

**AGENDA FOR THE REGULAR MEETING OF THE  
BOARD OF DIRECTORS OF THE  
TEMESCAL VALLEY WATER DISTRICT  
NOVEMBER 28, 2017, 8:30 A.M. AT  
THE DISTRICT'S ADMINISTRATIVE OFFICE  
22646 TEMESCAL CANYON ROAD,  
TEMESCAL VALLEY, CALIFORNIA 92883**

The following is a summary of the rules of order governing meetings of the Temescal Valley Water District Board of Directors:

**AGENDA ITEMS**

In case of an emergency, items may be added to the Agenda by a majority vote of the Board of Directors. An emergency is defined as a work stoppage; a crippling disaster; or other activity, which severely imperils public health, safety or both. Also, items, which arise after the posting of Agenda, may be added by a two-thirds vote of the Board of Directors.

**PUBLIC COMMENT**

Persons wishing to address a matter not on the Agenda may be heard at this time; however, no action will be taken until placed on a future agenda in accordance with Board policy.

**NOTICE TO PUBLIC**

All matters listed under the Consent Calendar will be voted upon by one motion. There will be no separate discussion of these items, unless a Board Member or member of the public requests that a particular item(s) be removed from the Consent Calendar, in which case, they will be considered separately under New Business.

**IF ANYONE WISHES TO SPEAK WITH THE BOARD  
ABOUT ANY CONSENT CALENDAR MATTER(S),  
PLEASE STATE YOUR NAME, ADDRESS,  
AND APPROPRIATE ITEM NUMBER(S).**

**AFFIDAVIT OF POSTING**

I, Allison Harnden, Office Manager of the Temescal Valley Water District, hereby certify that I caused the posting of the Agenda at the District office at 22646 Temescal Canyon Road, Temescal Valley, California 92883 on November 25, 2017.

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Allison Harnden, Office Manager

**AGENDA FOR REGULAR MEETING**  
**November 28, 2017**

**Page No.**

1. **Roll Call and Call to Order.**
2. **Presentations and Acknowledgments.**
3. **Public Comment.**

**BOARD ITEMS:**

4. **Minutes of the October 24, 2017 Regular Meeting.** **6-8**  
**RECOMMENDATION:** Approve Minutes as written.
5. **Payment Authorization Report.** **9-11**  
**RECOMMENDATION:** Approve Report and authorize payment of the October 24-November 28, 2017 invoices.
6. **Revenue & Expenditure Reports. (Unaudited).**
  - a. Revenue & Expenditure Reports. **12-29**  
**RECOMMENDATION:** Note and file.
  - b. Lien update. **30**  
**RECOMMENDATION:** Note and file.
7. **Trilogy Development.**
  - a. Homeowners Association update. **(-)**
  - b. Golf Course update. **(-)**
8. **Sycamore Creek Development.**
  - a. Project Update. **(-)**
  - b. 1738 homes to be built. 1431 houses occupied to date. 82% complete.

	<u>Page No.</u>
<b>9. Terramor Development (Forestar Toscana).</b>	
a. Project Update.	(-)
b. 1443 homes to be built. 28 houses released to date.	
<b>10. Water Utilization Reports.</b>	<b>31-44</b>
<b>RECOMMENDATION:</b> Note and file.	
<b>11. Sustainable Groundwater Management Act.</b>	(-)
a. Project Update.	
<b>12. Committee Reports.</b>	
a. Finance (Director Rodriguez).	(-)
b. Engineering (Director Destache).	(-)
c. Public Relations (Allison Harnden).	(-)
<b>13. General Manager's Report.</b>	
a. General Manager's Report.	<b>45</b>
1. Trilogy Non-potable water conversion project funding request.	<b>46-77</b>
<b>RECOMMENDATION:</b> To be made by the Board.	
2. Proposal by Dudek for CEQA required environmental review for water for reclamation facility expansion.	<b>78-86</b>
<b>RECOMMENDATION:</b> Authorize execution of the proposal.	
b. Operations Report.	<b>87-89</b>
<b>14. District Engineer's Report.</b>	<b>90-91</b>
a. Status of Projects.	
<b>15. District Counsel's Report.</b>	(-)
<b>16. Seminars/Workshops.</b>	(-)

**Page No.**

- 17. Consideration of Correspondence. 92**  
An informational package containing copies of all pertinent correspondence for the Month of October will be distributed to each Director along with the Agenda.
- 18. Adjournment. (-)**

**MINUTES OF THE  
REGULAR MEETING OF THE  
TEMESCAL VALLEY WATER DISTRICT**

**October 24, 2017**

**PRESENT**

C. Colladay  
P. Rodriguez  
J. Butler  
G. Destache

**ABSENT**

D. De Frates

**GUESTS**

J. Watson  
J. Watson  
T. Davis

**STAFF**

J. Pape  
A. Harnden  
M. McCullough  
J. Scheidel  
D. Saunders  
K. Caldwell

**1. Roll Call and Call to Order.**

The regular meeting of the Temescal Valley Water District was called to order by President Colladay at 8:30 a.m.

**2. Presentations and Acknowledgments.**

**3. Public Comment.**

**BOARD ITEMS:**

**4. Minutes of the September 26, 2017 Regular Meeting.**

**ACTION:** Director Destache moved to approve the minutes as presented. Director Butler seconded. Motion carried unanimously.

**5. Payment Authorization Report.**

**ACTION:** Director Rodriguez moved to approve the September 26-October 24, 2017 invoices. Director Destache seconded. Motion carried unanimously.

**6. Revenue & Expenditure Reports. (Unaudited).**

a. Revenue & Expenditure Reports.

**ACTION:** Note and file.

b. Lien update.

**ACTION:** Note and file.

7. **Trilogy Development.**
  - a. Homeowners Association update: None
  - b. Golf Course update: None
8. **Sycamore Creek Development.**
  - a. Project Update: None
  - b. 1738 homes to be built. 1431 houses occupied to date. 82% complete.
9. **Terramor Development (Forestar Toscana).**
  - a. Project Update.
  - b. 1443 estimated houses to be built.
10. **Water Utilization Reports.**

**ACTION:** Note and file.
11. **Sustainable Groundwater Management Act.**
  - a. Project Update.
12. **Committee Reports.**
  - a. Finance (Director Rodriguez).
  - b. Engineering (Director Destache).
  - c. Public Relations (Allison Harnden) – Allison reported that Directors Rodriguez, De Frates and Destache were appointed for another term in lieu of election. She also asked the Board if they wanted to move up the December meeting date to the 19th to avoid holiday vacation conflicts, they concurred.
13. **General Manager's Report.**
  - a. General Manager's Report.
  - b. Operations Report.
14. **District Engineer's Report.**
  - a. Status of Projects.

**15. District Counsel’s Report.**

**16. Seminars/Workshops.**

**17. Consideration of Correspondence.**

An informational package containing copies of all pertinent correspondence for the Month of September will be distributed to each Director along with the Agenda.

**18. Adjournment.**

There being no further business, the October 24, 2017 Regular Meeting of the Temescal Valley Water District Board of Directors was adjourned at 9:43 a.m. by President Colladay.

**ATTEST:**

**APPROVED:**

\_\_\_\_\_  
Paul Rodriguez, Secretary

\_\_\_\_\_  
Charles Colladay, President

Date: \_\_\_\_\_

Date: \_\_\_\_\_



TEMESCAL VALLEY WATER DISTRICT  
 PAYMENT AUTHORIZATION REPORT  
 November 28, 2017

Check #	Date	Payee ID	Payee	Amount
20249	10/26/17	EL	EDUARDO LOPEZ-TRK MAINT.	80.00
20250	11/3/17	AD	PAYROLL	-
20251	11/3/17	BE	PAYROLL	-
20252	11/3/17	CG	PAYROLL	-
20253	11/3/17	CL	PAYROLL	-
20254	11/3/17	DB	PAYROLL	-
20255	11/3/17	JH	PAYROLL	-
20256	11/3/17	KC	PAYROLL	-
20257	11/3/17	KN	PAYROLL	-
20258	11/3/17	MM	PAYROLL	-
20259	11/3/17	BE	PAYROLL	-
20260	11/3/17	JH	PAYROLL	-
20261	11/3/17	KN	PAYROLL	-
20262	11/3/17	JH	PAYROLL	-
20263	11/3/17	FI01	FIDELITY INVESTMENTS	910.80
20264	11/3/17	KC	PAYROLL	-
20265	11/3/17	RO	PAUL RODRIGUEZ	147.82
20266	11/3/17	KC	PAYROLL	-
20267	11/3/17	REFUND	DARLA GARCIA	300.00
20268	11/3/17	SO03	SOUTHERN CALIF EDISON CO.	69,358.13
20269	11/3/17	USB01	US BANK GOVERNMENT SERVICES	1,009.80
20270	11/9/17	EL	EDUARDO LOPEZ-TRK MAINT	80.00
20271	11/17/17	AD	PAYROLL	-
20272	11/17/17	BE	PAYROLL	-
20273	11/17/17	CG	PAYROLL	-
20274	11/17/17	CL	PAYROLL	-
20275	11/17/17	DB	PAYROLL	-
20276	11/17/17	JH	PAYROLL	-
20277	11/17/17	KC	PAYROLL	-
20278	11/17/17	KN	PAYROLL	-
20279	11/17/17	MM	PAYROLL	-
20280	11/17/17	JH	PAYROLL	-
20281	11/17/17	JH	PAYROLL	-
20282	11/17/17	CA16	CALIFORNIA CHOICE BENEFIT ADMINISTRATOR	5,383.89
20283	11/17/17	GM	GLEN MUNCY (INSPECTION)	4,266.00
20284	11/17/17	PLM01	PARRA LANDSCAPE MAINTENANCE	2,800.00
20285	11/17/17	SEMA	SEMA INC.	728.77
20286	11/17/17	ST02	STATE COMPENSATION INSUR.FUND	1,904.67
20287	11/17/17	TNP	TOP NOTCH PLUMBING	1,065.22
20288	11/17/17	TWC	SPECTRUM BUSINESS	1,017.55
20289	11/17/17	REFUND	CLAIRE LANHAM	113.76
20290	11/17/17	REFUND	ELIZABETH NEGRETE	93.48

PALM REMOVED

TEMESCAL VALLEY WATER DISTRICT  
 PAYMENT AUTHORIZATION REPORT  
 November 28, 2017

Check #	Date	Payee ID	Payee	Amount	
20291	11/17/17	REFUND	ALISSA SUDTELL	123.86	
20292	11/17/17	REFUND	VICTOR GARCIA	74.66	
20293	11/17/17	RO	PAUL RODRIGUEZ	147.82	
20294	11/20/17	AS01	ASJ INDUSTRIAL HOSE & FITTING INC.	371.45	
20295	11/20/17	ATT01	AT&T	450.14	
20296	11/20/17	BA01	BABCOCK LABORATORIES, INC	1,687.00	
20297	11/20/17	BGM	BIG GIANT MEDIA	54.90	
20298	11/20/17	CAM	CHANDLER INVESTMENT MANAGEMENT	1,000.00	
20299	11/20/17	CBE	CBE	22.50	
20300	11/20/17	CE01	CENTRAL COMMUNICATIONS	72.95	
20301	11/20/17	CM01	CORE & MAIN	11.21	
20302	11/20/17	CUSI	CONTINENTAL UTILITY SOLUTIONS INC.	1,800.00	
20303	11/20/17	DSC	DATABASE SYSTEMS CORP.	756.37	
20304	11/20/17	DU01	DUDEK & ASSOCIATES-CONT MGT	21,490.40	
20305	11/20/17	DU02	DUDEK & ASSOCIATES-SPECIAL PROJECTS	30,187.75	
20306	11/20/17	DU03	DUDEK & ASSOCIATES-PASS THRU	3,422.50	
20307	11/20/17	DU04	DUDEK & ASSOCIATES-ENGINEERING	5,835.24	
20308	11/20/17	DWEI	DEXTER WILSON ENGINEERING INC	1,837.50	
20309	11/20/17	EW01	EWING IRRIGATION PRODUCTS	182.41	
20310	11/20/17	GJR	GJR ELECTRIC	2,316.82	INSTALL BREAKER TERRMOR SEWER LIFT
20311	11/20/17	HITR	HIGHLEY TRUCKING	800.00	
20312	11/20/17	HO01	HOME DEPOT CREDIT SERVICES	61.16	
20313	11/20/17	ISC	IT SUPPORT CA INC.	3,362.93	SERVERS/LIC
20314	11/20/17	LA	LOCK AMERICA	403.42	
20315	11/20/17	ON01	ONE STOP LANDSCAPE SUPPLY INC.	1,560.35	
20316	11/20/17	PCE	PACIFIC COAST ENVELOPE INC	109.91	
20317	11/20/17	PPE	PRIVATE PEST EXTERMINATORS	400.00	
20318	11/20/17	RTI	RICHARDSON TECHNOLOGIES INC.	343.00	
20319	11/20/17	SA02	SAM'S CLUB	100.00	
20320	11/20/17	ST01	STAPLES CREDIT PLAN	722.29	
20321	11/20/17	UCSI	ULTIMATE CLEANING SOLUTIONS INC	290.00	
20322	11/20/17	UN01	UNDERGROUND SERVICE ALERT	142.10	
20323	11/20/17	VA01	VALLEY CITIES/GONZALES FENCE	550.00	
20324	11/20/17	WA01	WASTE MANAGEMENT - INLAND EMPIRE	179.52	
20325	11/20/17	WE01	WESTERN MUNICIPAL WATER DISTR.	343,070.79	
Total				513,200.84	

THESE INVOICES ARE SUBMITTED TO THE  
 TEMESCAL VALLEY BOARD OF DIRECTORS FOR  
 APPROVAL AND AUTHORIZATION FOR PAYMENT

TEMESCAL VALLEY WATER DISTRICT  
PAYMENT AUTHORIZATION REPORT  
November 28, 2017

Check #	Date	Payee ID	Payee	Amount
			<i>Mel McCullough - Finance Manager</i>	
			Mel McCullough - Finance Manager	
			11/28/2017	
			Date	

**TEMESCAL VALLEY WATER DISTRICT  
INTERNAL BALANCE SHEET  
31-Oct-17**

ASSETS

Fixed Assets (net of accumulated depreciation)			
Land		\$	902,118
Treatment Plants			8,976,639
Capacity Rights			13,503,639
Water System, Reservoir & Wells			9,397,345
Water & Sewer Mains			27,150,073
General Equipment Sewer/Water/ Furniture			564,533
Buildings & Entrance Improvements			353,169
			\$ 60,847,517
Current Assets			
Cash - Wastewater	8,727,435		
Cash - Water	7,608,534		
Cash - ID #1	447,560		
Cash - ID #2	223,780		
Cash - Nonpotable	5,370,729		
Cash - Deposits	998,527		23,376,568
Accounts Receivable-Services/Developers			1,091,148
Assessment Receivable			267,557
Interest Receivable			3,948
Prepaid Expenses			24,123
Inventory			57,908
			24,821,251
Other Assets			
Work-in-Process			119,440
Deferred Outflows - Pension		\$	158,570
<b>TOTAL ASSETS</b>		\$	<b>85,946,778</b>

LIABILITIES

Current Liabilities			
Accounts Payable		\$	515,972
Security Deposits			191,538
Payroll & Payroll Taxes Payable			57,224
Capacity & Meter Deposits			176,730
Fiduciary Payments Payable			304,081
Developer Deposits			302,851
Other Deposits			23,327
			1,571,723
Long-term Liabilities			
TVRP Note			1,768,400
Deferred Inflows - Pension			57,103
<b>TOTAL LIABILITIES</b>		\$	<b>3,397,225</b>

FUND EQUITY

Fund Balances			
Waste Water Fund Balance			27,691,294
Water Fund Balance			43,519,045
ID #1 Fund Balance			626,478
ID #2 Fund Balance			719,437
Recycled Water Fund Balance			9,993,299
<b>TOTAL FUND EQUITY</b>		\$	<b>82,549,552</b>

TOTAL LIABILITIES & FUND EQUITY

\$ 85,946,778

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET	BUDGET
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE	2017-2018	REMAINING
<b><u>WASTEWATER DEPARTMENT</u></b>								
OPERATING REVENUE:								
MONTHLY SEWER SERVICE CHARGE	181,144	176,000	5,144	723,525	704,000	19,525	2,110,000	(1,386,475)
MONTHLY SERVICE CHARGE-ID #1	10,766	10,766	-	43,066	43,066	-	129,200	(86,134)
MONTHLY SERVICE CHARGE-ID #2	12,179	12,179	-	48,714	48,714	-	146,150	(97,436)
MONTHLY SEWER SERVICE CHG-R COM	9,306	9,200	106	29,536	36,800	(7,264)	110,000	(80,464)
MISC UTILITY CHARGES/ REVENUE	5,179	5,420	(241)	23,609	21,680	1,929	65,000	(41,391)
STANDBY CHARGES	6,809	-	6,809	8,940	-	8,940	106,000	(97,060)
CFD REIMBURSEMENTS	-	-	-	-	-	-	20,000	(20,000)
INSPECTION CHARGES	2,052	2,000	52	10,625	8,000	2,625	15,000	(4,375)
TOTAL WASTEWATER REVENUE	227,435	215,565	11,870	888,015	862,260	25,755	2,701,350	(1,813,335)
OPERATING EXPENSES:								
PLANT WAGES EXPENSE	8,700	9,250	(550)	34,351	39,000	(4,649)	159,000	(124,649)
PAYROLL TAXES EXP	133	250	(117)	522	1,000	(478)	2,800	(2,278)
EMPLOYEE BENEFITS-INS	969	1,200	(231)	3,828	4,800	(972)	15,500	(11,672)
EMPLOYEE BENEFITS-RETIREMENT	1,338	1,630	(292)	5,287	6,520	(1,233)	21,200	(15,913)
OVERTIME EXP	608	600	8	3,608	2,400	1,208	7,000	(3,392)
MILEAGE EXP	113	50	63	339	200	139	500	(161)
VACATION EXP	624	675	(51)	2,547	2,700	(153)	8,100	(5,553)
ELECTRICIAN LABOR COSTS	-	400	(400)	-	1,600	(1,600)	5,000	(5,000)
SCADA SYSTEM ADMIN/MAINT	-	830	(830)	2,477	3,320	(843)	10,000	(7,523)
LABORATORY TESTING COSTS	660	875	(215)	3,430	4,500	(1,070)	22,500	(19,070)
SLUDGE DISPOSAL/PUMPING COSTS	179	2,100	(1,921)	4,968	8,400	(3,432)	25,000	(20,032)
SLUDGE DISPOSAL BAG EXP	-	-	-	25,000	25,000	-	25,000	-
SLUDGE CHEMICAL EXP	-	-	-	-	1,250	(1,250)	5,000	(5,000)
CHEMICALS, LUBRICANTS & FUELS	3,365	5,000	(1,635)	17,756	20,000	(2,244)	115,000	(97,244)
EQUIPMENT RENTAL COSTS	-	200	(200)	-	800	(800)	2,000	(2,000)
EQUIPMENT REPAIRS & MAINT.	7,373	8,750	(1,377)	38,919	42,000	(3,081)	225,000	(186,081)
SEWER LINE REPAIRS	-	-	-	3,249	2,500	749	10,000	(6,751)
SEWER CLEANING AND VIDEO EXP	-	-	-	1,785	2,500	(715)	15,000	(13,215)
SECURITY AND ALARM EXP	-	-	-	-	-	-	1,500	(1,500)
PROPERTY MAINTENANCE	3,422	4,400	(978)	11,969	13,600	(1,631)	53,000	(41,031)
ENGINEERING/ADMIN. STUDIES	-	-	-	-	-	-	20,000	(20,000)
ENERGY COSTS	13,295	16,250	(2,955)	65,564	65,000	564	195,000	(129,436)
CONSUMABLE SUPPLIES & CLEANING	244	420	(176)	3,014	1,680	1,334	5,000	(1,986)
SMALL EQUIPMENT & TOOLS COST	467	420	47	1,849	1,680	169	5,000	(3,151)
PERMITS, FEES & TAXES	-	2,100	(2,100)	1,495	8,400	(6,905)	25,000	(23,505)
SAWPA BASIN MONITORING EXP	-	-	-	-	-	-	25,000	(25,000)
MAP UPDATING/GIS EXP	-	-	-	-	500	(500)	2,000	(2,000)
MISC. OPERATING EXP	-	200	(200)	-	400	(400)	1,000	(1,000)
BAD DEBT EXPENSES	-	-	-	-	-	-	1,500	(1,500)
CONTINGENCIES	-	2,500	(2,500)	-	10,000	(10,000)	30,000	(30,000)
TOTAL OPERATING EXPENSES	41,490	58,100	(16,610)	231,957	269,750	(37,793)	1,037,600	(805,643)

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET	BUDGET
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE	2017-2018	REMAINING
ADMINISTRATIVE EXPENSES:								
CONTRACT MANAGEMENT	8,300	8,500	(200)	30,090	32,000	(1,910)	100,000	(69,910)
GENERAL ENGINEERING EXP	248	1,250	(1,002)	7,166	7,500	(334)	15,000	(7,834)
ANNUAL ASSESSMENT EXP	-	-	-	-	3,000	(3,000)	3,000	(3,000)
PLAN CHECK & INSPECTION EXP	-	-	-	-	1,000	(1,000)	2,500	(2,500)
EMPLOYEE BENEFITS-INS	1,806	1,400	406	6,912	5,600	1,312	17,000	(10,088)
EMPLOYEE BENEFITS-RETIREMENT	2,207	1,700	507	8,448	6,800	1,648	22,000	(13,552)
WAGES EXPENSE	10,983	11,650	(667)	46,087	46,600	(513)	151,000	(104,913)
VACATION EXP	797	850	(53)	3,226	3,400	(174)	10,100	(6,874)
OVERTIME EXP	-	100	(100)	-	400	(400)	1,000	(1,000)
MILEAGE EXP ADMIN	-	50	(50)	65	200	(135)	500	(435)
PAYROLL TAX EXPENSES	191	210	(19)	787	840	(53)	2,700	(1,913)
CONTRACT STAFFING EXP	-	-	-	-	-	-	2,000	(2,000)
LEGAL EXPENSES	-	850	(850)	990	3,400	(2,410)	10,000	(9,010)
AUDIT EXPENSES	-	-	-	-	-	-	5,400	(5,400)
BOARD COMMITTEE MEETING EXP.	284	625	(341)	1,331	2,500	(1,169)	7,500	(6,169)
ELECTION & PUBLIC HEARING EXP	-	-	-	-	7,000	(7,000)	7,000	(7,000)
COMPUTER SYSTEM ADMIN	-	1,700	(1,700)	3,047	6,800	(3,753)	20,000	(16,953)
BANK CHARGES EXP	1,269	850	419	5,302	3,400	1,902	10,000	(4,698)
MISCELLANEOUS & EDUCATION EXP	300	100	200	815	400	415	1,000	(185)
TELEPHONE, FAX & CELL EXP	1,023	1,100	(77)	3,294	4,400	(1,106)	13,000	(9,706)
OFFICE SUPPLIES EXP	792	1,050	(258)	4,635	4,200	435	12,500	(7,865)
PRINTING EXPENSES	-	2,000	(2,000)	1,387	2,000	(613)	6,000	(4,613)
POSTAGE & DELIVERY EXPENSE	879	1,000	(121)	3,832	4,000	(168)	12,000	(8,168)
PUBLICATIONS, NOTICES & DUES	58	-	58	228	250	(22)	750	(522)
EQUIPMENT LEASE EXPENSES	729	500	229	2,481	2,000	481	6,000	(3,519)
INSURANCE EXPENSES	1,784	2,100	(316)	8,211	8,400	(189)	25,000	(16,789)
INVESTMENT EXP	-	400	(400)	1,200	1,600	(400)	4,800	(3,600)
COMMUNITY OUTREACH EXP	-	-	-	-	5,000	(5,000)	8,000	(8,000)
TOTAL ADMINISTRATIVE EXPENSES	31,650	37,985	(6,335)	139,534	162,690	(23,156)	475,750	(336,216)
TOTAL WASTEWATER EXPENSES	73,140	96,085	(22,945)	371,491	432,440	(60,949)	1,513,350	(1,141,859)
NET OPERATING REVENUE/EXPENSE	154,295	119,480	34,815	516,524	429,820	86,704	1,188,000	(671,476)
NON-OPERATING SOURCE OF FUNDS:								
OTHER REVENUE REIMB-MANDATE COSTS	-	-	-	-	-	-	-	-
INTEREST INCOME	1,582	1,800	(218)	2,180	7,200	(5,020)	22,000	(19,820)
PROPERTY TAX INCOME	1,707	-	1,707	8,433	7,000	1,433	70,000	(61,567)
TOTAL NON-OPER SOURCE OF FUNDS	3,289	1,800	1,489	10,613	14,200	(3,587)	92,000	(81,387)
TOTAL SEWER REVENUE/EXPENSE	157,584	121,280	36,304	527,137	444,020	83,117	1,280,000	(752,863)
TRANSFER TO CAPITAL FUND-REPLACEMENT				290,985				
TRANSFER TO CAPITAL FUND-IMPROVEMENT				236,152				
CONNECTION FEES				6,769				
				-				

