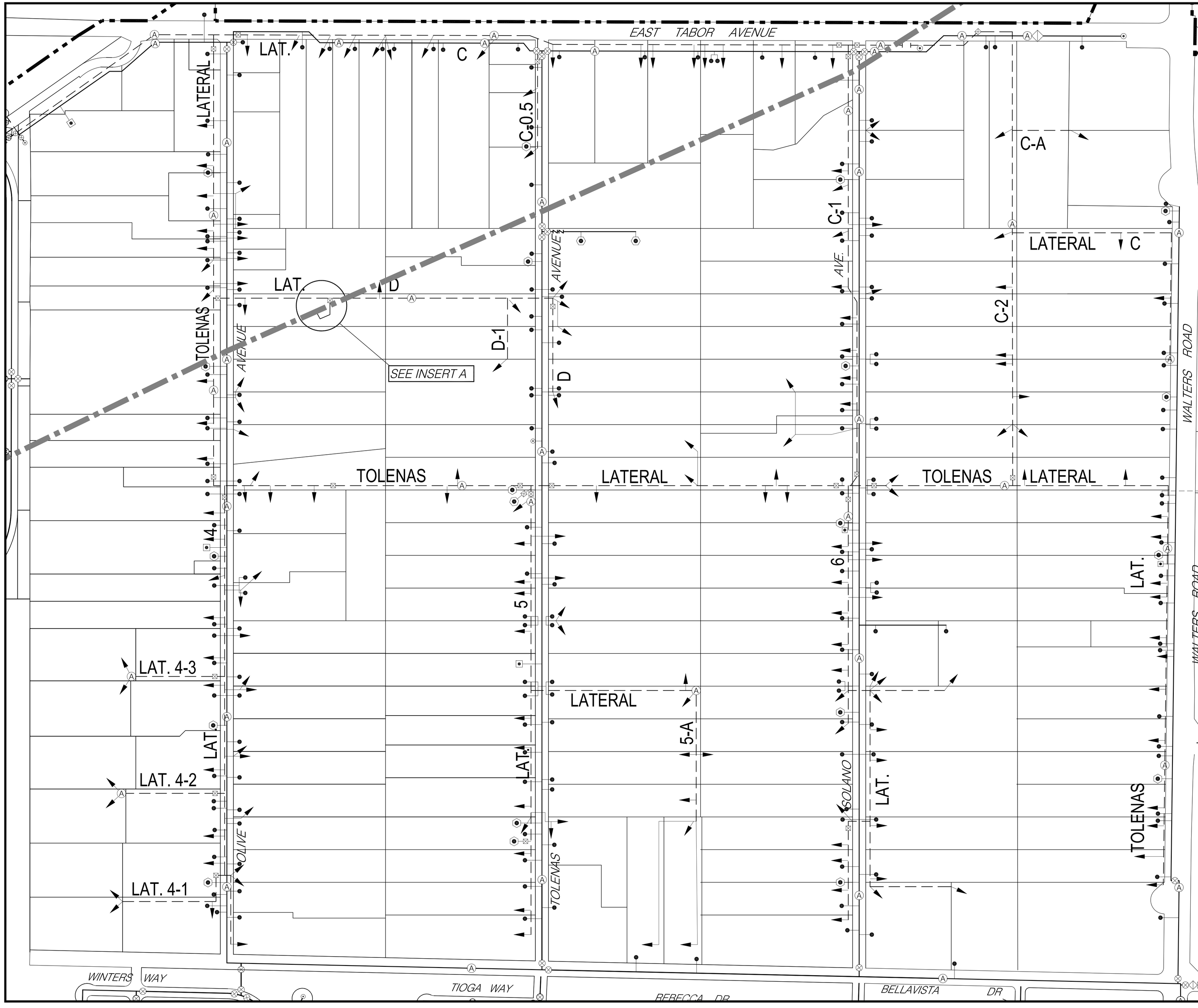
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