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

**WASTE WATER CAPITAL FUND:**

ENDING FUNDS AVAILABLE 2015-2016	<b>10,179,521</b>
TRANSFER FOR CAPITAL FUND REPLACEMENT	<b>290,985</b>
TRANSFER FOR CAPITAL IMPROVEMENTS	<b>242,921</b>
CAPITAL IMPROVEMENT (SEE ATTACHED DETAIL)	<b><u>(3,620)</u></b>
TOTAL FUNDS AVAILABLE	<b><u>10,709,807</u></b>



**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET 2017-2018	BUDGET REMAINING
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE		
<b><u>WATER DEPARTMENT</u></b>								
<b>OPERATING REVENUE:</b>								
WATER SERVICE CHARGE	111,589	117,000	(5,411)	493,319	468,000	25,319	1,400,000	(906,681)
WATER USAGE CHARGES	365,739	404,000	(38,261)	1,539,921	1,737,000	(197,079)	4,038,000	(2,498,079)
WATER PUMPING CHARGE	16,489	15,000	1,489	54,635	64,500	(9,865)	150,000	(95,365)
FIRE PROTECTION CHARGES	2,712	2,300	412	11,162	9,200	1,962	28,000	(16,838)
MISC. UTILITY CHARGES	3,095	5,000	(1,905)	13,902	20,000	(6,098)	60,000	(46,098)
SERVICE METER INCOME	2,400	6,500	(4,100)	48,400	26,500	21,900	80,000	(31,600)
CELLULAR SITE LEASE	-	3,300	(3,300)	8,612	13,200	(4,588)	40,000	(31,388)
MWD READINESS TO SERVE CHARGE	11,713	13,300	(1,587)	46,751	53,200	(6,449)	160,000	(113,249)
STANDBY CHARGES	2,918	-	2,918	3,629	-	3,629	41,000	(37,371)
CFD REIMBURSEMENTS	-	-	-	-	-	-	20,000	(20,000)
INSPECTION CHARGES	-	-	-	-	3,750	(3,750)	15,000	(15,000)
TOTAL WATER REVENUE	516,655	566,400	(49,745)	2,220,331	2,395,350	(175,019)	6,032,000	(3,811,669)
<b>OPERATING EXPENSES:</b>								
WAGES EXPENSE	7,612	8,600	(988)	30,057	34,400	(4,343)	139,000	(108,943)
PAYROLL TAXES EXP	116	185	(69)	457	740	(283)	2,400	(1,943)
EMPLOYEE BENEFITS-INS	909	900	9	3,590	4,800	(1,210)	14,000	(10,410)
EMPLOYEE BENEFITS-RETIREMENT	1,111	1,200	(89)	4,388	6,000	(1,612)	19,000	(14,612)
OPERATION-MILEAGE EXP	16	50	(34)	65	200	(135)	500	(435)
OVERTIME EXPENSE/ ON CALL	532	500	32	3,157	2,000	1,157	6,000	(2,843)
VACATION EXP	780	600	180	2,931	2,400	531	7,100	(4,169)
CONTRACT STAFFING-METER READS	4,997	5,400	(403)	19,899	21,600	(1,701)	65,000	(45,101)
SCADA SYSTEM ADMIN/MAINT	-	850	(850)	2,168	3,400	(1,232)	10,000	(7,832)
LABORATORY TESTING COSTS	1,027	1,000	27	4,767	4,000	767	12,500	(7,733)
COMPLIANCE TESTING (ISDE/CROSS)	-	1,000	(1,000)	-	1,000	(1,000)	3,000	(3,000)
LEAK DETECTION EXPENSE	-	800	(800)	-	3,200	(3,200)	8,000	(8,000)
EPA WATER TESTING EXP	-	2,000	(2,000)	-	2,000	(2,000)	6,000	(6,000)
EQUIPMENT RENTAL COSTS	-	200	(200)	-	800	(800)	2,000	(2,000)
EQUIPMENT REPAIRS & MAINT.	238	8,500	(8,262)	23,740	34,000	(10,260)	100,000	(76,260)
WATER LINE REPAIRS	-	3,500	(3,500)	-	14,000	(14,000)	40,000	(40,000)
ALARM MONITORING COSTS	-	-	-	-	400	(400)	1,200	(1,200)
PROPERTY MAINTENANCE	-	500	(500)	-	2,000	(2,000)	6,000	(6,000)
ENGINEERING/ADMIN. STUDIES	-	700	(700)	-	2,800	(2,800)	8,000	(8,000)
ENERGY COSTS	9,626	12,500	(2,874)	66,987	53,750	13,237	125,000	(58,013)
CONSUMABLE SUPPLIES & CLEANING	-	300	(300)	709	1,200	(491)	3,500	(2,791)
CHEMICALS, LUBRICANTS & FUELS	365	600	(235)	985	2,400	(1,415)	7,000	(6,015)
SMALL EQUIPMENT & TOOLS COST	-	200	(200)	525	800	(275)	2,000	(1,475)
PERMITS, FEES & TAXES	-	500	(500)	1,165	6,500	(5,335)	34,000	(32,835)
MAP UPDATING/GIS EXP	-	400	(400)	-	1,600	(1,600)	5,000	(5,000)
SERVICE METERS & PARTS COSTS	1,296	5,000	(3,704)	24,064	20,000	4,064	60,000	(35,936)
WHOLESALE WATER PURCHASES	329,642	350,000	(20,358)	1,396,709	1,505,000	(108,291)	3,503,000	(2,106,291)
WATER-MWD CAPACITY CHARGE	3,733	5,000	(1,267)	14,933	20,000	(5,067)	60,000	(45,067)
WATER-READINESS TO SERVE/REFUSAL CHARGE	9,695	11,700	(2,005)	38,782	46,800	(8,018)	140,000	(101,218)
WMWD-MGLMR EXP	116,314	110,000	6,314	116,314	110,000	6,314	110,000	6,314
BAD DEBT EXPENSES	-	-	-	-	-	-	1,500	(1,500)
CONSERVATION REBATE EXP	-	-	-	-	-	-	3,000	(3,000)
CONTINGENCIES	-	-	-	-	-	-	20,000	(20,000)
TOTAL OPERATING EXPENSES	488,009	532,685	(44,676)	1,756,392	1,907,790	(151,398)	4,523,700	(2,767,308)

**TEMESCAL VALLEY WATER DISTRICT**  
**REVENUE AND EXPENDITURES/BUDGET**  
For Three Months ending September 30, 2017

REVISED

	OCTOBER			YEAR TO DATE			BUDGET	BUDGET
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE	2017-2018	REMAINING
<b>ADMINISTRATIVE EXPENSES:</b>								
CONTRACT MANAGEMENT	5,188	7,700	(2,512)	18,806	26,600	(7,794)	87,500	(68,694)
GENERAL ENGINEERING EXP	1,838	1,350	488	2,538	5,400	(2,862)	16,000	(13,462)
PLAN CHECK & INSPECTION EXP	-	-	-	216	300	(84)	10,000	(9,784)
EMPLOYEE BENEFITS-INS	1,216	1,250	(34)	5,466	5,000	466	15,000	(9,534)
EMPLOYEE BENEFITS-RETIREMENT	1,486	1,500	(14)	6,680	6,800	(120)	19,000	(12,320)
ANNUAL ASSESSMENT EXP	-	-	-	2,861	3,000	(139)	3,000	(139)
WAGES EXPENSE	9,610	10,200	(590)	35,951	40,800	(4,849)	132,000	(96,049)
VACATION EXP	997	750	247	3,725	3,000	725	8,800	(5,075)
MILEAGE EXP ADMIN	-	50	(50)	151	200	(49)	500	(349)
OVERTIME EXPENSE	-	100	(100)	-	400	(400)	1,000	(1,000)
PAYROLL TAX EXPENSES	167	185	(18)	688	740	(52)	2,400	(1,712)
CONTRACT STAFFING OFFICE	-	-	-	-	-	-	2,000	(2,000)
LEGAL EXPENSES	-	675	(675)	866	2,700	(1,834)	8,000	(7,134)
AUDIT EXPENSES	-	-	-	-	5,000	(5,000)	5,000	(5,000)
BOARD COMMITTEE/ MEETING EXP.	248	525	(277)	1,181	2,100	(919)	6,300	(5,119)
COMPUTER SYSTEM EXP	-	1,000	(1,000)	2,666	4,000	(1,334)	12,000	(9,334)
BANK CHARGES EXP	1,111	600	511	4,640	2,400	2,240	7,000	(2,360)
MISCELLANEOUS & EDUCATION EXP	-	-	-	450	500	(50)	2,000	(1,550)
TELEPHONE EXP	895	920	(25)	2,882	3,680	(798)	11,000	(8,118)
OFFICE SUPPLIES EXP	635	825	(190)	4,105	3,300	805	10,000	(5,895)
PRINTING EXPENSES	-	400	(400)	1,387	1,600	(213)	5,000	(3,613)
POSTAGE & DELIVERY EXPENSE	770	850	(80)	3,295	3,400	(105)	10,000	(6,705)
PUBLICATIONS, NOTICES & DUES	-	-	-	527	500	27	2,000	(1,473)
EQUIPMENT LEASE EXPENSES	-	500	(500)	1,048	2,000	(952)	6,000	(4,952)
INSURANCE EXPENSES	1,562	1,850	(288)	7,185	7,400	(215)	22,000	(14,815)
INVESTMENT EXPENSE	-	350	(350)	1,050	1,400	(350)	4,200	(3,150)
ELECTION & PUBLIC HEARING EXP	-	-	-	-	6,600	(6,600)	6,600	(6,600)
COMMUNITY OUT REACH EXP	-	-	-	7,901	7,000	901	7,000	901
JPA EXPENSE(GSA FOR BEDFORD/COLDWATER)	-	-	-	-	-	-	-	-
<b>TOTAL ADMINISTRATIVE EXPENSES</b>	<b>25,723</b>	<b>31,580</b>	<b>(5,857)</b>	<b>116,265</b>	<b>145,820</b>	<b>(29,555)</b>	<b>421,300</b>	<b>(305,035)</b>
<b>TOTAL WATER EXPENSES</b>	<b>513,732</b>	<b>564,265</b>	<b>(50,533)</b>	<b>1,872,657</b>	<b>2,053,610</b>	<b>(180,953)</b>	<b>4,945,000</b>	<b>(3,072,343)</b>
<b>NET OPERATING REVENUE/EXPENSE</b>	<b>2,923</b>	<b>2,135</b>	<b>788</b>	<b>347,674</b>	<b>341,740</b>	<b>5,934</b>	<b>1,087,000</b>	<b>(739,326)</b>
<b>NON-OPERATING SOURCE OF FUNDS:</b>								
OTHER REVENUE REIMB-MANDATE COSTS			-	-	-	-	-	-
INTEREST INCOME	(1,197)	2,100	(3,297)	2,754	8,400	(5,646)	25,200	(22,446)
PROPERTY TAX INCOME	841	-	841	10,888	5,000	5,888	40,000	(29,112)
<b>TOTAL NON-OP SOURCE OF FUNDS</b>	<b>(356)</b>	<b>2,100</b>	<b>(2,456)</b>	<b>13,642</b>	<b>13,400</b>	<b>242</b>	<b>65,200</b>	<b>(51,558)</b>
<b>TOTAL REVENUE/EXPENSE</b>	<b>2,567</b>	<b>4,235</b>	<b>(1,668)</b>	<b>361,316</b>	<b>355,140</b>	<b>6,176</b>	<b>1,152,200</b>	<b>(790,884)</b>
TRANSFER TO CAPITAL FUND-REPLACEMENT				173,824				
TRANSFER TO CAPITAL FUND-IMPROVEMENT				187,492				
CONNECTION FEES				291,169				
CAPACITY USAGE INCOME				258,922				
LONG TERM DEBT REDUCTION				(258,922)				
				-				

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

**WATER CAPITAL FUND:**

ENDING FUNDS AVAILABLE 2015-2016	<b>9,129,875</b>
TRANSFER FOR CAPITAL FUND REPLACEMENT	<b>173,824</b>
TRANSFER FOR CAPITAL IMPROVEMENTS	<b>478,661</b>
CAPITAL IMPROVEMENT (SEE ATTACHED DETAIL)	<b><u>(90,199)</u></b>
TOTAL FUNDS AVAILABLE	<b><u>9,692,161</u></b>

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET	BUDGET
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE	2017-2018	REMAINING
<b><u>ID#1 DEPARTMENT</u></b>								
OPERATING REVENUE:								
ANNUAL SEWER SERVICE CHARGE	13,725	13,725	-	54,900	54,900	-	164,700	(109,800)
TOTAL ID #1 REVENUE	13,725	13,725	-	54,900	54,900	-	164,700	(109,800)
OPERATING EXPENSES:								
MONTHLY TREATMENT PLANT COSTS	10,766	10,766	-	10,766	10,766	-	129,200	(118,434)
TOTAL OPERATING COSTS	10,766	10,766	-	10,766	10,766	-	129,200	(118,434)
ADMINISTRATIVE EXPENSES:								
ANNUAL ASSESSMENT PROCESSING	2,089	3,000	(911)	2,089	3,000	(911)	3,000	(911)
TOTAL ADMINISTRATIVE EXPENSES	2,089	3,000	(911)	2,089	3,000	(911)	3,000	(911)
TOTAL ID#1 EXPENSES	12,855	13,766	(911)	12,855	10,766	2,089	132,200	(119,345)
<b>NET OPERATING REVENUE/EXPENSE</b>	<b>870</b>	<b>(41)</b>	<b>911</b>	<b>42,045</b>	<b>44,134</b>	<b>(2,089)</b>	<b>32,500</b>	<b>9,545</b>
NON-OPERATING SOURCE OF FUNDS:								
INTEREST INCOME	(41)	30	(71)	57	120	(63)	360	(303)
TOTAL NON-OPER SOURCE OF FUNDS	(41)	30	(71)	57	120	(63)	360	(303)
<b>TOTAL REVENUE/EXPENSE</b>	<b>829</b>	<b>(11)</b>	<b>840</b>	<b>42,102</b>	<b>44,254</b>	<b>(2,152)</b>	<b>32,860</b>	<b>9,242</b>
TRANSFER TO CAPITAL FUND-REPLACEMENT				7,476				
TRANSFER TO CAPITAL FUND-IMPROVEMENT				34,626				
				-				
<b><u>ID #1 FUND BALANCE:</u></b>								
ENDING FUNDS AVAILABLE 2015-2016	453,900							
TRANSFER FOR CAPITAL FUND REPLACEMENT	7,476							
TRANSFER FOR CAPITAL IMPROVEMENTS	34,626							
CAPITAL IMPROVEMENT (SEE ATTACHED DETAIL)	-							
TOTAL FUNDS AVAILABLE	496,002							

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET 2017-2018	BUDGET REMAINING
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE		
<b><i>ID#2 DEPARTMENT</i></b>								
OPERATING REVENUE:								
ANNUAL SEWER SERVICE CHARGE	15,525	15,525	-	62,100	62,100	-	186,300	(124,200)
TOTAL ID #2 REVENUE	15,525	15,525	-	62,100	62,100	-	186,300	(124,200)
OPERATING EXPENSES:								
MONTHLY TREATMENT PLANT COSTS	12,179	12,179	-	-	-	-	146,150	(146,150)
TOTAL OPERATING COSTS	12,179	12,179	-	-	-	-	146,150	(146,150)
ADMINISTRATIVE EXPENSES:								
GENERAL ENGINEERING EXP	-	-	-	-	-	-	2,500	(2,500)
ANNUAL ASSESSMENT PROCESSING	1,085	-	1,085	1,085	3,000	(1,915)	3,000	(1,915)
TOTAL ADMINISTRATIVE EXPENSES	1,085	-	1,085	1,085	3,000	(1,915)	5,500	(4,415)
TOTAL ID#2 EXPENSES	13,264	12,179	1,085	1,085	3,000	(1,915)	151,650	(150,565)
<b>NET OPERATING REVENUE/EXPENSE</b>	<b>2,261</b>	<b>3,346</b>	<b>(1,085)</b>	<b>61,015</b>	<b>59,100</b>	<b>1,915</b>	<b>34,650</b>	<b>26,365</b>
NON-OPERATING SOURCE OF FUNDS:								
INTEREST INCOME	(83)	60	(143)	115	240	(125)	720	(605)
TOTAL NON-OPER SOURCE OF FUNDS	(83)	60	(143)	115	240	(125)	720	(605)
<b>TOTAL REVENUE/EXPENSE</b>	<b>2,178</b>	<b>3,406</b>	<b>(1,228)</b>	<b>61,130</b>	<b>59,340</b>	<b>1,790</b>	<b>35,370</b>	<b>25,760</b>
TRANSFER TO CAPITAL FUND-REPLACEMENT				17,927				
TRANSFER TO CAPITAL FUND-IMPROVEMENT				43,203				
				-				
<b><i>ID #2 FUND BALANCE:</i></b>								
ENDING FUNDS AVAILABLE 2015-2016	130,874							
TRANSFER FOR CAPITAL FUND REPLACEMENT	17,927							
TRANSFER FOR CAPITAL IMPROVEMENTS	-							
CAPITAL IMPROVEMENT-PLANT REMOVAL	-							
TOTAL FUNDS AVAILABLE	148,801							

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET 2017-2018	BUDGET REMAINING
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE		
<b><u>NON-POTABLE WATER DEPARTMENT</u></b>								
OPERATING REVENUE:								
RECYCLED/NON-POTABLE WATER SALES	162,379	160,000	2,379	671,398	736,000	(64,602)	1,600,000	(928,602)
RECYCLED/ NON-POT WATER FIXED CHARGE	24,612	16,500	8,112	83,885	66,000	17,885	200,000	(116,115)
RECYCLED/NON-POTABLE PUMPING CHARGE	3,310	3,400	(90)	13,240	13,600	(360)	40,000	(26,760)
MISC INCOME	-	-	-	-	-	-	12,000	(12,000)
TOTAL NON-POTABLE REVENUE	190,301	179,900	10,401	768,523	815,600	(47,077)	1,852,000	(1,083,477)
OPERATING EXPENSES:								
RECYCLED/NON-POTABLE LABOR EXP	5,438	5,700	(262)	21,470	21,800	(330)	100,000	(78,530)
PAYROLL TAXES EXP	83	130	(47)	327	420	(93)	1,700	(1,373)
EMPLOYEE BENEFITS-INS	647	840	(193)	2,558	3,360	(802)	10,000	(7,442)
EMPLOYEE BENEFITS-RETIREMENT	791	1,100	(309)	3,127	4,400	(1,273)	14,000	(10,873)
MILEAGE EXP	-	20	(20)	-	70	(70)	200	(200)
OVERTIME EXP	379	350	29	2,256	1,400	856	4,000	(1,744)
VACATION EXP	156	225	(69)	888	900	(12)	5,100	(4,212)
SCADA SYS EXP	-	560	(560)	1,548	2,240	(692)	6,800	(5,252)
LABORATORY TESTING COSTS	-	250	(250)	-	1,000	(1,000)	3,000	(3,000)
EQUIPMENT REPAIRS & MAINT.	-	8,300	(8,300)	48,393	33,200	15,193	100,000	(51,607)
NONPOTABLE WATER LINE REPAIR	-	8,300	(8,300)	15,908	33,200	(17,292)	100,000	(84,092)
SECURITY AND ALARM EXP	-	-	-	-	250	(250)	1,000	(1,000)
PROPERTY MAINTENANCE	-	420	(420)	305	1,680	(1,375)	5,000	(4,695)
ENERGY COSTS	17,058	27,500	(10,442)	94,738	126,500	(31,762)	275,000	(180,262)
CONSUMABLE SUPPLIES EXP	-	-	-	351	100	251	350	1
CHEMICALS, LUBRICANTS & FUELS	260	1,000	(740)	704	1,000	(296)	3,000	(2,296)
PERMITS AND FEES EXP	-	500	(500)	126	2,000	(1,874)	6,000	(5,874)
SERVICE METERS AND PARTS COSTS	-	600	(600)	-	2,400	(2,400)	7,000	(7,000)
RECYCLED SIGN/TOOLS EXP	-	-	-	3,954	3,000	954	3,000	954
MISC OPERATING EXP	-	100	(100)	-	200	(200)	500	(500)
POTABLE WATER EXP	-	37,500	(37,500)	-	112,500	(112,500)	150,000	(150,000)
BAD DEBT	-	-	-	-	-	-	1,600	(1,600)
CONTINGENCIES	-	1,600	(1,600)	-	6,400	(6,400)	20,000	(20,000)
TOTAL OPERATING EXPENSES	24,812	94,995	(70,183)	196,653	358,020	(161,367)	817,250	(620,597)

**TEMESCAL VALLEY WATER DISTRICT  
REVENUE AND EXPENDITURES/BUDGET  
For Three Months ending September 30, 2017**

REVISED

	OCTOBER			YEAR TO DATE			BUDGET	BUDGET
	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	VARIANCE	2017-2018	REMAINING
<b>ADMINISTRATIVE EXPENSES:</b>								
CONTRACT MANAGEMENT	5,188	5,300	(112)	18,806	19,100	(294)	62,500	(43,694)
GENERAL ENGINEERING/ PLAN CHECK EXP	1,838	1,250	588	2,538	5,000	(2,462)	15,000	(12,462)
INSPECTION EXP		-	-		1,250	(1,250)	5,000	(5,000)
EMPLOYEE BENEFITS-INS	868	925	(57)	3,697	3,700	(3)	11,000	(7,303)
EMPLOYEE BENEFITS-RETIREMENT	1,061	1,100	(39)	4,518	4,400	118	14,000	(9,482)
WAGES EXPENSE	6,864	7,300	(436)	25,679	26,200	(521)	94,000	(68,321)
VACATION EXP	199	225	(26)	1,124	1,750	(626)	6,300	(5,176)
MILEAGE EXP	-	20	(20)	-	80	(80)	200	(200)
OVERTIME EXP	-	50	(50)	-	200	(200)	500	(500)
PAYROLL TAX EXPENSE	119	150	(31)	492	600	(108)	2,000	(1,508)
CONTRACT STAFFING EXP	-	-	-	-	-	-	2,000	(2,000)
LEGAL EXPENSE	-	625	-	619	2,500	(1,881)	7,500	(6,881)
AUDIT EXP	-	4,000	(4,000)	-	4,000	(4,000)	4,000	(4,000)
BOARD FEES EXP	178	375	(197)	837	1,500	(663)	4,500	(3,663)
ELECTION EXP	-	580	(580)	1,905	2,320	(415)	7,000	(5,095)
COMPUTER SYSTEMS EXP	-	830	(830)	-	3,320	(3,320)	10,000	(10,000)
BANK CHARGES	793	545	248	3,314	2,180	1,134	6,500	(3,186)
TELEPHONE EXP	640	650	(10)	2,059	2,600	(541)	7,600	(5,541)
OFFICE SUPPLIES	453	375	78	2,251	1,500	751	4,500	(2,249)
PRINTING EXP	-	-	-	-	1,000	(1,000)	3,000	(3,000)
POSTAGE EXP	549	700	(151)	2,354	2,800	(446)	8,500	(6,146)
PUBLICATION EXP	-	250	(250)	376	1,000	(624)	3,000	(2,624)
EQUIPMENT LEASE EXP	-	250	(250)	512	1,000	(488)	3,000	(2,488)
INSURANCE EXPENSE	1,116	1,250	(134)	5,132	5,000	132	15,000	(9,868)
ANNUAL ASSESSMENT EXP	-	-	-	-	2,500	(2,500)	2,500	(2,500)
INVESTMENT EXPENSE	-	250	(250)	750	1,000	(250)	3,000	(2,250)
COMMUNITY OUTREACH EXP	-	400	(400)	-	1,600	(1,600)	4,800	(4,800)
MISC & EDUCATION EXP	-	100	(100)	322	400	(78)	1,000	(678)
JPA EXPENSE(GSA FOR BEDFORD/COLDWATER)	-	-	-	-	-	-	-	-
<b>TOTAL ADMINISTRATIVE EXPENSES</b>	<b>19,866</b>	<b>27,500</b>	<b>(7,009)</b>	<b>77,285</b>	<b>98,500</b>	<b>(21,215)</b>	<b>307,900</b>	<b>(230,615)</b>
<b>TOTAL NON-POTABLE OPERATING EXPENSES</b>	<b>44,678</b>	<b>122,495</b>	<b>(77,817)</b>	<b>273,938</b>	<b>456,520</b>	<b>(182,582)</b>	<b>1,125,150</b>	<b>(851,212)</b>
<b>NET OPERATING REVENUE/EXPENSE</b>	<b>145,623</b>	<b>57,405</b>	<b>88,218</b>	<b>494,585</b>	<b>359,080</b>	<b>135,505</b>	<b>726,850</b>	<b>(232,265)</b>
<b>NON-OPERATING SOURCE OF FUNDS:</b>								
INTEREST INCOME	(457)	450	(907)	631	1,800	(1,169)	5,300	(4,669)
<b>TOTAL NON-OP SOURCE OF FUNDS</b>	<b>(457)</b>	<b>450</b>	<b>(907)</b>	<b>631</b>	<b>1,800</b>	<b>(1,169)</b>	<b>5,300</b>	<b>(4,669)</b>
<b>TOTAL REVENUE/EXPENSE</b>	<b>145,166</b>	<b>57,855</b>	<b>87,311</b>	<b>495,216</b>	<b>360,880</b>	<b>134,336</b>	<b>732,150</b>	<b>(236,934)</b>
TRANSFER TO CAPITAL FUND-REPLACEMENT				105,193				
TRANSFER TO CAPITAL FUND-IMPROVEMENT				390,023				
CONNECTION FEES				-				
				-				
<b>NON-POTABLE FUND BALANCE:</b>								
ENDING FUNDS AVAILABLE 2015-2016	2,094,839							
TRANSFER FOR CAPITAL FUND REPLACEMENT	105,193							
TRANSFER FOR CAPITAL IMPROVEMENTS	390,023							
CAPITAL IMPROVEMENT (SEE ATTACHED DETAIL)	(109,800)							
<b>TOTAL FUNDS AVAILABLE</b>	<b>2,480,255</b>							

**TEMESCAL VALLEY WATER DISTRICT**  
**Community Facilities District No. 1**  
**Financing Authority**  
**(Sycamore Creek)**  
**10/31/2017**

Special Tax Fund (Acct #105636-009)  
Account Balance at Wilmington Trust \$ 440.68

---

BONDS PR ACCT (Acct # 105636-010)  
Account Balance at Wilmington Trust -

---

Administrative Expense Fund(Acct #105636-011)  
Account Balance at Wilmington Trust 1.42

---

Surplus Fund (Acct #105636-012)  
Account Balance at Wilmington Trust 1,469,933.41

---

Re-call Fund (Acct #105636-025)  
Account Balance at Wilmington Trust -

---

**TOTAL \$ 1,470,375.51**



**TEMESCAL VALLEY WATER DISTRICT**  
**Community Facilities District No. 2**  
**Financing Authority**  
**(Montecito Ranch)**  
**10/31/2017**

Special Tax Fund (Acct #105636-014)  
Account Balance at Wilmington Trust \$ 68.22

---

BONDS PR ACCT (Acct # 105636-015)  
Account Balance at Wilmington Trust -

---

Administrative Expense Fund(Acct #105636-016)  
Account Balance at Wilmington Trust 1.33

---

Surplus Fund (Acct #105636-017)  
Account Balance at Wilmington Trust 458,747.30

---

TOTAL \$ **458,816.85**

**TEMESCAL VALLEY WATER DISTRICT**  
**Community Facilities District No. 3**  
**Financing Authority**  
**(The Retreat)**  
**10/31/2017**

<u>Special Tax Fund (Acct #105636-019)</u> Account Balance at Wilmington Trust	\$ 284.94
<hr/>	
<u>BONDS PR ACCT (Acct # 105636-020)</u> Account Balance at Wilmington Trust	-
<hr/>	
<u>Administrative Expense Fund(Acct #105636-021)</u> Account Balance at Wilmington Trust	1.42
<hr/>	
<u>Surplus Fund (Acct #105636-022)</u> Account Balance at Wilmington Trust	1,069,155.59
<hr/>	
<b>TOTAL</b>	<b>\$ 1,069,441.95</b>

**TEMESCAL VALLEY WATER DISTRICT  
Community Facilities District  
Financing Authority**

**10/31/2017**

Senior Lien Bonds - Revenue Fund (Acct #105636-000)	\$	-
- Lien Interest A/C ( Acct #105636-001)		5,948.14
- Lien Principal A/C (Acct #105636-002)		-
- Financing Authority Surplus A/C (Acct #105636-003)		-
- Reserve Fund CFD #1 (Acct #105636-004)		2,266,082.34
- Reserve Fund CFD #2 (Acct #105636-005)		276,132.38
- Reserve Fund CFD #3 (Acct #105636-006)		1,495,890.18
Junior Lien Bonds - Revenue Fund (Acct #105639-000)	\$	0.01
- Lien Interest A/C ( Acct #105639-001)		63,812.65
- Lien Principal A/C (Acct #105639-002)		-
- Financing Authority Surplus A/C (Acct #105639-003)		-
- Reserve Fund CFD #1 (Acct #105639-004)		619,196.99
- Reserve Fund CFD #2 (Acct #105639-005)		100,198.65
- Reserve Fund CFD #3 (Acct #105639-006)		540,991.84
<b>TOTAL</b>		
	<b>\$</b>	<b>5,368,253.18</b>

Temescal Valley Water District  
Capital Projects  
Yearly Miscellaneous and Multi - Year

FY 2017/2018 Maintenance/ General Projects	Total Cost	Source of Funding			Previous YRS	AS OF OCTOBER 30, 2017 EXPENDITURES			Total YTD	Variance
		Sewer Fund	Water Fund	Recycled Fund		Sewer Fund	Water Fund	Recycled Fund		
Computer and Software Upgrades	\$ 25,000	\$ 10,000	\$ 8,750	\$ 6,250	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000
General Building Improvements	\$ 40,000	\$ 16,000	\$ 14,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,000
Convert to Recycled	\$ 135,000	\$ -	\$ 75,000	\$ 60,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 135,000
Replace VFD	\$ 40,000	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,000
Sewer Management Plan Update	\$ 45,000		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 45,000
New Generator design	\$ 54,150	\$ 54,150	\$ -	\$ -	\$ 40,595	\$ 586	\$ -	\$ -	\$ 586	\$ 12,969
Park Canyon RW Design and Easements	\$ 90,000	\$ -	\$ -	\$ 90,000	\$ 17,074	\$ -	\$ -	\$ -	\$ -	\$ 72,926
Air Actuator valves	\$ 42,000	\$ 42,000	\$ -	\$ -	\$ -	\$ 208	\$ -	\$ -	\$ -	\$ 42,000
Subtotal Maintenance and General	\$ 471,150	\$ 162,150	\$ 97,750	\$ 166,250	\$ 57,669	\$ 794	\$ -	\$ -	\$ 586	\$ 412,895
<b>Multiple Fiscal Year Projects</b>										
Recycled and Non-potable Pipeline extentions	\$ 722,000	\$ -	\$ -	\$ 700,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 722,000
Upgrade STP PLCs	\$ 250,000	\$ 100,000	\$ 87,500	\$ 62,500	\$ 211,952	\$ -	\$ -	\$ -	\$ -	\$ 38,048
WRF 225,000 GPD Upgrade (Generator)	\$ 1,230,000	\$ 123,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,230,000
GIS Mapping - Water Sewer RW pipelines and facilities	\$ 171,700	\$ 66,000	\$ 66,000	\$ 39,700	\$ 48,522	\$ 2,826	\$ 2,826	\$ -	\$ 5,652	\$ 117,526
Well Rehab	\$ 125,000	\$ -	\$ 50,000	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 125,000
SCADA Standardization	\$ 35,000	\$ 15,000	\$ 15,000	\$ 5,000	\$ 28,371	\$ -	\$ -	\$ -	\$ -	\$ 6,629
SCADA Tower	\$ 60,000	\$ 30,000	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 60,000
Groundwater Study and Development (inc GSA)	\$ 428,000	\$ -	\$ 60,000	\$ 368,000	\$ -	\$ -	\$ 17,875	\$ 109,800	\$ 127,675	\$ 300,325
Alternate Tertiary Percolation Area	\$ 320,000	\$ 300,000		\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 320,000
Dawson Canyon Potable Reservoir Design	\$ 160,000	\$ -	\$ 160,000	\$ -	\$ 17,177	\$ -	\$ 39,710	\$ -	\$ 39,710	\$ 103,113
Urban Water Management Plan	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ 3,368	\$ -	\$ 29,788	\$ -	\$ 29,788	\$ 66,844
Subtotal Multiple Year	\$ 3,601,700	\$ 634,000	\$ 568,500	\$ 1,270,200	\$ 309,390	\$ 2,826	\$ 90,199	\$ 109,800	\$ 202,825	\$ 3,089,485
<b>TOTAL</b>	<b>\$ 4,072,850</b>	<b>\$ 796,150</b>	<b>\$ 666,250</b>	<b>\$ 1,436,450</b>	<b>\$ 367,059</b>	<b>\$ 3,620</b>	<b>\$ 90,199</b>	<b>\$ 109,800</b>	<b>\$ 203,619</b>	<b>\$ 3,502,380</b>



**JOHN CHIANG  
TREASURER  
STATE OF CALIFORNIA**



**PMIA Performance Report**

Date	Daily Yield*	Quarter to Date Yield	Average Maturity (in days)
10/23/17	1.15	1.14	189
10/24/17	1.15	1.14	187
10/25/17	1.15	1.14	186
10/26/17	1.16	1.14	187
10/27/17	1.16	1.14	195
10/28/17	1.16	1.14	195
10/29/17	1.16	1.14	195
10/30/17	1.16	1.14	190
10/31/17	1.16	1.14	184
11/01/17	1.16	1.14	191
11/02/17	1.16	1.14	195
11/03/17	1.16	1.14	195
11/04/17	1.16	1.15	195
11/05/17	1.16	1.15	195
11/06/17	1.16	1.15	194
11/07/17	1.16	1.15	196
11/08/17	1.16	1.15	197
11/09/17	1.17	1.15	198
11/10/17	1.17	1.15	197
11/11/17	1.17	1.15	197
11/12/17	1.17	1.15	197
11/13/17	1.17	1.15	194
11/14/17	1.17	1.15	193
11/15/17	1.17	1.15	196
11/16/17	1.17	1.15	196
11/17/17	1.17	1.15	192
11/18/17	1.17	1.15	192
11/19/17	1.17	1.15	192
11/20/17	1.18	1.15	190
11/21/17	1.18	1.15	188
11/22/17	1.18	1.15	184

\*Daily yield does not reflect capital gains or losses

[View Prior Month Daily Rates](#)

**LAIF Performance Report**

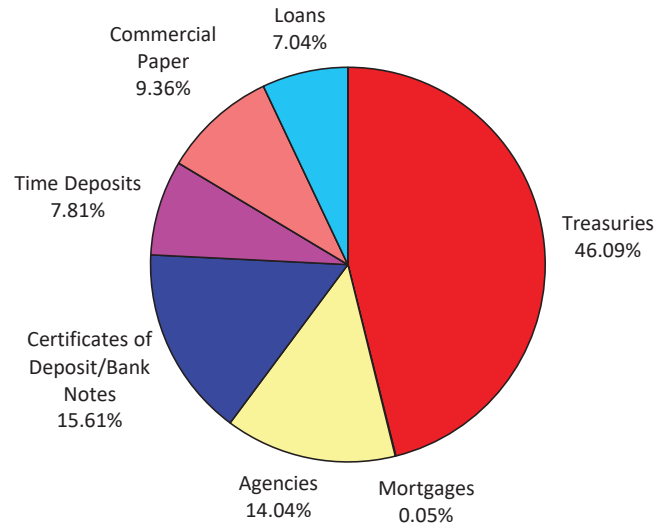
**Quarter Ending 09/30/17**

Apportionment Rate: 1.07%  
 Earnings Ratio: .00002942867511750  
 Fair Value Factor: .999042071  
 Daily: 1.11%  
 Quarter to Date: 1.08%  
 Average Life: 190

**PMIA Average Monthly Effective Yields**

**Oct 2017 1.143**  
 Sept 2017 1.111  
 Aug 2017 1.084

**Pooled Money Investment Account  
Portfolio Composition  
10/31/17  
\$72.4 billion**



# Active Lien Board Update

**Balance as of 10/24/17:** \$12,087.48

**Payments received:** \$124.57

**New liens recorded:**

## **ACTIVE**

Active liens value \$1,239.37

Number of active liens 7

## **WRITTEN OFF**

Written off liens value \$10,723.54

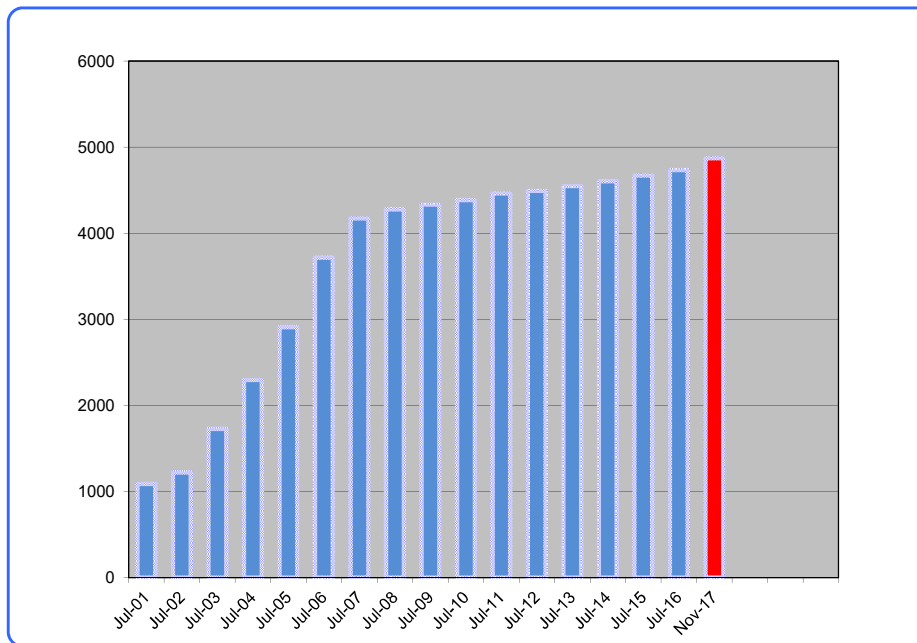
Number of written off liens 53

**Released liens 6/13/07 - 11/28/17:** \$172,279.47

## TEMESCAL VALLEY WATER DISTRICT CUSTOMER COUNT PER YEAR(RESIDENTIAL)

(Excludes SID#1 and SID#2 sewer customers)

DATE	Jul-01	Jul-02	Jul-03	Jul-04	Jul-05	Jul-06	Jul-07	Jul-08	Jul-09	Jul-10	Jul-11	Jul-12	Jul-13	Jul-14	Jul-15	Jul-16	Nov-17
CUSTOMERS	1090	1223	1729	2295	2910	3718	4173	4279	4332	4386	4463	4492	4547	4605	4670	4736	4871



RESIDENTIAL	Total Homes	Completed Homes	
Wildrose Ranch	1043	1043	100%
Trilogy at Glen Ivy	1317	1317	100%
Painted Hills	204	204	100%
Canyon Oaks	26	26	100%
Montecito Ranch	305	305	100%
Sycamore Creek	1748	1431	82%
The Retreat	525	517	98%
Terramor	1443	28	0% 6 MODELS
	<u>6611</u>	<u>4871</u>	74%

**TOTAL CUSTOMER COUNT REPORT**  
**October 31, 2017**

	Water & Sewer	Water Only	Sewer Only	Count
New homes added 8 Accts closed/transf 41 Empty Homes 3			Butterfield (305) Calif. Meadows (345)	
Residential	4980	2	650	5632
Commercial	86	0	2	88
Commercial-fireheld inactive	41			41
Public Govt	4	1	0	5
Irrigation-Industrial	0	66	0	66
Non-Potable Water other	0	140	0	140
Construction-Bulk Sales	0	16	0	16
Total Active Customers				

**DELINQUENT REPORT**

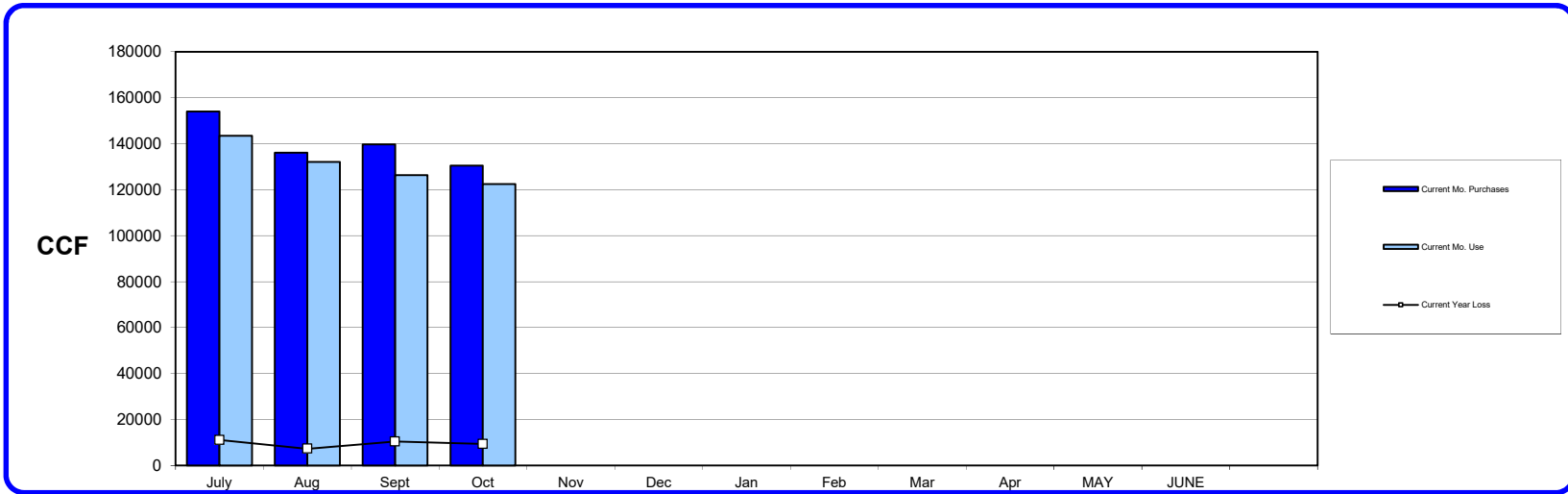
Meters Read - Customers Billed	<b>5295</b>	
Received Delinquent Notice on current bill	492	9.29%
Turned Off for lack of payment	15	0.28%
Customers turned back on, amount paid	15	0.28%



## WATER USAGE REPORT FOR FY 2017-2018

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
Beg Water Levels	10837	10333	7035	9975								
Ending Water Levels	10333	7035	9975	8641								
Cur Yearly Purchases	153973	136030	139591	130347								
Cur Yr Monthly Use	143377	132059	126247	122417								
GAIN/LOSS (UNITS)	11100	7269	10404	9264								

TOTAL
559941
524100
38037

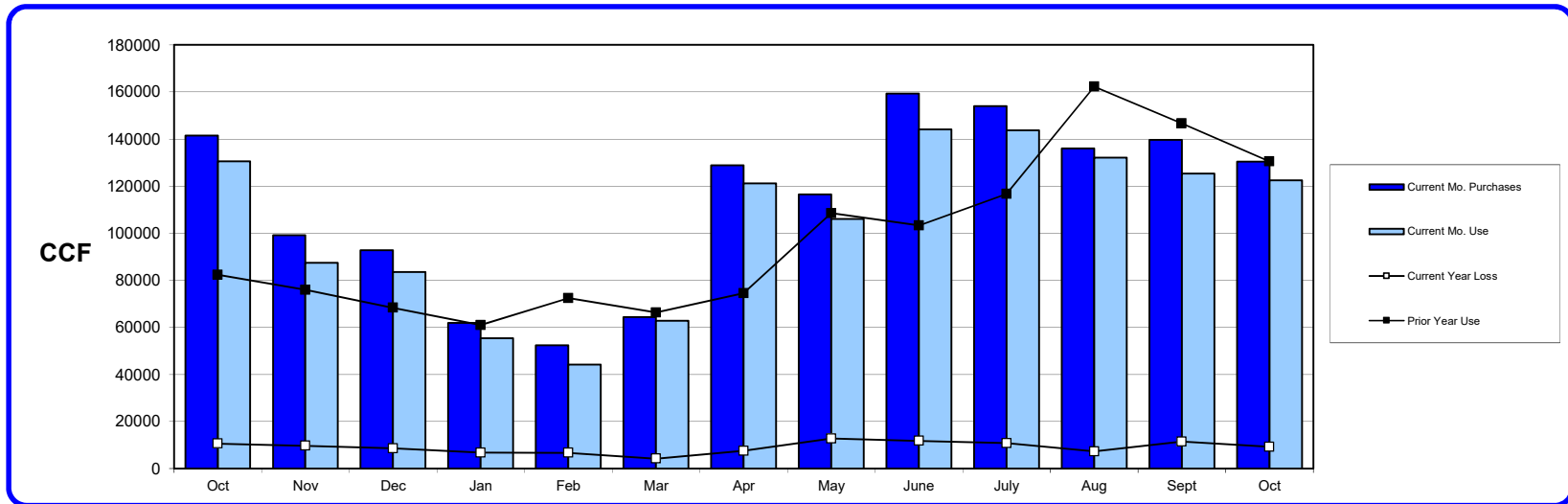


YEAR	%
2014-2015	-5.61
2015-2016	-4.83
2016-2017	-8.01

SUMMARY		CCF
Beginning Water in System		10837 CCF
Water Purchased		559941 CCF
Water Used		524100 CCF
Water Remaining in System		8641 CCF
(Loss)/Gain FY to date		(38037) CCF
		<b>-6.79%</b>

## WATER USAGE REPORT FOR THIRTEEN MONTHS

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	TOTAL
Beg Water Levels	7982	8320	10346	11057	10830	12304	9691	9757	7421	10837	10333	7035	9975	
Ending Water Levels	8320	10346	11057	10830	12304	9691	9757	7421	10837	10333	7035	9975	8641	
Cur Yearly Purchases	141397	99087	92774	61904	52287	64302	128743	116454	159241	153973	136030	139591	130347	1476130
Cur Yr Monthly Use	130468	87384	83501	55396	44125	62713	121182	106003	144053	143645	132059	125247	122417	1358193
Prior Yr Monthly Use	82309	75904	68282	60973	72419	66313	74479	108426	103216	116641	162272	146618	130468	1268320



### SUMMARY

CCF

Beginning Water in System 7982 CCF  
 Water Purchased in last 13 months 1476130 CCF  
 Water Used in last 13 months 1358193 CCF  
 Water Remaining in System 8641 CCF  
 (Loss)/Gain over last 13 months (117278) CCF