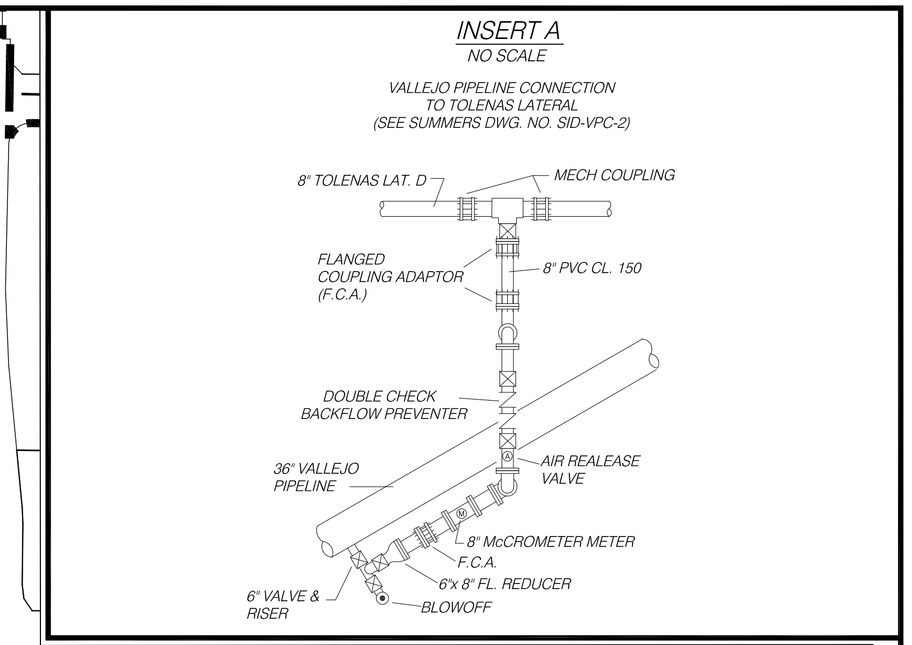
UNIT II

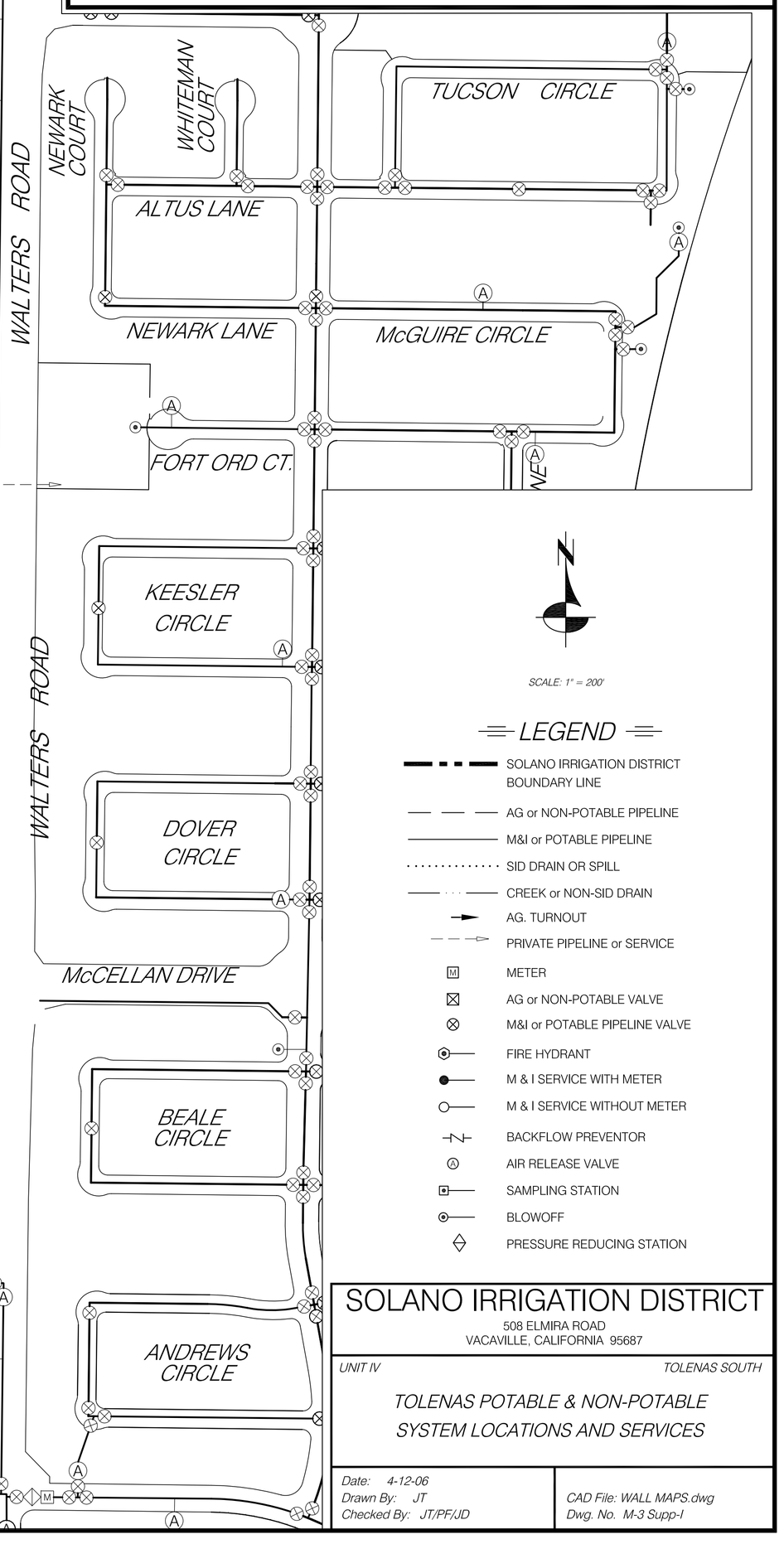
BLUE RIDGE OAKS POTABLE & NON-POTABLE SYSTEM LOCATIONS AND TURNOUTS

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-3, Supp-H







SOLANO IRRIGATION DISTRICT
508 ELMIRA ROAD
VACAVILLE, CALIFORNIA 95687

UNIT IV — TOLENAS SOUTH

TOLENAS POTABLE & NON-POTABLE
SYSTEM LOCATIONS AND SERVICES

Date: 4-12-06
Drawn By: JT
Checked By: JT/PF/JD

CAD File: WALL MAPS.dwg
Dwg. No. M-3 Supp-I