**-7.94%**

#### KEY

2015-2016

2016-2017

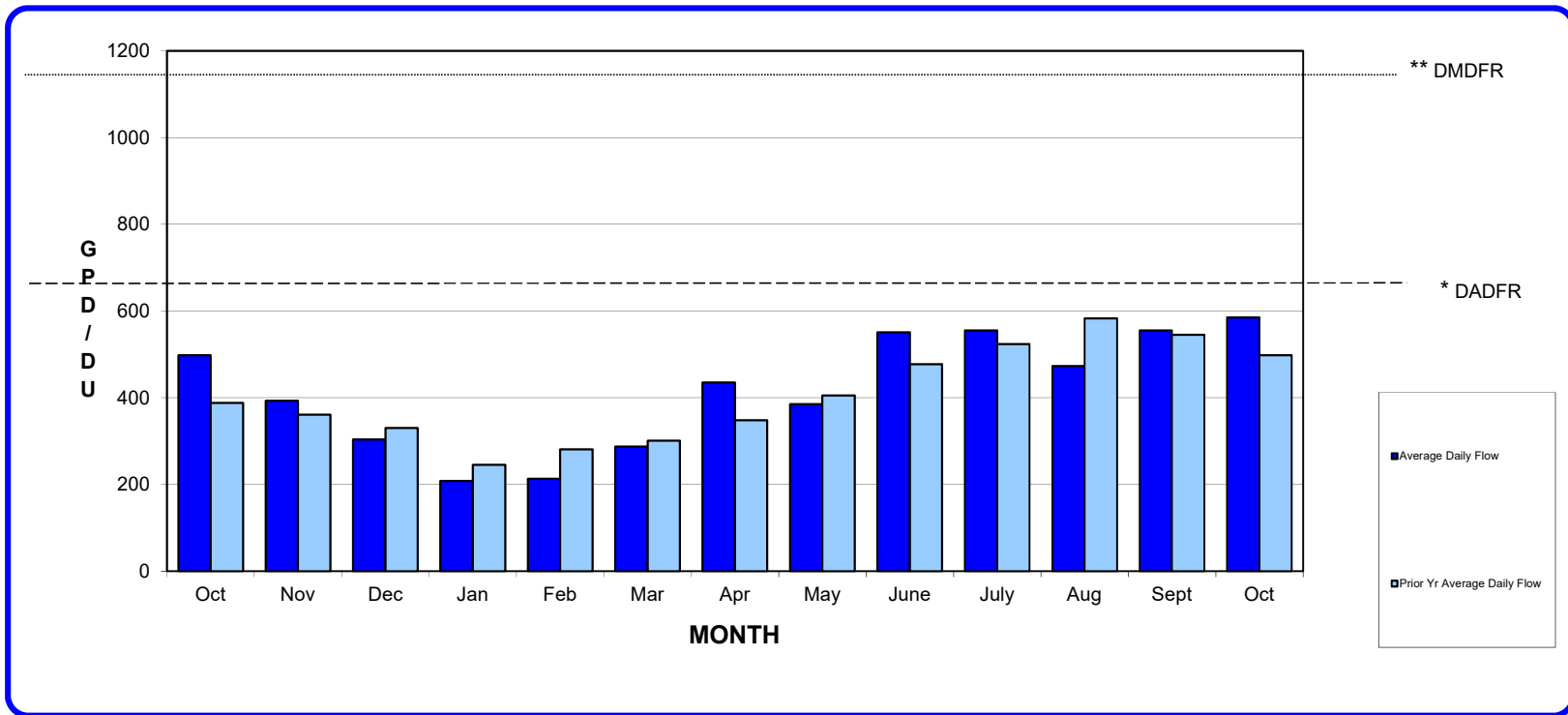
2017-2018

# RESIDENTIAL WATER USAGE

## AVERAGE DAILY FLOW

(GALLONS per DAY per RESIDENTIAL DWELLING UNIT CONNECTED)

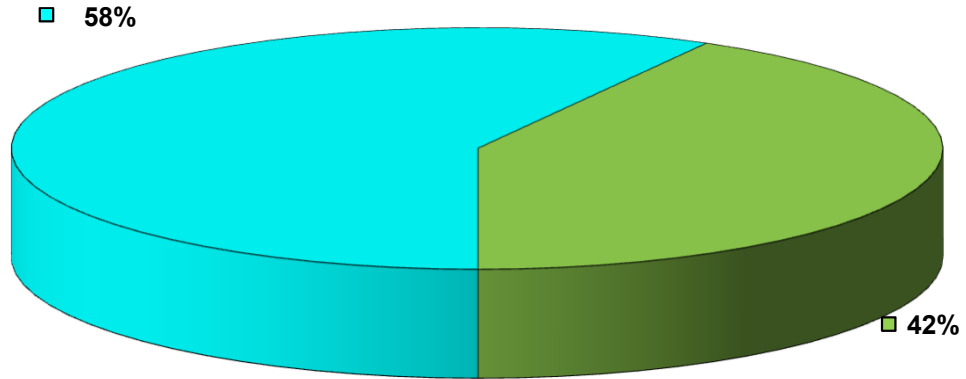
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	YEARLY AVERAGE
Average Daily Flow	498	393	304	208	213	287	435	385	551	555	473	555	585	412
Prior Yr Average Daily Flow	388	361	330	245	281	301	348	405	477	524	583	545	498	408



**Key**  
 2015-2016  
 2016-2017  
 2017-2018

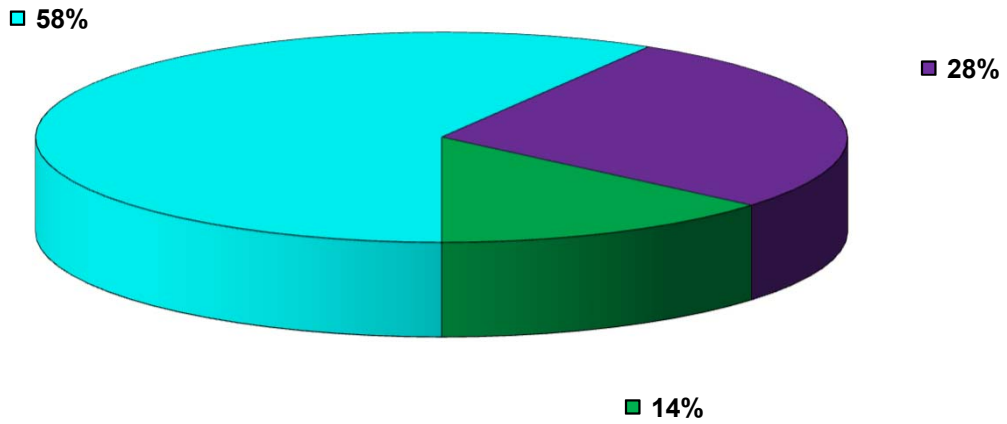
\* DESIGN AVERAGE DAILY FLOW RATE IN GPD (650)  
 \*\* DESIGN MAXIMUM DAILY FLOW RATE IN GPD (1140)

**Temescal Valley Water District  
Volume of Water Sold  
For Three Months Ending Sept 30, 2017  
F/Y 2017-2018**



POTABLE NON-POTABLE

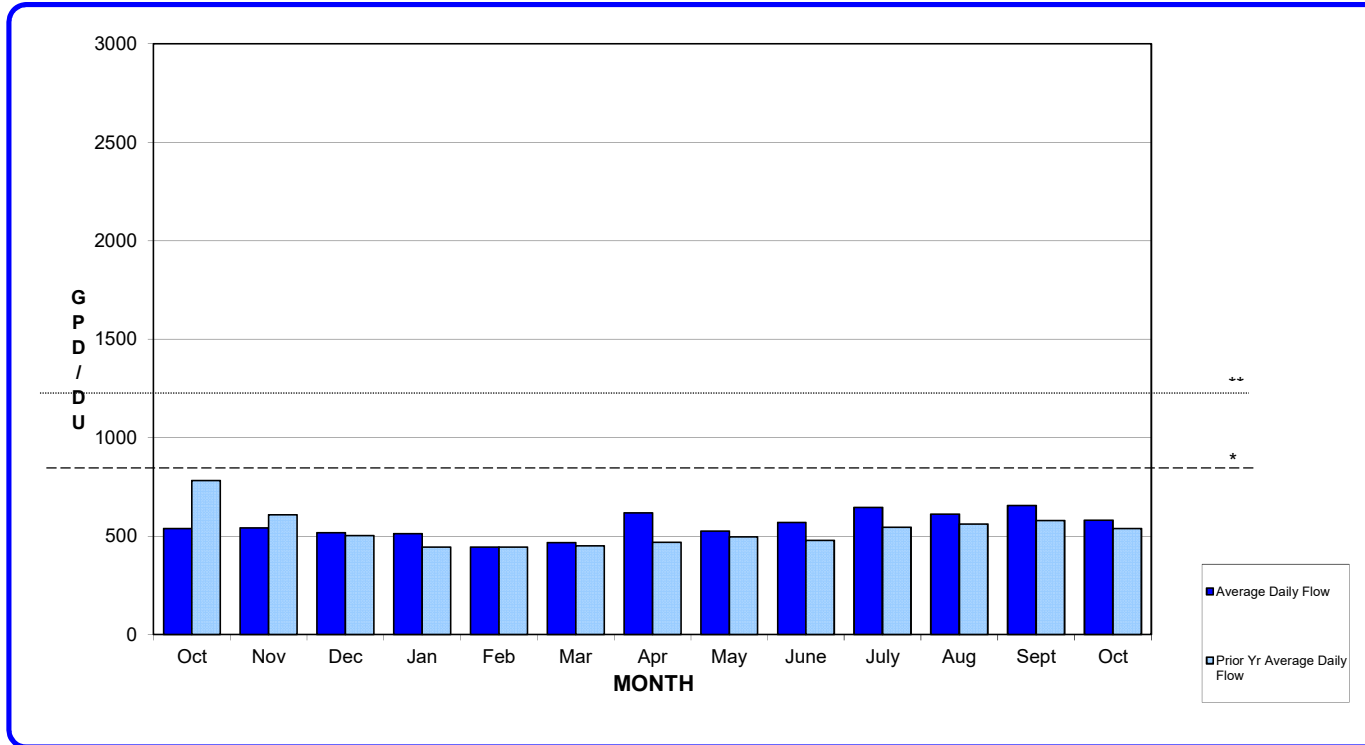
**Temescal Valley Water District  
Water Volume Sold  
For F/Y 2016-2017  
Twelve Months**



POTABLE RECYCLED NON-POTABLE

## COMMERCIAL WATER USAGE AVERAGE DAILY FLOW (GALLONS per DAY per COMMERCIAL DWELLING UNIT CONNECTED)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	YEARLY AVERAGE
Average Daily Flow	539	542	518	512	445	467	618	525	569	646	612	656	580	558
Prior Yr Average Daily Flow	782	608	503	444	444	451	469	496	478	546	561	579	539	874

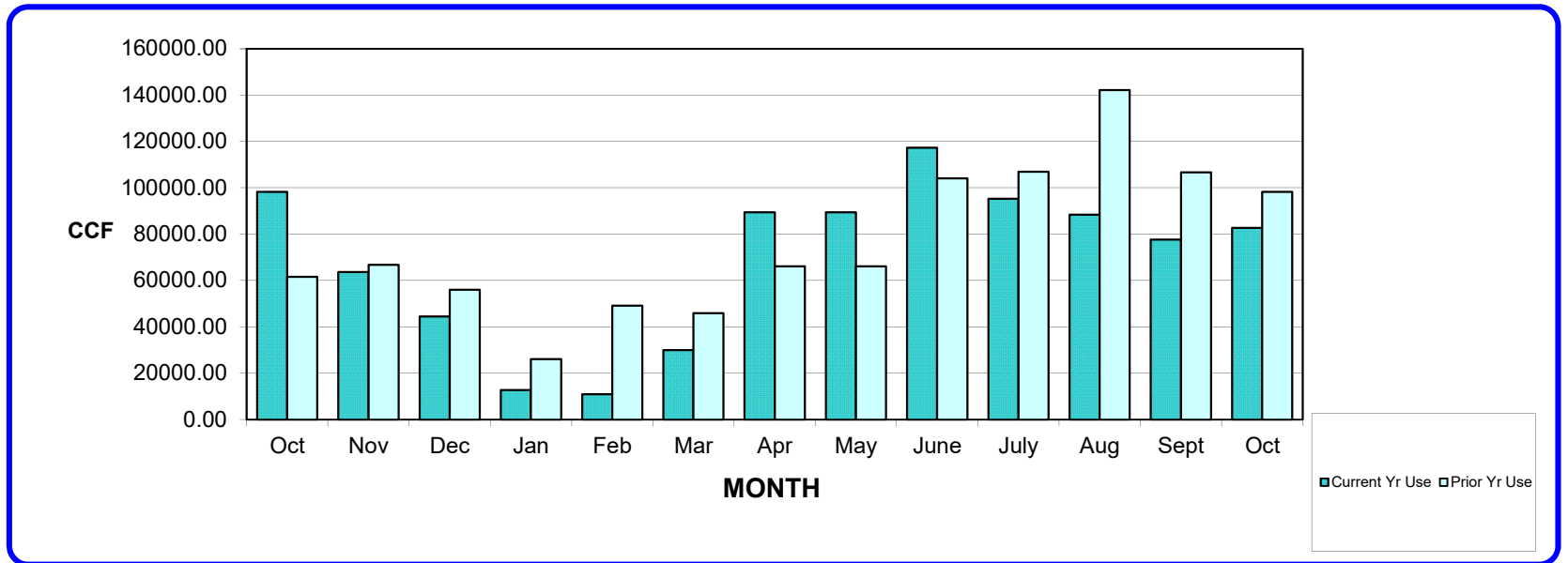


Key
2015-2016
2016-2017
2017-2018

- \* DESIGN AVERAGE DAILY FLOW RATE IN GPD (650)
- \*\* DESIGN MAXIMUM DAILY FLOW RATE IN GPD (1140)

## RECYCLED AND NON-POTABLE WELL WATER MONTHLY FLOW (ccf)

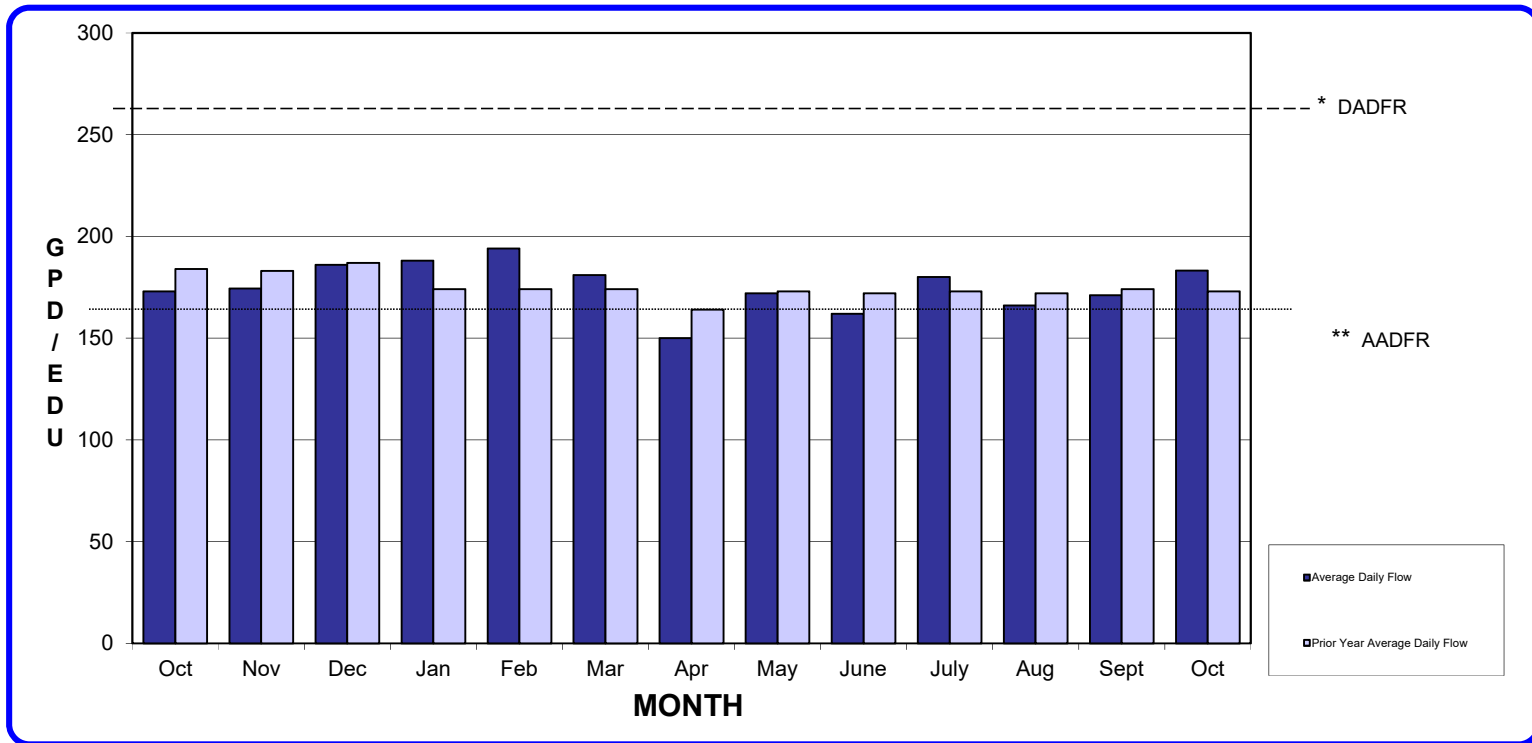
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
<b>Current Yr Use</b>	98261.40	63655.96	44418.02	12663.02	10972.41	29977.05	89476.06	89476.06	117228.16	95220.93	88355.76	77651.75	82662.81
<b>Prior Yr Use</b>	61621.08	66739.00	56050.32	26122.81	49169.19	45887.67	66124.51	66124.51	104019.74	106957.12	142210.12	106718.90	98261.40
<b>Revenue</b>	\$169,073	\$112,792	\$76,130	\$21,401	\$17,384	\$59,951	\$203,970	\$167,723	\$231,786	\$200,946	\$175,828	\$158,379	\$158,379



Key	
2015-2016	2016-2017
2016-2017	2017-2018

## RESIDENTIAL & COMMERCIAL SEWER USAGE AVERAGE DAILY FLOW (GALLONS per DAY per DWELLING UNIT)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	12-Month Average
Average Daily Flow	173	174	186	188	194	181	150	172	162	180	166	171	183	190
Prior Year Average Daily Flow	184	183	187	174	174	174	164	173	172	173	172	174	173	174



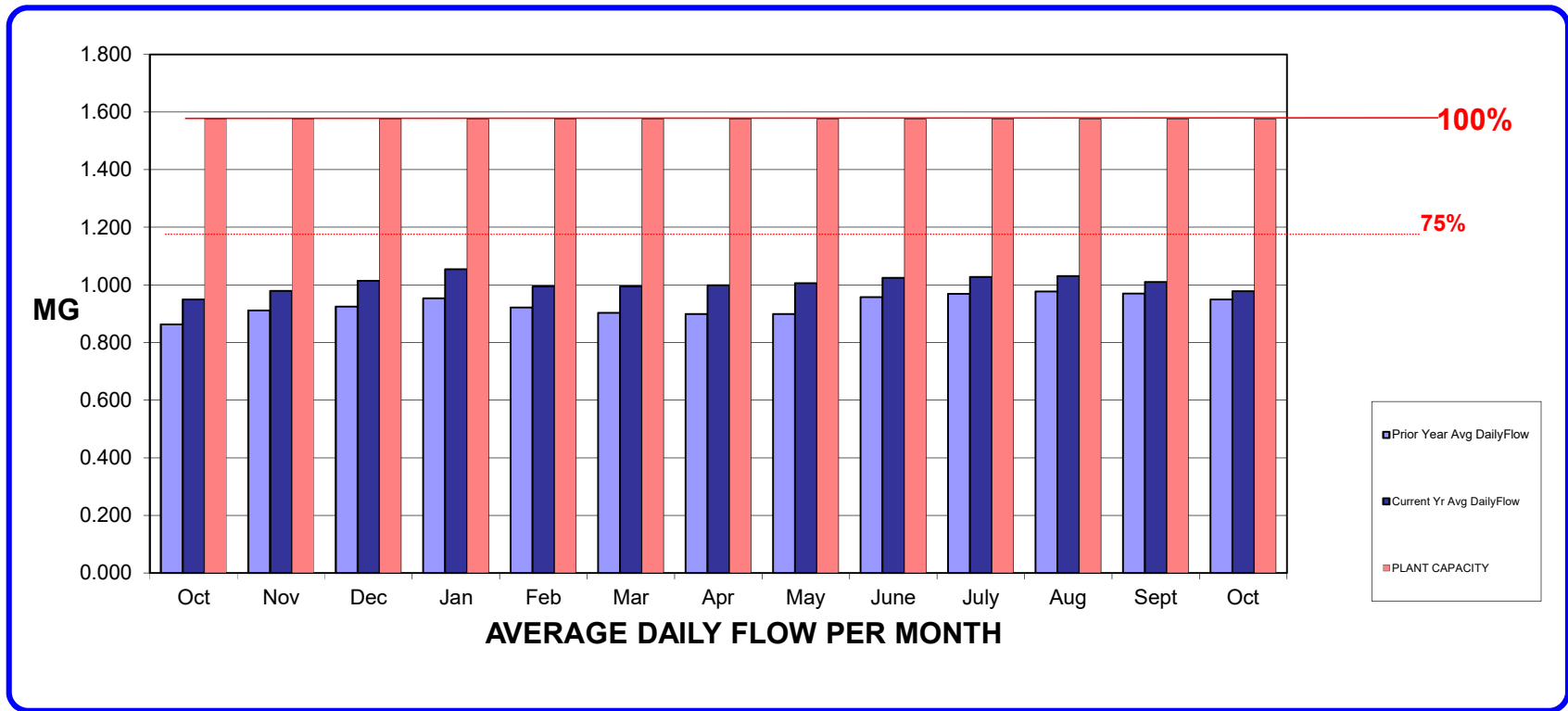
Key
2015-2016
2016-2017
2017-2018

\*\* ACTUAL AVERAGE DAILY FLOW

## RECLAMATION PLANT FLOW REPORT AVERAGE DAILY FLOW (Million Gallons)

Key
2013-2014
2014-2015
2015-2016

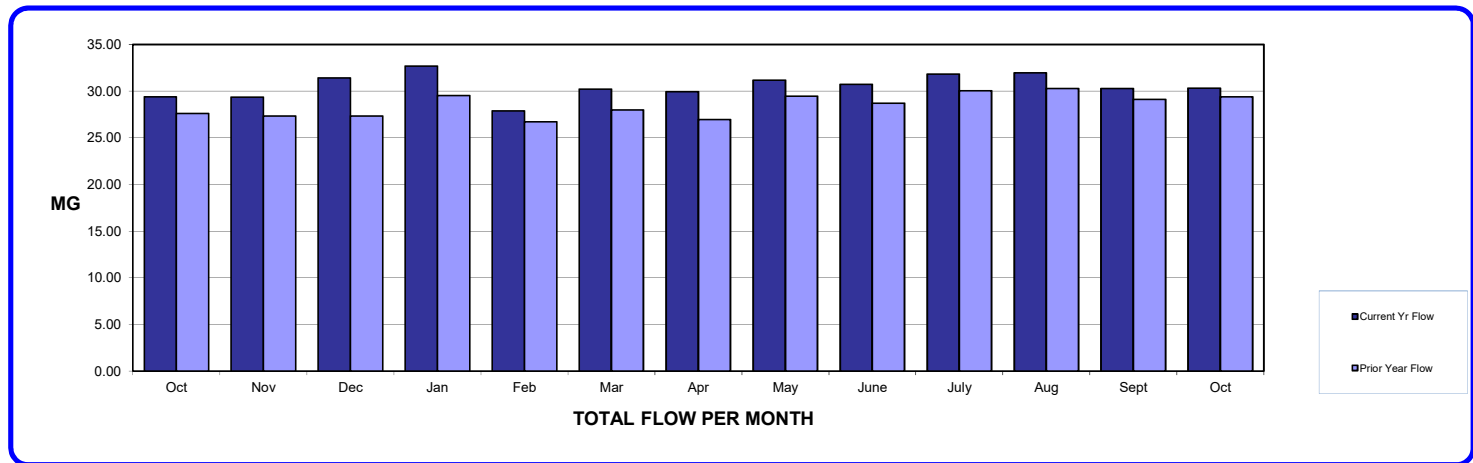
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
Current Yr Avg DailyFlow	0.9490	0.9790	1.0140	1.0540	0.9950	0.9950	0.9990	1.0060	1.0240	1.0270	1.0310	1.0100	0.9780
Prior Year Avg DailyFlow	0.8630	0.9110	0.9240	0.9530	0.9210	0.9030	0.8990	0.8990	0.9570	0.9690	0.9770	0.9700	0.9490
PLANT CAPACITY	1.575	1.575	1.575	1.575	1.575	1.575	1.575	1.575	1.575	1.575	1.575	1.575	1.575





## RECLAMATION PLANT DISCHARGE REPORT MONTHLY FLOW (Million Gallons)

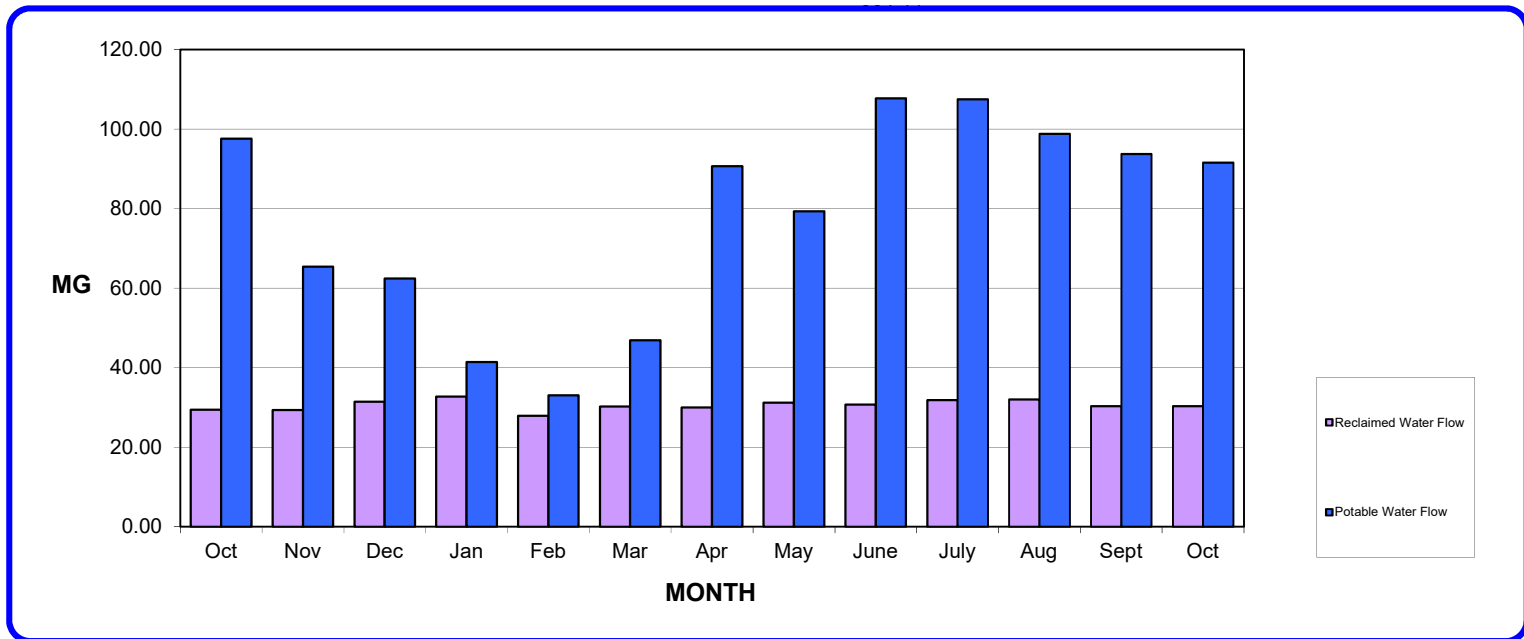
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Total/yr
<b>Current Yr Flow</b>	29.41	29.36	31.42	32.68	27.87	30.22	29.95	31.19	30.73	31.84	31.97	30.30	30.32	367.85
<b>Prior Year Flow</b>	27.60	27.32	27.32	29.54	26.71	27.99	26.96	29.47	28.70	30.03	30.30	29.11	29.41	342.86
<b>Potential Revenue</b>	\$66,439	\$66,324	\$70,978	\$73,831	\$62,958	\$68,260	\$79,667	\$82,965	\$81,742	\$84,694	\$85,032	\$80,598	\$80,651	\$917,701
<b>Current Month Revenue</b>	\$66,439	\$66,324	\$66,324	\$19,313	\$17,384	\$41,008	\$123,254	\$107,511	\$146,772	\$122,817	\$107,694	\$99,273	\$99,273	\$1,016,948
<b>Additional Potential Rev</b>	\$0	\$0	\$4,654	\$54,517	\$45,574	\$27,252	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$131,998



Key
2015-2016
2016-2017
2017-2018

## RECLAIMED WATER VERSUS POTABLE WATER MONTHLY FLOW (Million Gallons)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
<b>No. of Sewer Dwelling Units Connected</b>	5568	5602	5610	5618	5616	5828	5921	5929	5944	5961	5926	5897	5910
<b>Reclaimed Water Flow</b>	29.41	29.36	31.42	32.68	27.87	30.22	29.96	31.19	30.73	31.84	31.97	30.30	30.32
<b>Potable Water Flow</b>	97.59	65.36	62.45	41.44	33.01	46.90	90.64	79.29	107.75	107.45	98.78	93.69	91.57



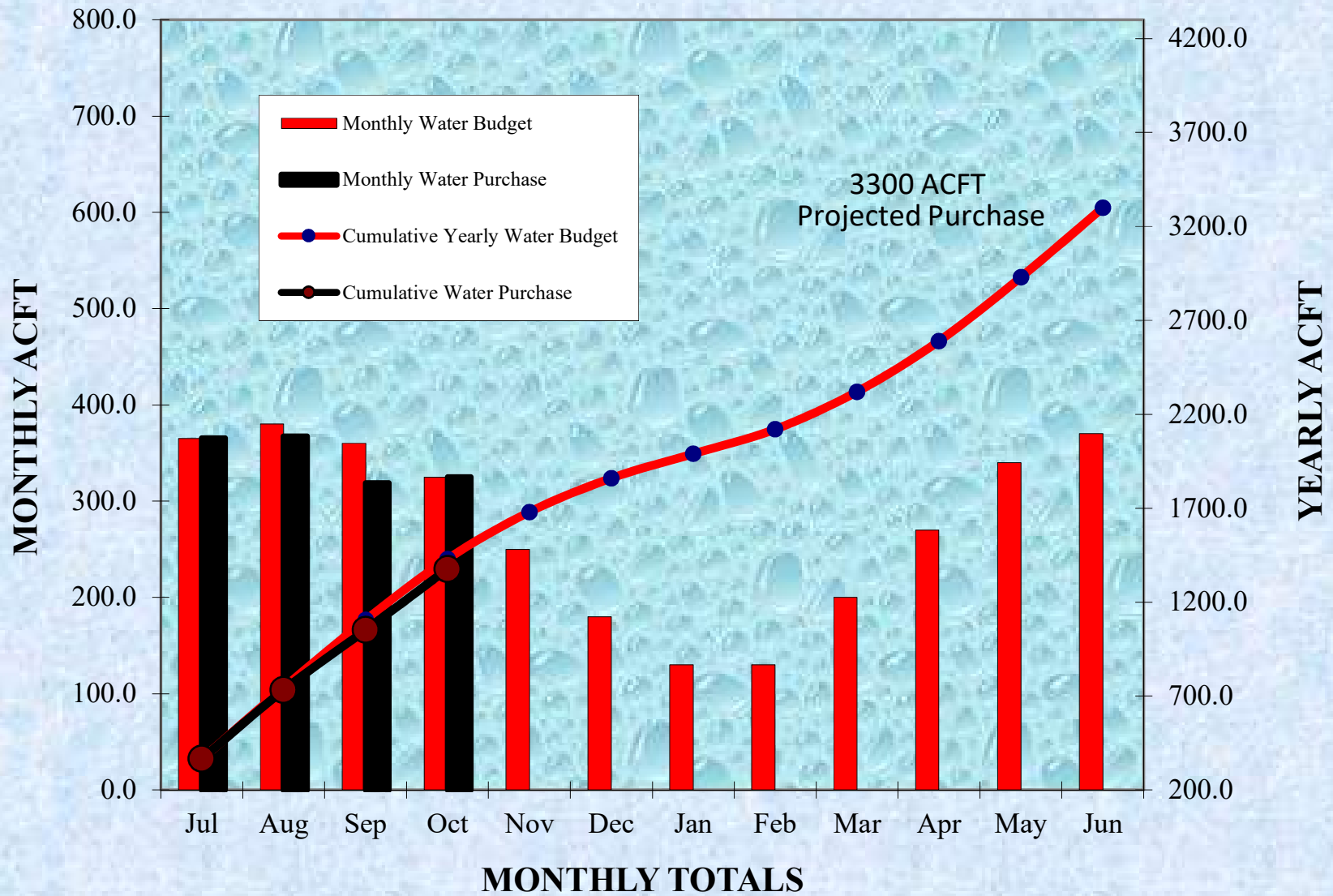
Month	AVG								TOTAL			
	Wildrose(2)	Montecito(3)	Trilogy(4)	Painted Hills(5)	Syc Crk(6)	Retreat(7)	Terramor(8)	Avg All Resid	IND-BK / IRR	RECYCLED- Inc Retreat Golf	NONPOT- Other	NONPOT-Trilogy Golf
AVG '07-'08	18.1	32.7	15.9	32.2	21.7	37.1	-	25.9	106.6			
AVG '08-'09	24.6	33.8	17.0	33.3	32.6	40.8	-	25.4	53.3			
AVG '09-'10	21.9	30.0	15.8	30.2	26.3	38.0	-	23.0	51.7			
AVG '10-'11	20.6	27.6	15.5	25.8	25.1	35.2	-	22.3	36.0			
AVG '11-'12	21.0	27.9	15.9	27.3	24.7	34.0	-	22.5	82.3			
AVG '12-'13	21.9	31.3	15.6	27.5	23.6	30.5	-	22.9	190.0			
AVG '13-'14	22.5	33.8	16.5	28.2	24.5	30.6	-	23.0	9.8			
AVG '14-'15	20.7	28.4	15.4	26.8	21.9	28.2	-	21.2	62.8			
AVG '15-'16	17.4	21.3	10.6	22.4	16.9	24.3	-	16.5	105.4	38,401.9	4,639.1	18,977.2
AVG '16-'17	18.4	26.4	16.7	24.8	18.5	27.1	26.4	19.4	211.0	46,977.4	8,442.6	16,068.4
Jul-17	22.2	28.8	18.7	30.8	23.0	36.5	32.8	23.9	282.2	61,717.0	6,576.7	26,927.2
Aug-17	19.6	25.3	15.1	26.8	20.6	32.0	30.1	20.7	238.3	54,117.8	5,731.9	28,506.0
Sep-17	18.5	23.9	14.2	24.4	18.8	29.7	19.5	19.3	237.4	49,886.0	5,776.8	17,915.1
Oct-17	18.5	22.8	13.2	28.3	18.9	27.8	21.3	18.9	637.8	50,781.8	6,329.0	25,552.0
Nov-17												
Dec-17												
Jan-18												
Feb-18												
Mar-18												
Apr-18												
May-18												
Jun-18												
AVG '17-'18	78.8	100.8	61.2	110.4	81.3	126.0	103.7	82.8	1395.7	216,502.62	24,414.43	98,900.30

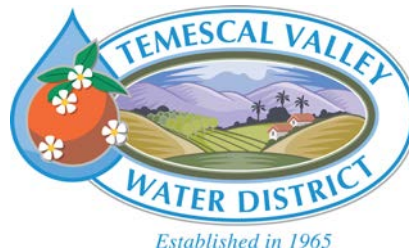
AMOUNTS IN UNITS (CCF) (ONE UNIT = 748 GALS.)

# WHOLESALE BUDGET vs PURCHASE

## Water Year July 2017 through June 2018

**3300 ACFT PROJECTION**





November 17, 2017

Board of Directors  
Temescal Valley Water District

RE: General Manager's Report

Dear Board:

The following is a brief status report on a number of issues that I have been involved in since the last meeting.

- Working on non-potable water supply improvements
  - New Sump Well – New Well Pump – **In and operational**
  - Terramor Basin Park Perk Piping – **Redesign to the floor of the basin**
  - Park Canyon Drive RW line – **Easement was denied by Craig Deleo**
- Working on Conservation opportunities and RW conversion locations
  - **Trilogy HOA**
- Working with Land Developers on water and sewer fees for multiple infill projects.
  - Deleo adjacent to Tom's Farms – **No Activity**
  - Forest Boundary – Plan Checking design plans – **Construction to start after the first of the year**
  - Retreat Infill – **Kiley Court – Plans signed**
  - Temescal Canyon Road at Campbell Ranch Road – **No Activity**
  - Kiley Family Trust Property – **Tract Map Stage**
- Terramor CFD – **Request to start Phase II CFD formation**
- Terramor Review:
  - RW and Potable Tank Siting – **Design Complete – mylars ready for signature**
- Terramor Onsite Water, Sewer and RW improvements
  - 1320 Water line – **Loop finished – Phase II in Construction**
  - 1509 Water line – **Loop finished**
  - Back Bone Gravity Sewer – **Loop finished – Phase II in construction**
  - Potable Water Booster Upgrade – **In operation**
  - RW Water Booster – **In operation**
  - Sewer Lift Station – **In testing**
- Sycamore Creek:
  - TM 36317 Water Sewer and RW improvement plans – **In construction**
  - TM 36317 Potable Booster – **In construction**

Temescal Valley Water District

22646 Temescal Canyon Road | Temescal Valley, CA 92883-4106 | tel: 951.277.1414 | fax: 951.277.1419  
www.temescalvwd.com

# **MEMORANDUM**

DATE: November 16, 2017  
TO: Board of Directors  
Temescal Valley Water District  
FROM: General Manager  
SUBJECT: Non-potable water conversion project funding request

## **BACKGROUND**

The District has received a letter requesting funding for converting potable water irrigation to non-potable water irrigation. Please see the attached letter and backup information for your review.

## **FISCAL IMPACT**

The District currently has \$135,00 budgeted in the Conversion Fund

## **RECOMMENDATION**

It is recommended that the Board of Directors:

1. Discuss and submit to the Committee level for study.

Respectfully submitted,



Jeff Pape  
General Manager



24503 Trilogy Parkway, Temescal Valley, CA. 92883

November 14, 2017

Temescal Valley Water District  
Board of Directors  
Jeff Pape, General Manager  
22646 Temescal Canyon Road  
Temescal Valley, CA 92883

RE: Request for Financial Assistance

Dear Board of Directors and Jeff Pape,

The Trilogy at Glen Ivy Maintenance Association (TGMA) is requesting financial assistance in the amount of \$395,440.00 from the Temescal Valley Water District to:

- A) eliminate four (4) common area potable water meters and to convert them into two (2) agriculture (AG) water meters to irrigate avocado groves and common areas within Modjeska Canyon and along Trilogy Parkway, and
- B) to add one (1) AG water meter to water the avocado groves and common area in Cobblestone Canyon.

At Jeff Pape's recommendation, TGMA contracted with Brett Allen of Van Dyke Landscape Architects who engineered and designed the proposed project. Bids were also obtained from three (3) qualified vendors.

TGMA is providing the attached packet of information to the Temescal Valley Water District which includes: the project overview, detailed maps and plans, estimated water consumption, and vendor bid summary packets.

We request this item be added to the Temescal Valley Water District's November 2017 meeting agenda for discussion and consideration.

If you should have any questions or need additional information please contact James Niccoli, Trilogy at Glen Ivy Maintenance Association's General Manager at 951-603-3826 or at [james.niccoli@fsresidential.com](mailto:james.niccoli@fsresidential.com).

On behalf of the Board of Directors,

*James Niccoli*

James Niccoli  
General Manager Trilogy at Glen Ivy

## PROJECT OVERVIEW

<b>METER A</b>	
<b>Location:</b>	Modjeska Canyon
<b>Potable water meter being eliminated:</b>	#13 – 24289 Fawskin (see attached meter map)
<b>Coverage area:</b>	This location will water the Avocado slopes and select common areas in Modjeska Canyon.
<b>Connection:</b>	Connection on T-box 15 between the white and blue T-markers. The controller will be located on Fawnskin near the area overlooking the flood basin.
<b>Number of avocado groves:</b>	Two (2)
<b>Number of avocado trees:</b>	907
<b>Estimated yearly water use</b>	7,156.13 Units or 5,352,802 Gallons
<b>Cost for Meter A:</b>	Bright View: \$59,024.09 O’Connell: \$58,950.00 Aramexx: \$111,080.00

<b>METER B</b>	
<b>Location:</b>	Modjeska Canyon and Trilogy Parkway
<b>Potable water meters being eliminated:</b>	#15 – 2415 Augusta #16– 23939 Four Corners (see attached meter map) #17 – 24144 Augusta
<b>Coverage area:</b>	This location will water avocado groves and common areas in Modjeska Canyon and water the west side of Trilogy Parkway.
<b>Connection:</b>	Connection behind T-box at hole #13. The controller will be located on Trilogy Parkway behind hole #13.
<b>Number of avocado groves:</b>	Five (5)
<b>Number of avocado trees:</b>	371
<b>Estimated yearly water use:</b>	7,216.58 Units or 5,398,003 Gallons
<b>Cost for Meter B:</b>	Bright View: \$152,851.39 O’Connell: \$212,475.00 Aramexx: \$206,645.00

<b>METER C</b>	
<b>Location:</b>	Cobblestone Condominiums
<b>Potable water meters being eliminated:</b>	None – however, meters #12 – 8720 Cuyamaca, #18 – Upper Park / La Posta, and #19 – eastside of Falcon will no longer irrigate Avocado groves and will only irrigate the front and back yards of the condominiums. (see attached meter map)
<b>AG water meter being added:</b>	One (1)
<b>Coverage area:</b>	This location will water the Cobblestone Avocado slopes, meadow and select common areas in Modjeska Canyon and on Falcon Lane.
<b>Connection:</b>	Connection on Falcon. The controller will be located on Falcon Lane near the cart path and bathroom.
<b>Number of avocado slopes:</b>	Five (5)
<b>Number of avocado trees:</b>	503
<b>Estimated yearly water use:</b>	9,852.37 Units or 7,369,569 Gallons
<b>Cost for Meter C:</b>	Bright View: \$183,563.73 O’Connell: \$216,200.00 Aramexx: \$195,142.00



<b>TOTAL</b>	
<b>Locations:</b>	Modjeska Canyon, Cobblestone Canyon, Trilogy Parkway
<b>Potable water meter being eliminated:</b>	#13 – 24289 Fawskin #15 – 2415 Augusta #16– 23939 Four Corners #17 – 24144 Augusta
<b>AG water meter being added:</b>	One (1)
<b>Coverage areas:</b>	See attached meter map
<b>Number of avocado groves:</b>	Twelve (12)
<b>Number of avocado trees:</b>	1781
<b>Estimated yearly water use</b>	24,225.08 Units or 18,120,374 Gallons
<b>Cost for entire project:</b>	Bright View: \$395,439.21 O’Connell: \$487,625.00 Aramexx: \$512,867.00

# Trilogy Meter Map

503 Trees

371 Trees

907 Trees

- 1 - HOA 4 / FILTER 1
- 2 - HOA 8 / FILTER 2
- 3 - HOA 7 / HUGHES
- 4 - PARKWAY / FILTER 3
- 5 - CENTER / LODGE
- 6 - HOA 10 / NOBE
- 7 - HOA 2A / CORRAL ENT.
- 8 - HOA 2B / CORRAL EXIT
- 9 - HOA 6 / COLD WATER

- 10 - 24491 TRILOGY
- 11 - 24477 TRIL LAKE CTR
- 12 - 8720 CUYAMACA
- 13 - 24289 FAUNSKIN
- 14 - CUYAMACA / TRIL
- 15 - 2415 AUGUSTA
- 16 - 23939 FOUR CORNERS
- 17 - 24144 AUGUSTA
- 18 - UPP PARK / LA POSTA
- 19 - E SIDE FALCON

WATER METERS, LOCATION AND COVERAGE.

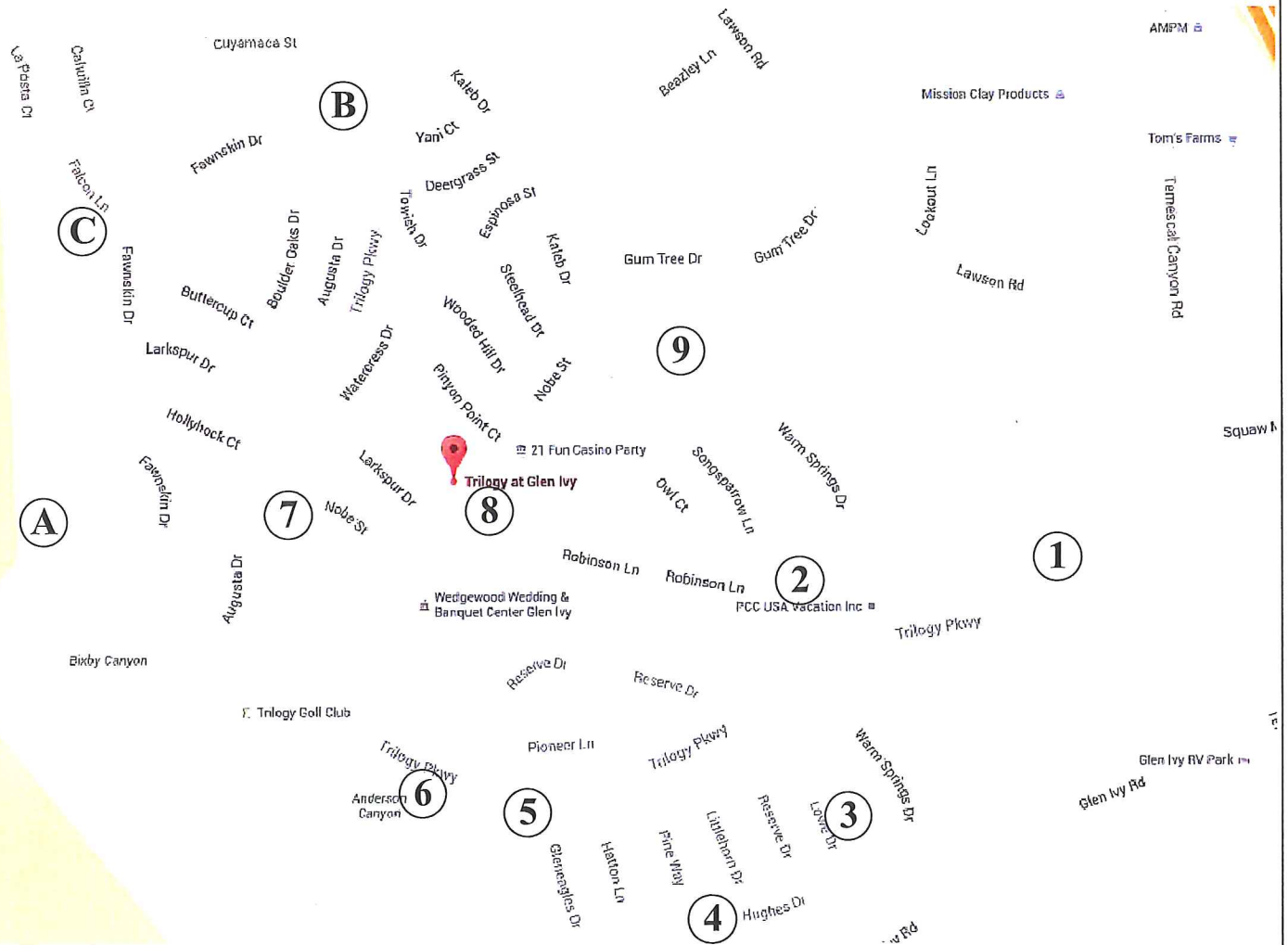
○ - AG Water

○ - Potable

TRIOLOGY



## Exhibit C to Water Agreement Trilogy Golf Club at Glen Ivy Sketch of TGMA Submeters



**#1 Meter - 4" POC, Approx. Elev. 110' @ 110 psi**

**#2 Meter - 1.5" Line**

**#3 Meter - 1.5" Line**

**#4 Meter - 1.5" Line @ 110 psi**

**#5 Meter - 6" POC @ Approx. 140 psi**

**#6 Meter - 4" POC @ Approx. 65 psi**

**#7 Meter - 6" POC @ Approx. 65 psi**

**#8 Meter - 2" Line @ 110 psi**

**#9 Meter - 4" POC, Approx. Elev. 1140'**

**A Meter - 6" POC @ Approx. 125 psi (48" Depth)**

**B Meter - 8" POC @ Approx. 120 psi (9' Depth)**

**C Meter - 6" POC @ Approx. 95 psi (48" Depth)**



# Trilogy

# TRILOGY AT GLEN IVY RECYCLED WATER CONVERSION PLAN CORONA, CALIFORNIA

TRILOGY HOA  
 HOA REPRESENTATIVE \_\_\_\_\_ DATE \_\_\_\_\_  
 NOTE: TRILOGY HOA SHALL BE RESPONSIBLE FOR CONTINUED MAINTENANCE OF THE RECYCLED WATER DISTRIBUTION LINES FOR DEMAND NODES A, B AND C AS SHOWN ON THE TGMMA SUB METER SKETCH PROVIDED ON 9/29/16.  
**TEMESCAL VALLEY WATER DISTRICT**  
 APPROVED FOR CONVERSION:  
 General Manager \_\_\_\_\_ Date \_\_\_\_\_



Registered Landscape Architect  
 Cert. No. 3261 Exp. 11-30-2017

PROJECT NUMBER: 15-086

AUTOCADD FILE:  
 P:\16656 Trilogy HOA\CD\TRILOGY\_PRR

DATE: APRIL 21, 2016

DRAWN BY: BJA

CHECKED BY: YH

PROJECT TITLE:  
**TRILOGY HOA  
 RECYCLED WATER  
 CONVERSION PLAN**

SHEET TITLE:  
**COVER SHEET**

REVISION:

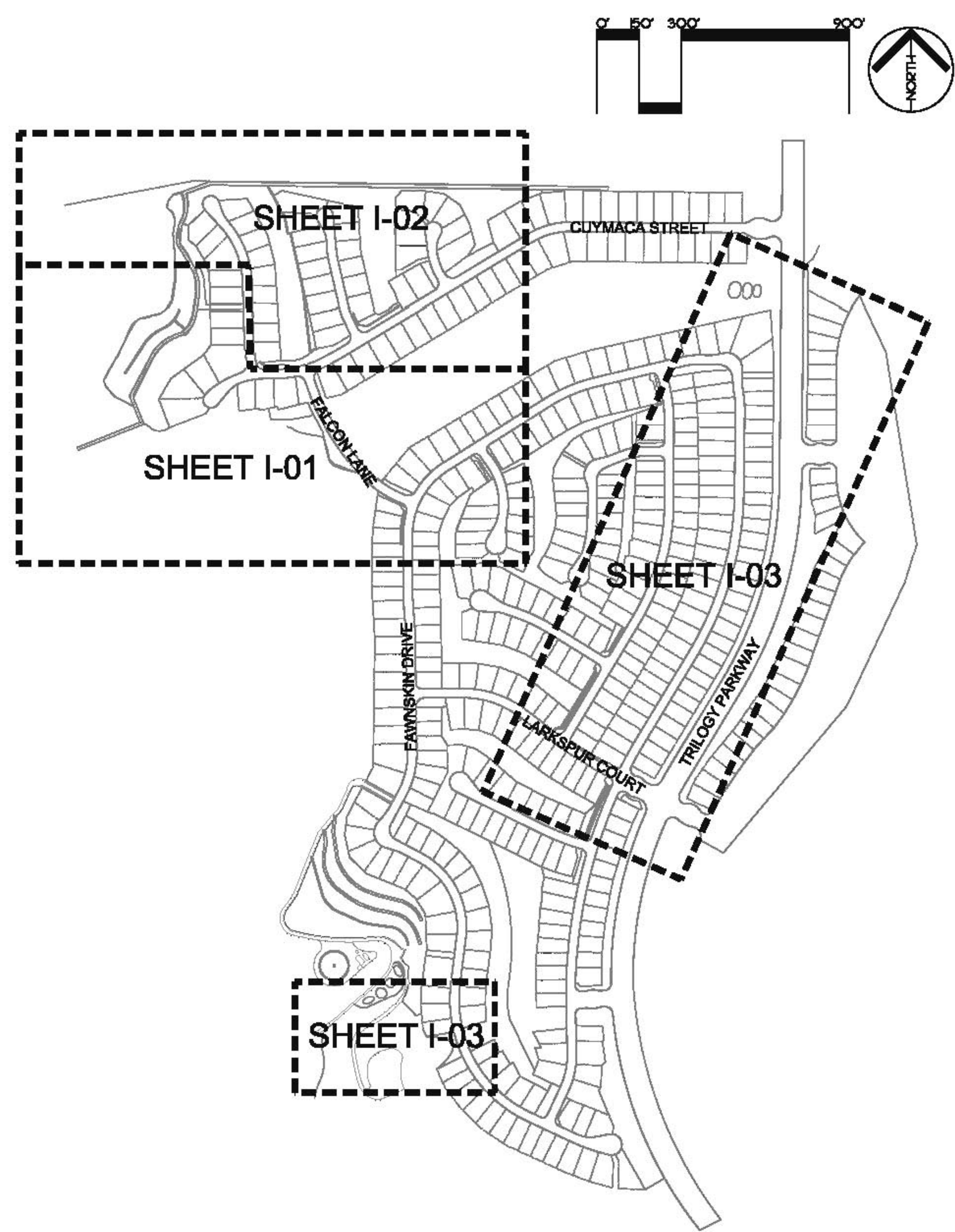
ISSUED FOR:

SHEET:

**CS-01**

SHEET: 1 OF 13 SHEETS

PROJECT KEY MAP:



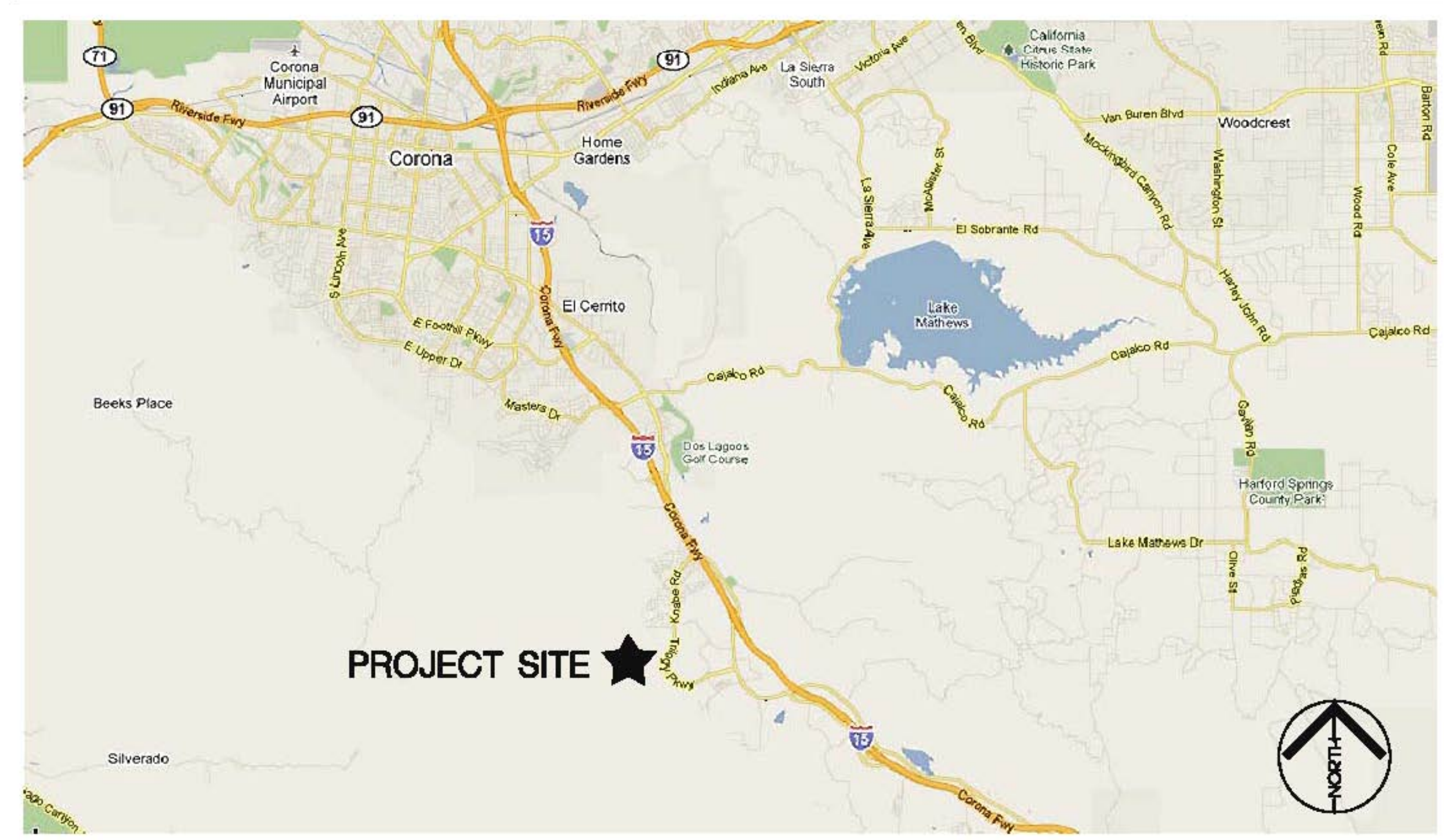
DRAWING INDEX:

SHEET	SHEET NUMBER	SHEET DESCRIPTION
CS-01	1	COVER SHEET
M-01	2	RECYCLED WATER COVERAGE & SIGNAGE PLAN METERS A & B
M-02	3	RECYCLED WATER COVERAGE & SIGNAGE PLAN METERS B & C
I-01	4	RECYCLED WATER CONVERSION PLAN FOR EXISTING POTABLE METERS 12, 14, 16, 18 & 19
I-02	5	RECYCLED WATER CONVERSION PLAN FOR EXISTING POTABLE METERS 13, 14, 16 & 19
I-03	6	RECYCLED WATER CONVERSION PLAN FOR EXISTING POTABLE METERS 15, 16, 18 & 17
D-01	7	RECYCLED WATER CONVERSION IRRIGATION LEGEND AND NOTES
D-02	8	RECYCLED WATER CONVERSION IRRIGATION DETAILS
D-03	9	RECYCLED WATER CONVERSION IRRIGATION DETAILS
D-04	10	RECYCLED WATER CONVERSION IRRIGATION DETAILS
D-05	11	RECYCLED WATER CONVERSION IRRIGATION DETAILS
D-06	12	RECYCLED WATER CONVERSION IRRIGATION SPECIFICATIONS
D-07	13	RECYCLED WATER CONVERSION IRRIGATION SPECIFICATIONS

CONTACT INFORMATION:

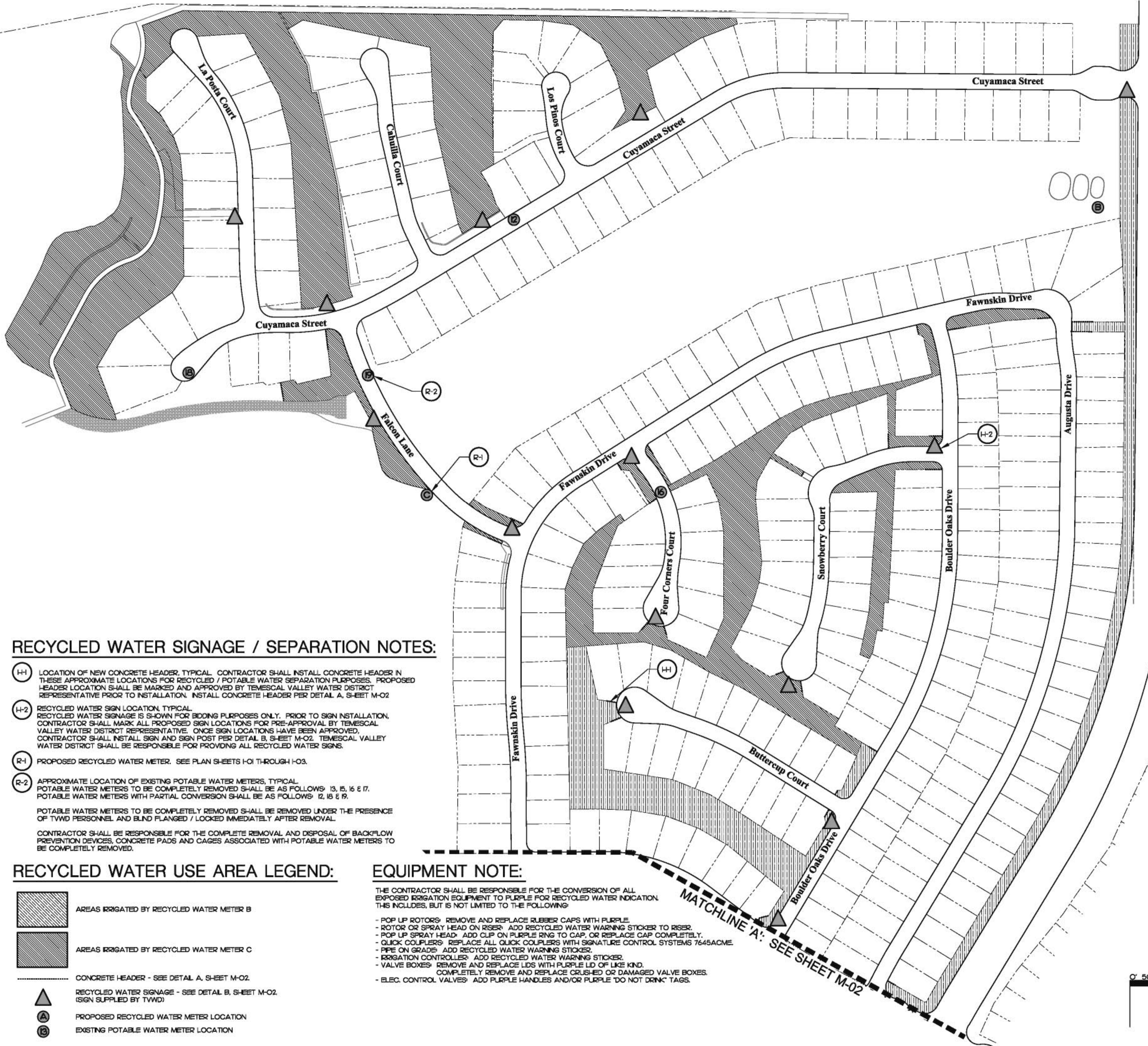
<b>LANDSCAPE ARCHITECT:</b> VDLA 2870 FIFTH AVENUE SUITE 240 SAN DIEGO, CA 92108-6906 TEL: (619) 294-8484 FAX: (619) 674-0826 CONTACT PERSON: BRETT ALLEN	<b>PROPERTY MANAGEMENT:</b> FIRST SERVICE RESIDENTIAL 24608 TRILogy PARKWAY TEMESCAL VALLEY, CA 92683 TEL: (951) 603-3820 CONTACT PERSON: JAMES NICCOLI	<b>WATER DISTRICT:</b> TEMESCAL VALLEY WATER DISTRICT 22846 TEMESCAL CANYON ROAD CORONA, CA 92683 TEL: (951) 277-1414 FAX: (951) 277-1410 CONTACT PERSON: JEFF PAPE
---	--	---

VICINITY MAP:



**BID SET  
 NOT FOR CONSTRUCTION**





**RECYCLED WATER SIGNAGE / SEPARATION NOTES:**

- (H-1) LOCATION OF NEW CONCRETE HEADER, TYPICAL. CONTRACTOR SHALL INSTALL CONCRETE HEADER IN THESE APPROXIMATE LOCATIONS FOR RECYCLED / POTABLE WATER SEPARATION PURPOSES. PROPOSED HEADER LOCATION SHALL BE MARKED AND APPROVED BY TEMESCAL VALLEY WATER DISTRICT REPRESENTATIVE PRIOR TO INSTALLATION. INSTALL CONCRETE HEADER PER DETAIL A, SHEET M-02
- (H-2) RECYCLED WATER SIGN LOCATION, TYPICAL. RECYCLED WATER SIGNAGE IS SHOWN FOR BIDDING PURPOSES ONLY. PRIOR TO SIGN INSTALLATION, CONTRACTOR SHALL MARK ALL PROPOSED SIGN LOCATIONS FOR PRE-APPROVAL BY TEMESCAL VALLEY WATER DISTRICT REPRESENTATIVE. ONCE SIGN LOCATIONS HAVE BEEN APPROVED, CONTRACTOR SHALL INSTALL SIGN AND SIGN POST PER DETAIL B, SHEET M-02. TEMESCAL VALLEY WATER DISTRICT SHALL BE RESPONSIBLE FOR PROVIDING ALL RECYCLED WATER SIGNS.
- (R-1) PROPOSED RECYCLED WATER METER. SEE PLAN SHEETS I-01 THROUGH I-03.
- (R-2) APPROXIMATE LOCATION OF EXISTING POTABLE WATER METERS, TYPICAL. POTABLE WATER METERS TO BE COMPLETELY REMOVED SHALL BE AS FOLLOWS: 13, 15, 16 & 17. POTABLE WATER METERS WITH PARTIAL CONVERSION SHALL BE AS FOLLOWS: 12, 18 & 19.  
 POTABLE WATER METERS TO BE COMPLETELY REMOVED SHALL BE REMOVED UNDER THE PRESENCE OF TVWD PERSONNEL AND BLIND FLANGED / LOCKED IMMEDIATELY AFTER REMOVAL.  
 CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF BACKFLOW PREVENTION DEVICES, CONCRETE PADS AND CAGES ASSOCIATED WITH POTABLE WATER METERS TO BE COMPLETELY REMOVED.

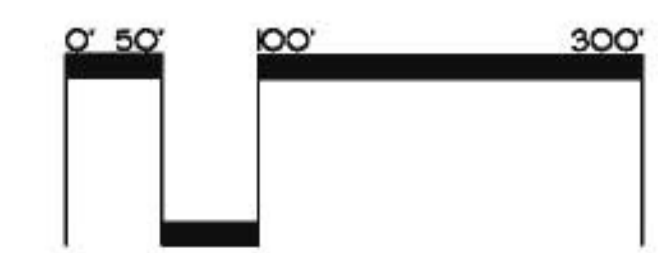
**RECYCLED WATER USE AREA LEGEND:**

- AREAS IRRIGATED BY RECYCLED WATER METER B
- AREAS IRRIGATED BY RECYCLED WATER METER C
- CONCRETE HEADER - SEE DETAIL A, SHEET M-02
- RECYCLED WATER SIGNAGE - SEE DETAIL B, SHEET M-02 (SIGN SUPPLIED BY TVWD)
- PROPOSED RECYCLED WATER METER LOCATION
- EXISTING POTABLE WATER METER LOCATION

**EQUIPMENT NOTE:**

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONVERSION OF ALL EXPOSED IRRIGATION EQUIPMENT TO PURPLE FOR RECYCLED WATER INDICATION. THIS INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
- POP UP ROTORS: REMOVE AND REPLACE RUBBER CAPS WITH PURPLE.
  - ROTOR OR SPRAY HEAD ON RISER: ADD RECYCLED WATER WARNING STICKER TO RISER.
  - POP UP SPRAY HEAD: ADD CLIP ON PURPLE RING TO CAP, OR REPLACE CAP COMPLETELY.
  - QUICK COUPLERS: REPLACE ALL QUICK COUPLERS WITH SIGNATURE CONTROL SYSTEMS 7645ACME.
  - PIPE ON GRADES: ADD RECYCLED WATER WARNING STICKER.
  - IRRIGATION CONTROLLER: ADD RECYCLED WATER WARNING STICKER.
  - VALVE BOXES: REMOVE AND REPLACE LIDS WITH PURPLE LID OF LIKE KIND. COMPLETELY REMOVE AND REPLACE CRUSHED OR DAMAGED VALVE BOXES.
  - ELEC. CONTROL VALVES: ADD PURPLE HANDLES AND/OR PURPLE "DO NOT DRINK" TAGS.

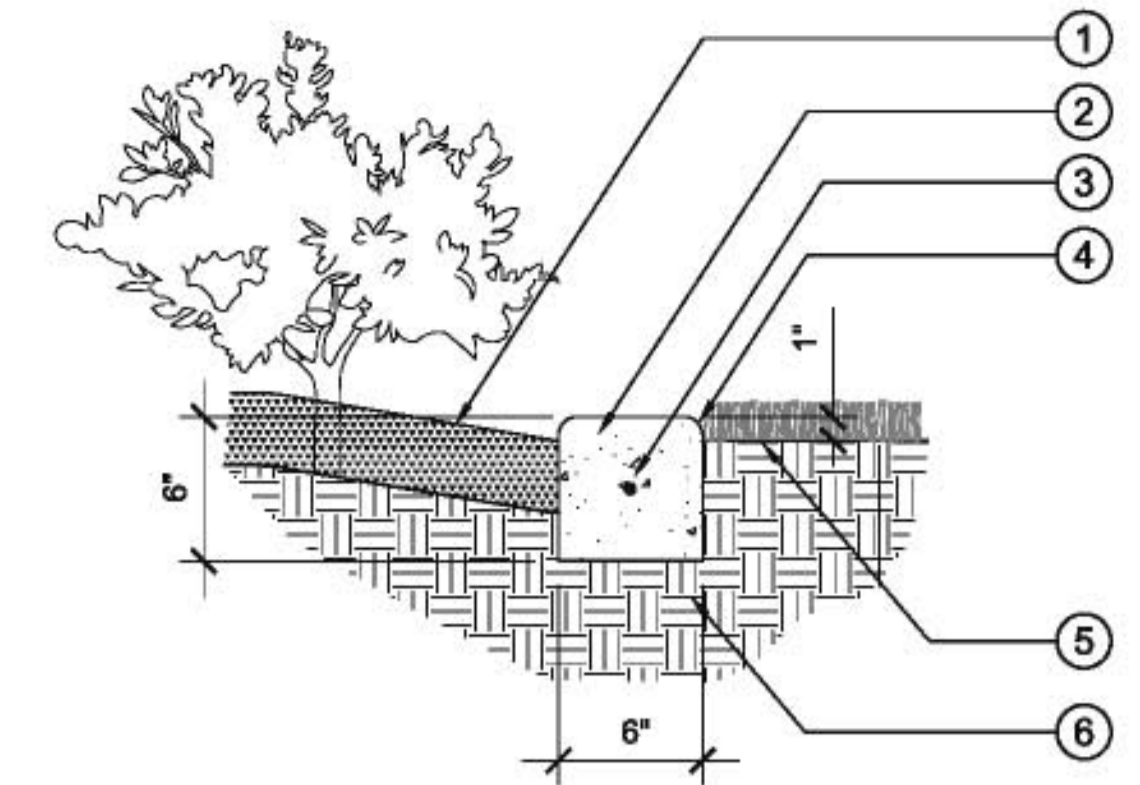
MATCHLINE 'A': SEE SHEET M-02



**BID SET  
 NOT FOR CONSTRUCTION**

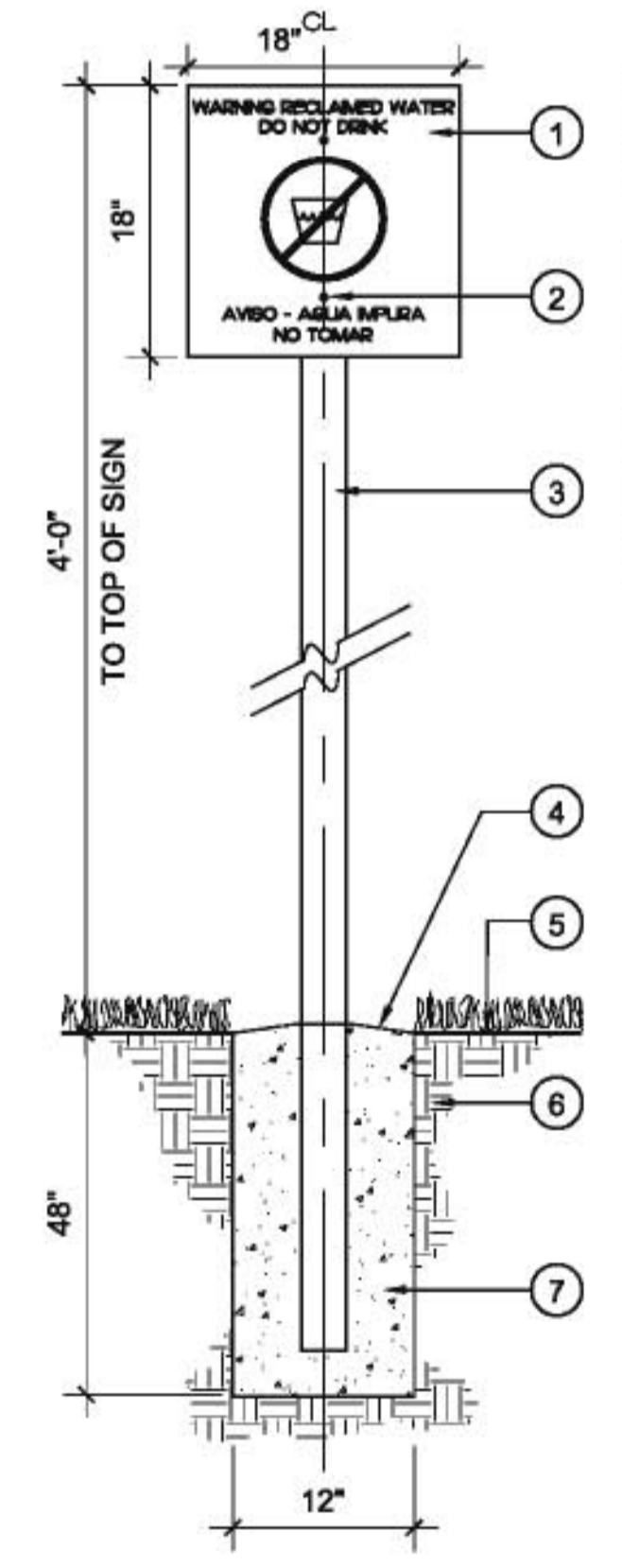


DIAL TOLL FREE  
 1-800-422-4133  
 AT LEAST TWO DAYS  
 BEFORE YOU DIG  
 UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA



- ① PLANTING AREA WITH MULCH TRANSITION AT HARDSCAPE
  - ② CONCRETE HEADER SMOOTH TROWEL FINISH
  - ③ #3 REBAR CONTINUOUS OVERLAP 12" @ ALL SPLICES
  - ④ 1/2" RADIUS TYP
  - ⑤ TURF OR PLANTING AREA
  - ⑥ BASE AND COMPACTION PER GEOTECHNICAL REPORT
- NOTE:  
 LOCATE WEAKENED PLANE JOINTS AT 20' O.C. MAX, AND AT ALL CHANGES IN DIRECTION

**(A) CONCRETE HEADER**  
 1 1/2" = 1'-0" TRILOGY



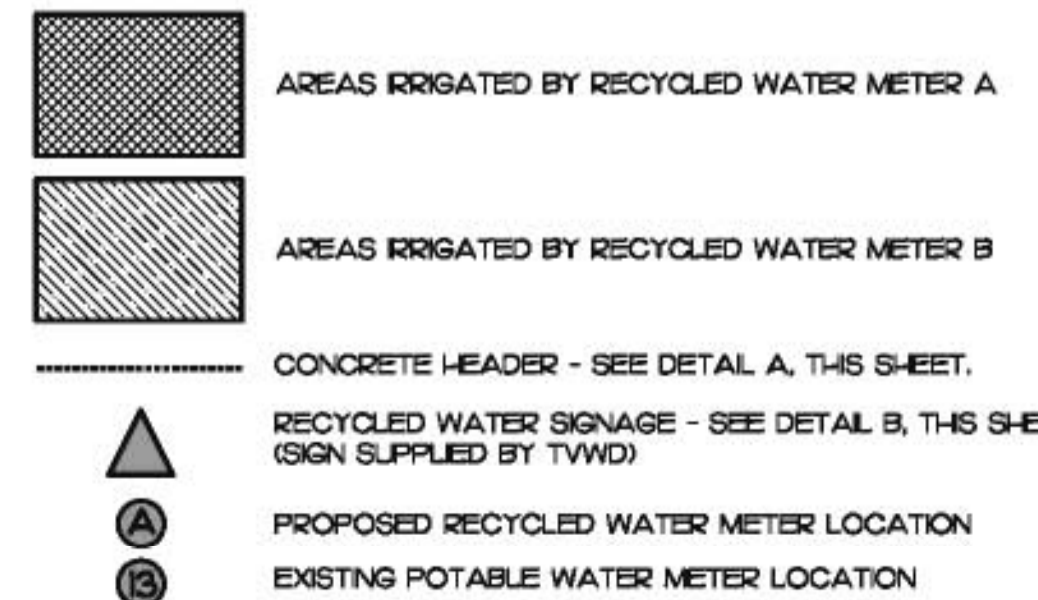
- ① RECLAIMED WATER SIGN PER PER LLWD STANDARDS
  - ② ATTACH SIGN TO POST W/ (2) 1/4" CARRIAGE BOLTS 3" FROM TOP AND BOTTOM OF SIGN. BOLT SIZES AS REQUIRED
  - ③ 3" GALVANIZED STEEL POST
  - ④ SLOPE TO DRAIN AWAY FROM POST
  - ⑤ FINISH GRADE
  - ⑥ COMPACT SUBGRADE
  - ⑦ CONCRETE FOOTING
- NOTE:  
 CONTRACTOR SHALL RECEIVE APPROVAL ON RECYCLED WATER SIGNAGE LOCATIONS FROM TVWD ON-SITE INSPECTOR. TVWD SHALL PROVIDE RECYCLED WATER SIGNS AFTER LOCATIONS HAVE BEEN APPROVED.

**(B) RECYCLED WATER SIGNAGE**  
 SCALE: 1"=1'-0" TRILOGY

**RECYCLED WATER SIGNAGE / SEPARATION NOTES:**

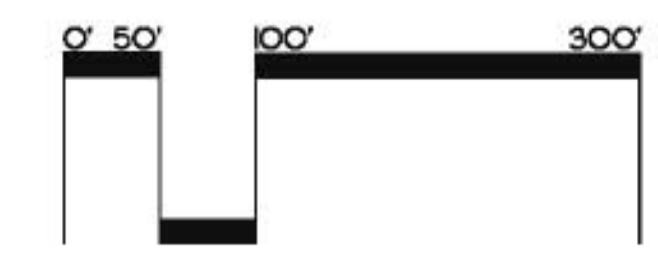
- (H-1) LOCATION OF NEW CONCRETE HEADER, TYPICAL. CONTRACTOR SHALL INSTALL CONCRETE HEADER IN THESE APPROXIMATE LOCATIONS FOR RECYCLED / POTABLE WATER SEPARATION PURPOSES. PROPOSED HEADER LOCATION SHALL BE MARKED AND APPROVED BY TEMESCAL VALLEY WATER DISTRICT REPRESENTATIVE PRIOR TO INSTALLATION. INSTALL CONCRETE HEADER PER DETAIL A, THIS SHEET.
  - (H-2) RECYCLED WATER SIGN LOCATION, TYPICAL. RECYCLED WATER SIGNAGE IS SHOWN FOR BIDDING PURPOSES ONLY. PRIOR TO SIGN INSTALLATION CONTRACTOR SHALL MARK ALL PROPOSED SIGN LOCATIONS FOR PRE-APPROVAL BY TEMESCAL VALLEY WATER DISTRICT REPRESENTATIVE. ONCE SIGN LOCATIONS HAVE BEEN APPROVED, CONTRACTOR SHALL INSTALL SIGN AND SIGN POST PER DETAIL B, THIS SHEET. TEMESCAL VALLEY WATER DISTRICT SHALL BE RESPONSIBLE FOR PROVIDING ALL RECYCLED WATER SIGNS.
  - (R-1) PROPOSED RECYCLED WATER METER. SEE PLAN SHEETS H-01 THROUGH H-03.
  - (R-2) APPROXIMATE LOCATION OF EXISTING POTABLE WATER METERS, TYPICAL. POTABLE WATER METERS TO BE COMPLETELY REMOVED SHALL BE AS FOLLOWS: 13, 15, 16 & 17. POTABLE WATER METERS WITH PARTIAL CONVERSION SHALL BE AS FOLLOWS: 12, 18 & 19.
- POTABLE WATER METERS TO BE COMPLETELY REMOVED SHALL BE REMOVED UNDER THE PRESENCE OF TVWD PERSONNEL AND BLIND FLANGED / LOCKED IMMEDIATELY AFTER REMOVAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF BACKFLOW PREVENTION DEVICES, CONCRETE PADS AND CAGES ASSOCIATED WITH POTABLE WATER METERS TO BE COMPLETELY REMOVED.

**RECYCLED WATER USE AREA LEGEND:**



**EQUIPMENT NOTE:**

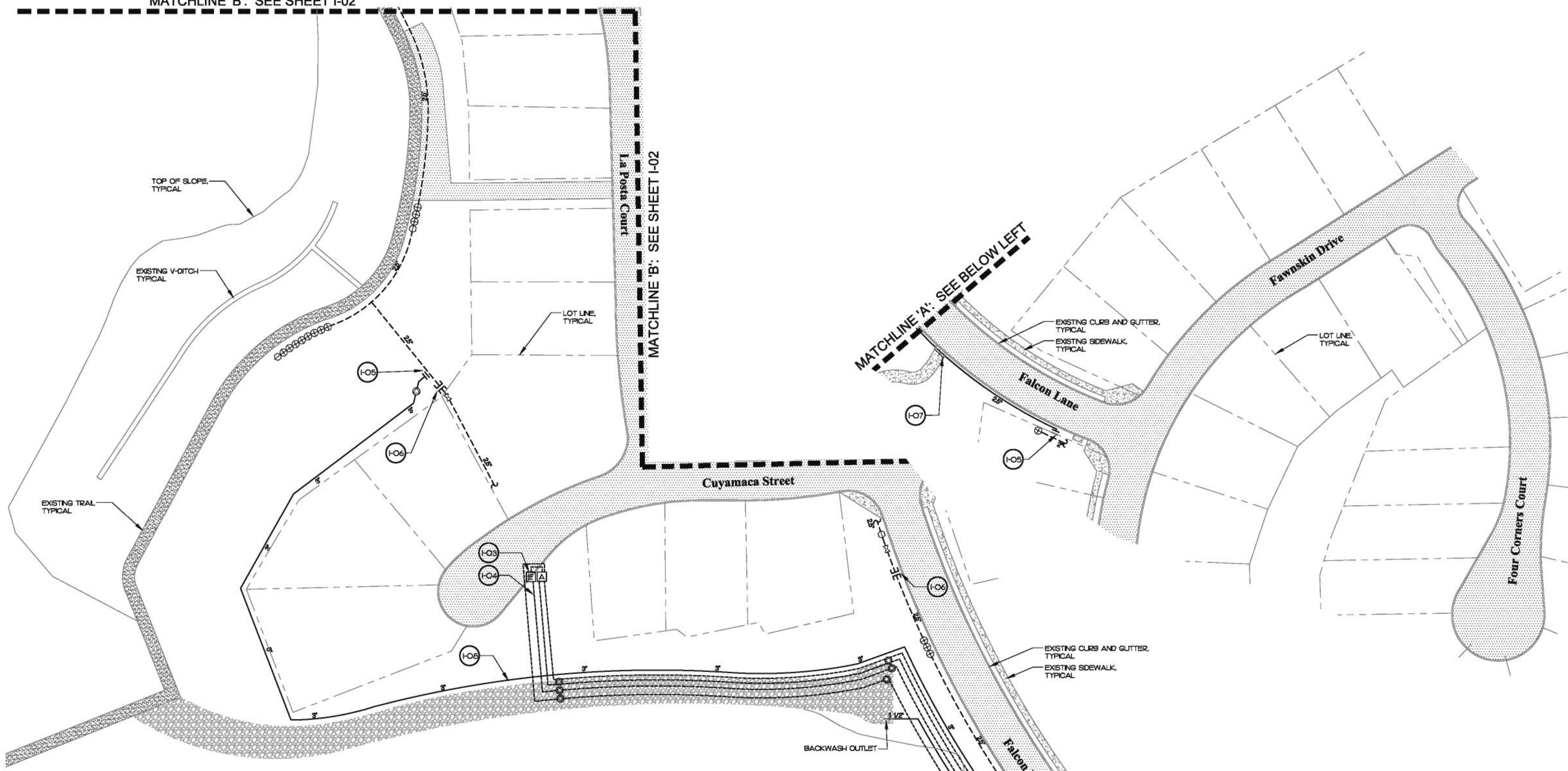
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONVERSION OF ALL EXPOSED IRRIGATION EQUIPMENT TO PURPLE FOR RECYCLED WATER INDICATION. THIS INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
- POP UP ROTORS: REMOVE AND REPLACE RUBBER CAPS WITH PURPLE.
  - ROTOR OR SPRAY HEAD ON RISER: ADD RECYCLED WATER WARNING STICKER TO RISER.
  - POP UP SPRAY HEAD: ADD CLIP ON PURPLE RING TO CAP, OR REPLACE CAP COMPLETELY.
  - QUICK COUPLERS: REPLACE ALL QUICK COUPLERS WITH SIGNATURE CONTROL SYSTEMS 7645ACME.
  - PIPE ON GRADE: ADD RECYCLED WATER WARNING STICKER.
  - IRRIGATION CONTROLLER: ADD RECYCLED WATER WARNING STICKER.
  - VALVE BOXES: REMOVE AND REPLACE LIDS WITH PURPLE LID OF LIKE KIND. COMPLETELY REMOVE AND REPLACE CRUSHED OR DAMAGED VALVE BOXES.
  - ELEC. CONTROL VALVES: ADD PURPLE HANDLES AND/OR PURPLE "DO NOT DRINK" TAGS.



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**IRRIGATION NOTES FOR RECYCLED WATER METER C:**

NOTES APPLY TO THIS SHEET ONLY

**I-01** CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND EXPOSING THE EXISTING 6" GOLF COURSE PRESSURE SUPPLY LINE IN THIS APPROXIMATE LOCATION AT APPROXIMATELY 48" IN DEPTH. ONCE GOLF COURSE PRESSURE SUPPLY LINE HAS BEEN LOCATED, AND UNDER THE SUPERVISION OF GOLF COURSE SUPERINTENDENT, CONTRACTOR SHALL THEN HOT TAP EXISTING 6" LINE WITH A 4" TAP (PER LEGEND) USING ALL APPROPRIATE FITTINGS AND MATERIALS. VERIFY THAT THE STATIC WATER PRESSURE AT THE HOT TAP IS 95 PSI AND ACTUAL EXISTING PIPE IS 6" IN SIZE. IF THE STATIC WATER PRESSURE IS NOT 95 PSI OR EXISTING PIPE IS NOT 6" IN SIZE, IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ANY DISCREPANCY IN WATER PRESSURE / PIPE SIZE. • EMAIL: BALLEND@DLA.US, ATTENTION BRETT ALLEN. WORK SHALL NOT CONTINUE UNTIL THE CONTRACTOR HAS VERIFICATION FROM THE LANDSCAPE ARCHITECT STATING THAT THE WATER PRESSURE IS SUFFICIENT FOR MAINTAINING THE IRRIGATION SYSTEM REQUIREMENTS. IF THE CONTRACTOR FAILS TO NOTIFY THE LANDSCAPE ARCHITECT OF ANY STATIC WATER PRESSURE DISCREPANCIES WHEN SUCH DISCREPANCIES EXIST, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL MODIFICATIONS REQUIRED TO THE IRRIGATION SYSTEM AS DIRECTED BY THE LANDSCAPE ARCHITECT AT THE SOLE EXPENSE OF THE CONTRACTOR (INCLUDING PUMP UPGRADES).

ONCE THE STATIC WATER PRESSURE IS VERIFIED AND/OR STATIC WATER PRESSURE DISCREPANCIES ARE RESOLVED, CONTRACTOR SHALL INSTALL NEW 4" RESILIENT WEDGE TAPPING VALVE, 2" WATER METER, 3" SAND MEDIA FILTER, 25" BOOSTER PUMP, 2" PRESSURE REGULATOR, 2" / 1" MASTER VALVE AND 2" / 1" FLOW SENSOR PER LEGEND AND DETAILS. CONTRACTOR SHALL PIPE FLUSH FROM FILTER THROUGH 1/2" SCH. 40 PVC INTO DRAINAGE CHANNEL AS SHOWN.

ONCE CONTRACTOR HAS INSTALLED ALL EQUIPMENT AFTER TAP, CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING PRESSURE SUPPLY LINE AS SHOWN.

**I-02** THE IRRIGATED AREA TO BE SERVICED THROUGH RECYCLED WATER METER C CONSISTS OF 463,231 SQ. FT. OR 10.63 ACRES AND HAS A PEAK FLOW THROUGH THE METER OF 15 GPM. THE ESTIMATED YEARLY WATER USE IS 2262 ACRE FEET OR 9,652,371 GALS. THE INFORMATION PRESENTED IN THE FOLLOWING HYDRAULIC SUMMARY IS BASED UPON PRESSURES PROVIDED BY TRILOGY HOA.

HYDRAULIC SUMMARY FOR RECYCLED METER C	
STATIC WATER PRESSURE	95.00
EQUIPMENT LOSSES	45.87
ELEVATION LOSSES	15.19
PSI REQ. AT TIE-IN	85.00
TOTAL WORKING PRESSURE	149.06
BOOST REQUIRED	63.56

CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING TWO (2) 1" DIAMETER CONDUITS FOR MASTER VALVE AND FLOW SENSOR WIRES AND ONE (1) CONDUIT FOR PUMP CONTROL FROM NEW CONTROLLER 'C' TO THIS APPROXIMATE LOCATION AND THE CONNECTION OF THESE WIRES TO THE NEW MASTER VALVES, FLOW SENSORS AND PUMP WITH APPROVED WIRE CONNECTORS. INSTALL PULL BOXES ALONG FLOW SENSOR / MASTER VALVE AND PUMP CONDUIT RUN AS SHOWN. SPLICES IN FLOW SENSOR / MASTER VALVE AND PUMP CONTROL WIRE WIRE SHALL ONLY BE MADE WHEN ABSOLUTELY NECESSARY.

WIRE COLORS FOR MASTER VALVE / FLOW SENSORS SHALL BE AS FOLLOWS:  
 MASTER VALVE #1: BLUE / WHITE WITH BLUE STRIPE  
 MASTER VALVE #2: BLUE / WHITE WITH BLUE STRIPE

FLOW SENSOR #1: BLACK / RED  
 FLOW SENSOR #2: BLACK WITH RED STRIPE / RED WITH BLACK STRIPE

PUMP: YELLOW / WHITE WITH YELLOW STRIPE

**I-03** APPROXIMATE LOCATION OF EXISTING HOA IRRIGATION CONTROLLERS 61 & 62 AND ASSOCIATED ELECTRICAL PEDESTAL. CONTRACTOR SHALL INSTALL NEW FLOW MONITORING CALSENSE IRRIGATION CONTROLLER IN THIS APPROXIMATE LOCATION PER MANUFACTURER'S RECOMMENDATIONS AND DETAIL. ONCE CONTROLLER HAS BEEN INSTALLED CONTRACTOR SHALL LOCATE 120 VAC SERVICE AT EXISTING ELECTRICAL PEDESTAL, INSTALL A DEDICATED 20 AMP BREAKER AND ROUTE 120 VAC SERVICE THROUGH 1" SCH. 40 PVC CONDUIT INTO NEW CONTROLLER USING 12 AWG WIRE AND ALL APPROPRIATE FITTINGS/EQUIPMENT THAT CONFORM TO ALL NATIONAL AND LOCAL ELECTRICAL CODES.

**I-04** ELECTRICAL SUPPLY TO NEW BOOSTER PUMP. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING ELECTRICAL PEDESTAL AT EXISTING HOA IRRIGATION CONTROLLERS 61 & 62 IN THIS APPROXIMATE LOCATION. ONCE ELECTRICAL PEDESTAL HAS BEEN LOCATED, CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING NEW BREAKERS FOR BOOSTER PUMP SYSTEM AND EXTENDING WIRE THROUGH 1" PVC SCH. 40 CONDUIT TO PUMP LOCATION. WIRE AND NEW BREAKERS SHALL BE SIZED APPROPRIATELY WITH PUMP AMPERAGE AND INSTALLED WITH ALL APPROPRIATE FITTINGS / EQUIPMENT THAT CONFORM TO ALL NATIONAL AND LOCAL ELECTRICAL CODES.

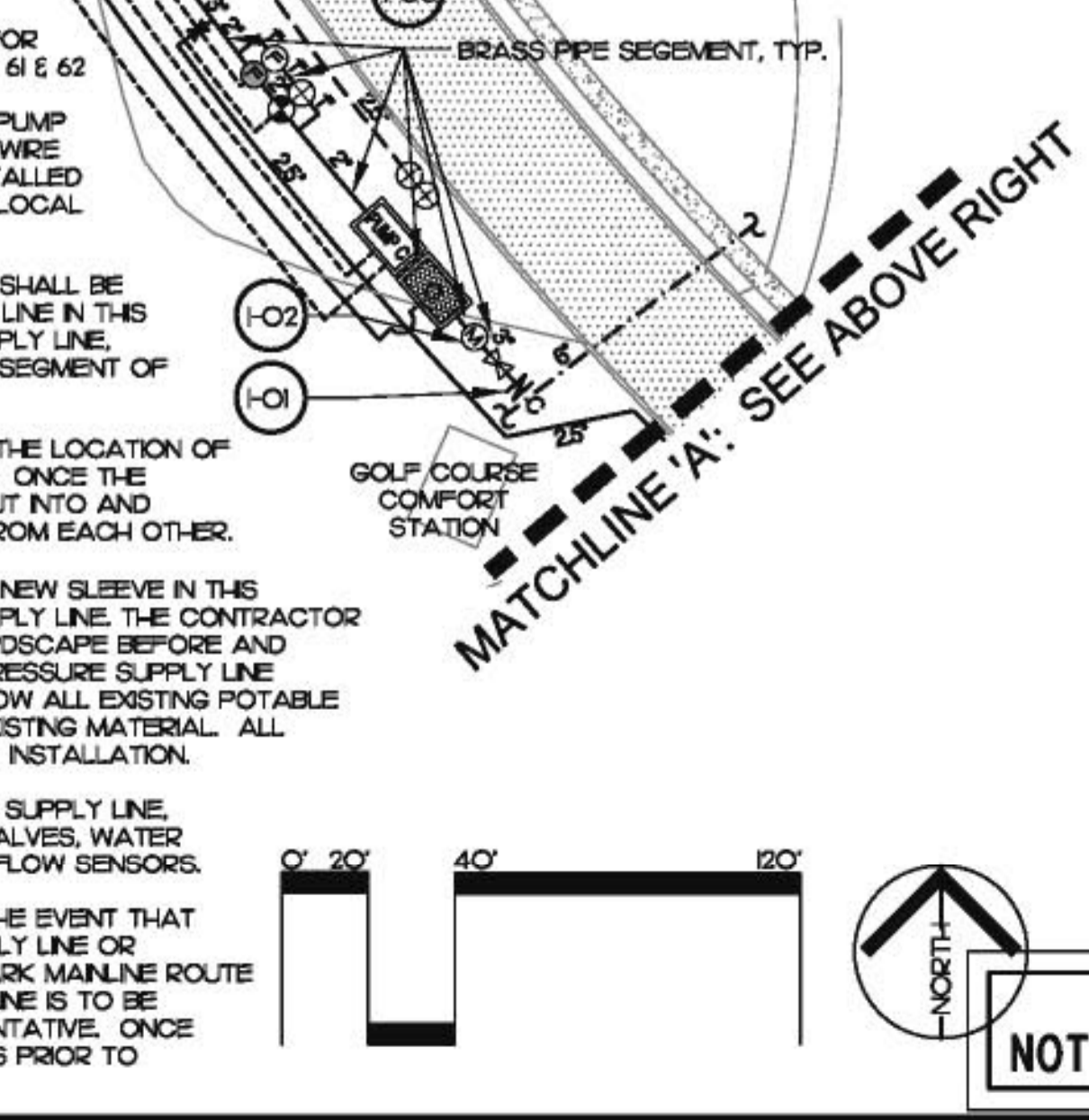
**I-05** CONNECTION TO EXISTING POTABLE IRRIGATION PRESSURE SUPPLY LINE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF EXISTING POTABLE IRRIGATION PRESSURE SUPPLY LINE IN THIS APPROXIMATE LOCATION. ONCE CONTRACTOR HAS LOCATED EXISTING PRESSURE SUPPLY LINE, CONTRACTOR SHALL CUT INTO AND USING ALL APPROPRIATE FITTINGS, CONNECT NEW SEGMENT OF PRESSURE SUPPLY LINE TO EXISTING AS SHOWN.

**I-06** CAP OF EXISTING PRESSURE SUPPLY LINE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF EXISTING POTABLE IRRIGATION PRESSURE SUPPLY LINE IN THIS APPROXIMATE LOCATION. ONCE THE CONTRACTOR HAS LOCATED EXISTING PRESSURE SUPPLY LINE, CONTRACTOR SHALL CUT INTO AND INSTALL CAPS AS SHOWN, SEPARATING THE TWO (2) NEW CAPS BY A MINIMUM OF 10' FROM EACH OTHER.

**I-07** NEW SLEEVE LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A NEW SLEEVE IN THIS APPROXIMATE LOCATION FOR THE NEW PORTION OF RECYCLED WATER PRESSURE SUPPLY LINE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR INCLUDING CUTTING AND PATCHING OF EXISTING HARDSCAPE BEFORE AND AFTER THE INSTALLATION OF NEW SLEEVING MATERIAL. ALL NEW RECYCLED WATER PRESSURE SUPPLY LINE INSTALLED BELOW HARDSCAPE SHALL BE SLEEVED. SLEEVES SHALL BE INSTALLED BELOW ALL EXISTING POTABLE WATER LINES. MATERIALS FOR PATCHING SHALL MEET OR EXCEED THE QUALITY OF EXISTING MATERIAL. ALL MATERIALS TO BE USED SHALL BE APPROVED BY THE OWNER PRIOR TO ORDERING AND INSTALLATION.

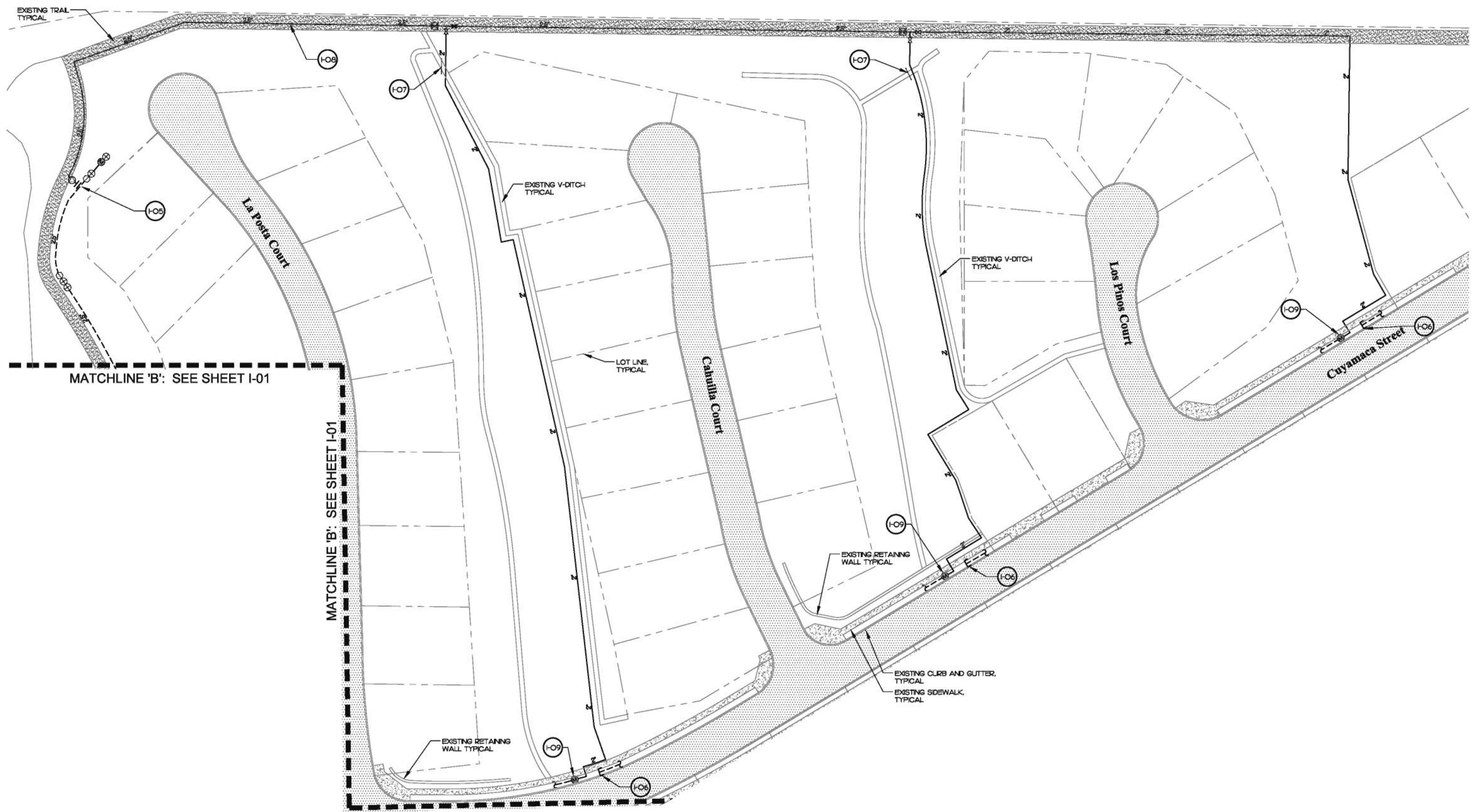
**I-08** INSTALL ALL PRESSURE SUPPLY LINE AND ANY EQUIPMENT LOCATED ON THE PRESSURE SUPPLY LINE INCLUDING BUT NOT LIMITED TO TAPPING SLEEVES, TAPPING VALVES, ISOLATION GATE VALVES, WATER METERS, SAND MEDIA FILTERS, PUMPS, PRESSURE REGULATORS, MASTER VALVES AND FLOW SENSORS.

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LANDSCAPE ARCHITECT IN THE EVENT THAT THERE ARE ANY EXTENUATING CIRCUMSTANCES WHICH WOULD CAUSE PRESSURE SUPPLY LINE OR EQUIPMENT NOT TO BE INSTALLED AS SHOWN ON THE PLANS. CONTRACTOR SHALL MARK MAINLINE ROUTE FOR APPROVAL PRIOR TO INSTALLATION. FINAL LOCATION OF ALL PRESSURE SUPPLY LINE IS TO BE APPROVED BY THE LANDSCAPE ARCHITECT, HOA REPRESENTATIVE OR TOWN REPRESENTATIVE. ONCE INSTALLED, PERFORM PRESSURE TEST AS DESCRIBED IN THE IRRIGATION SPECIFICATIONS PRIOR TO BACKFILLING TRENCH.



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**IRRIGATION NOTES FOR RECYCLED WATER METER C:**

NOTES APPLY TO THIS SHEET ONLY

- I-05 CONNECTION TO EXISTING POTABLE IRRIGATION PRESSURE SUPPLY LINE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF EXISTING POTABLE IRRIGATION PRESSURE SUPPLY LINE IN THIS APPROXIMATE LOCATION. ONCE CONTRACTOR HAS LOCATED EXISTING PRESSURE SUPPLY LINE, CONTRACTOR SHALL CUT INTO, AND USING ALL APPROPRIATE FITTINGS, CONNECT NEW SEGMENT OF PRESSURE SUPPLY LINE TO EXISTING AS SHOWN.
- I-06 CAP OF EXISTING PRESSURE SUPPLY LINE. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF EXISTING POTABLE IRRIGATION PRESSURE SUPPLY LINE IN THIS APPROXIMATE LOCATION. ONCE THE CONTRACTOR HAS LOCATED EXISTING PRESSURE SUPPLY LINE, CONTRACTOR SHALL CUT INTO AND INSTALL CAPS AS SHOWN, SEPARATING THE NEW CAP AND EXISTING METER BY A MINIMUM OF 10' FROM EACH OTHER.
- I-07 NEW SLEEVE LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A NEW SLEEVE IN THIS APPROXIMATE LOCATION FOR THE NEW PORTION OF RECYCLED WATER PRESSURE SUPPLY LINE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR INCLUDING CUTTING AND PATCHING OF EXISTING HARDSCAPE BEFORE AND AFTER THE INSTALLATION OF NEW SLEEVING MATERIAL. ALL NEW RECYCLED WATER PRESSURE SUPPLY LINE INSTALLED BELOW HARDSCAPE SHALL BE SLEEVED. SLEEVES SHALL BE INSTALLED BELOW ALL EXISTING POTABLE WATER LINES. MATERIALS FOR PATCHING SHALL MEET OR EXCEED THE QUALITY OF EXISTING MATERIAL. ALL MATERIALS TO BE USED SHALL BE APPROVED BY THE OWNER PRIOR TO ORDERING AND INSTALLATION.

- I-08 INSTALL ALL PRESSURE SUPPLY LINE AND ANY EQUIPMENT LOCATED ON THE PRESSURE SUPPLY LINE, INCLUDING BUT NOT LIMITED TO TAPPING SLEEVES, TAPPING VALVES, ISOLATION GATE VALVES, WATER METERS, SAND MEDIA FILTERS, PUMPS, PRESSURE REGULATORS, MASTER VALVES AND FLOW SENSORS.  
  
 THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LANDSCAPE ARCHITECT IN THE EVENT THAT THERE ARE ANY EXTENUATING CIRCUMSTANCES WHICH WOULD CAUSE PRESSURE SUPPLY LINE OR EQUIPMENT NOT TO BE INSTALLED AS SHOWN ON THE PLANS. CONTRACTOR SHALL MARK MAINLINE ROUTE FOR APPROVAL PRIOR TO INSTALLATION. FINAL LOCATION OF ALL PRESSURE SUPPLY LINE IS TO BE APPROVED BY THE LANDSCAPE ARCHITECT, HOA REPRESENTATIVE OR TOWN REPRESENTATIVE. ONCE INSTALLED, PERFORM PRESSURE TEST AS DESCRIBED IN THE IRRIGATION SPECIFICATIONS PRIOR TO BACKFILLING TRENCH.  
  
 WHEN IT IS NECESSARY FOR THE CONTRACTOR TO INSTALL EQUIPMENT IN THE EXISTING DECOMPOSED GRANITE TRAIL, TRAFFIC RATED CONCRETE BOXES WITH CAST IRON LOCKING LIDS SHALL BE USED IN LIEU OF PLASTIC BOXES.
- I-09 EXISTING HOA SUB-METER FOR AVOCADO SLOPE. PROTECT IN PLACE. CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTION OF NEW RECYCLED PRESSURE SUPPLY LINE JUST DOWNSTREAM OF EXISTING SUB-METER (DIRECTLY TO METER) AS SHOWN USING ALL APPROPRIATE FITTINGS.

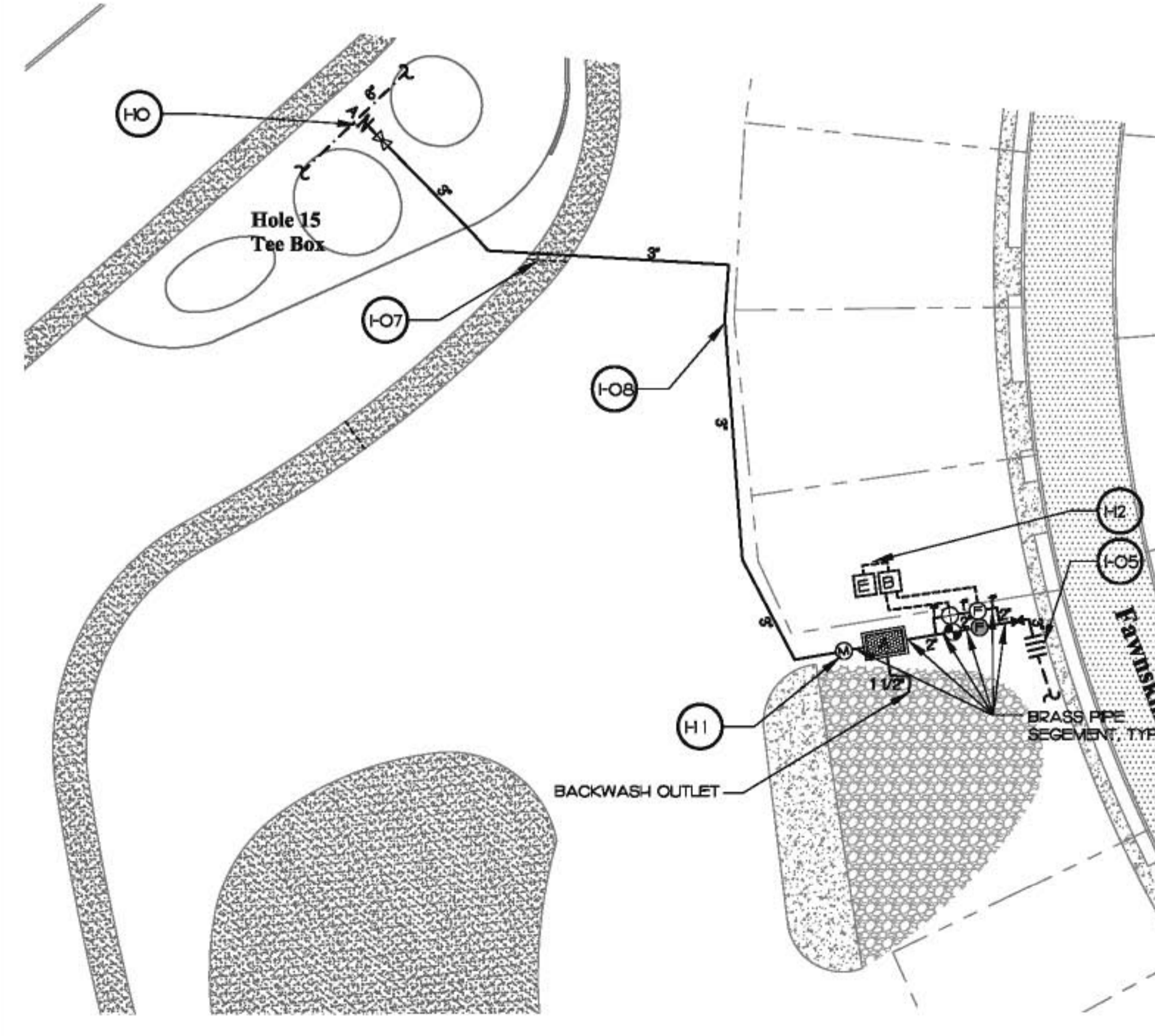
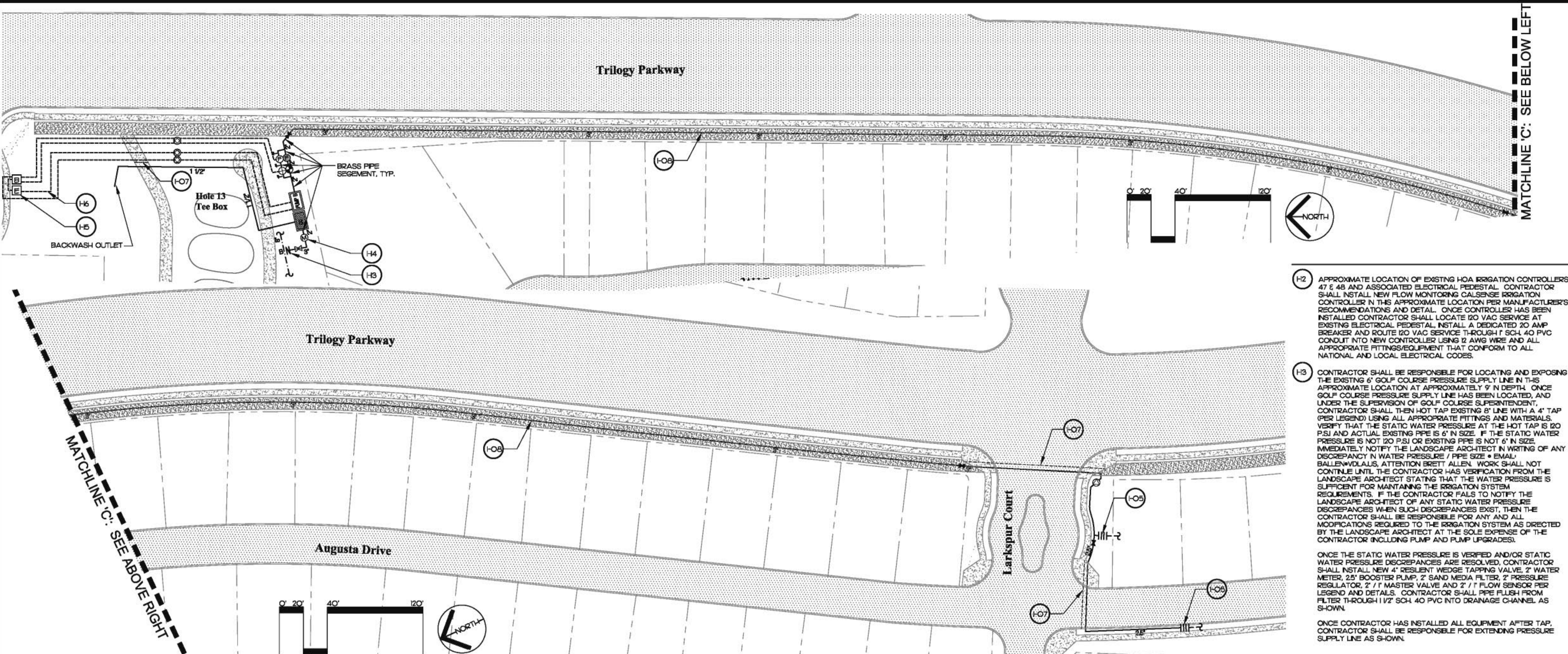


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**IRRIGATION NOTES FOR RECYCLED WATER METER A & B:**  
NOTES APPLY TO THIS SHEET ONLY

- (H-2)** APPROXIMATE LOCATION OF EXISTING HOA IRRIGATION CONTROLLERS 47 & 48 AND ASSOCIATED ELECTRICAL PEDESTAL. CONTRACTOR SHALL INSTALL NEW FLOW MONITORING CALSENSE IRRIGATION CONTROLLER IN THE APPROXIMATE LOCATION PER MANUFACTURER'S RECOMMENDATIONS AND DETAIL. ONCE CONTROLLER HAS BEEN INSTALLED CONTRACTOR SHALL LOCATE 120 VAC SERVICE AT EXISTING ELECTRICAL PEDESTAL, INSTALL A DEDICATED 20 AMP BREAKER AND ROUTE 120 VAC SERVICE THROUGH 1" SCH. 40 PVC CONDUIT INTO NEW CONTROLLER USING 12 AWG WIRE AND ALL APPROPRIATE FITTINGS/EQUIPMENT THAT CONFORM TO ALL NATIONAL AND LOCAL ELECTRICAL CODES.
  - (H-3)** CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND EXPOSING THE EXISTING 6" GOLF COURSE PRESSURE SUPPLY LINE IN THIS APPROXIMATE LOCATION AT APPROXIMATELY 9" IN DEPTH. ONCE GOLF COURSE PRESSURE SUPPLY LINE HAS BEEN LOCATED, AND UNDER THE SUPERVISION OF GOLF COURSE SUPERINTENDENT, CONTRACTOR SHALL THEN HOT TAP EXISTING 6" LINE WITH A 4" TAP (PER LEGEND) USING ALL APPROPRIATE FITTINGS AND MATERIALS. VERIFY THAT THE STATIC WATER PRESSURE AT THE HOT TAP IS 120 PSI AND ACTUAL EXISTING PIPE IS 6" IN SIZE. IF THE STATIC WATER PRESSURE IS NOT 120 PSI OR EXISTING PIPE IS NOT 6" IN SIZE, IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ANY DISCREPANCY IN WATER PRESSURE / PIPE SIZE \* EMAIL: BALLENDVAUS, ATTENTION BRETT ALLEN. WORK SHALL NOT CONTINUE UNTIL THE CONTRACTOR HAS VERIFICATION FROM THE LANDSCAPE ARCHITECT STATING THAT THE WATER PRESSURE IS SUFFICIENT FOR MAINTAINING THE IRRIGATION SYSTEM REQUIREMENTS. IF THE CONTRACTOR FAILS TO NOTIFY THE LANDSCAPE ARCHITECT OF ANY STATIC WATER PRESSURE DISCREPANCIES WHEN SUCH DISCREPANCIES EXIST, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL MODIFICATIONS REQUIRED TO THE IRRIGATION SYSTEM AS DIRECTED BY THE LANDSCAPE ARCHITECT AT THE SOLE EXPENSE OF THE CONTRACTOR (INCLUDING PUMP AND PUMP UPGRADES).
  - ONCE THE STATIC WATER PRESSURE IS VERIFIED AND/OR STATIC WATER PRESSURE DISCREPANCIES ARE RESOLVED, CONTRACTOR SHALL INSTALL NEW 4" RESILIENT WEDGE TAPPING VALVE, 2" WATER METER, 25' BOOSTER PUMP, 2" SAND MEDIA FILTER, 2" PRESSURE REGULATOR, 2" / 1" MASTER VALVE AND 2" / 1" FLOW SENSOR PER LEGEND AND DETAILS. CONTRACTOR SHALL PPE FLUSH FROM FILTER THROUGH 1/2" SCH. 40 PVC INTO DRAINAGE CHANNEL AS SHOWN.
  - ONCE CONTRACTOR HAS INSTALLED ALL EQUIPMENT AFTER TAP, CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING PRESSURE SUPPLY LINE AS SHOWN.
  - (H-4)** THE IRRIGATED AREA TO BE SERVICED THROUGH RECYCLED WATER METER B CONSISTS OF 245,844 SQ. FT. OR 5.64 ACRES AND HAS A PEAK FLOW THROUGH THE METER OF 84 GPM. THE ESTIMATED YEARLY WATER USE IS 16.57 ACRE FEET OR 7,265.58 HCF. THE INFORMATION PRESENTED IN THE FOLLOWING HYDRAULIC SUMMARY IS BASED UPON PRESSURES PROVIDED BY TRILogy HOA.
- |                        |        |
|------------------------|--------|
| STATIC WATER PRESSURE  | 80.00  |
| EQUIPMENT LOSSES       | 25.26  |
| ELEVATION LOSSES       | 39.84  |
| PSI REQ. AT TE-N       | 85.00  |
| TOTAL WORKING PRESSURE | 150.09 |
| BOOST REQUIRED         | 42.09  |
- CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING TWO (2) 1" DIAMETER CONDUITS FOR MASTER VALVE AND FLOW SENSOR WIRES AND ONE (1) 1" CONDUIT FOR PUMP CONTROL FROM NEW CONTROLLER 'B' TO THIS APPROXIMATE LOCATION AND THE CONNECTION OF THESE WIRES TO THE NEW MASTER VALVES, FLOW SENSORS AND PUMP WITH APPROVED WIRE CONNECTORS. INSTALL PULL BOXES ALONG FLOW SENSOR / MASTER VALVE AND PUMP CONDUIT RUN AS SHOWN. SPLICES IN FLOW SENSOR / MASTER VALVE AND PUMP CONTROL WIRE WIRE SHALL ONLY BE MADE WHEN ABSOLUTELY NECESSARY.
  - WIRE COLORS FOR MASTER VALVE / FLOW SENSORS SHALL BE AS FOLLOWS:  
MASTER VALVE #1: BLUE / WHITE WITH BLUE STRIPE  
MASTER VALVE #2: BLUE / WHITE WITH BLUE STRIPE  
FLOW SENSOR #1: BLACK / RED  
FLOW SENSOR #2: BLACK WITH RED STRIPE / RED WITH BLACK STRIPE  
PUMP: YELLOW / WHITE WITH YELLOW STRIPE
  - (H-5)** APPROXIMATE LOCATION OF EXISTING HOA IRRIGATION CONTROLLERS 66 & 67 AND ASSOCIATED ELECTRICAL PEDESTAL. CONTRACTOR SHALL INSTALL NEW FLOW MONITORING CALSENSE IRRIGATION CONTROLLER IN THIS APPROXIMATE LOCATION PER MANUFACTURER'S RECOMMENDATIONS AND DETAIL. ONCE CONTROLLER HAS BEEN INSTALLED CONTRACTOR SHALL LOCATE 120 VAC SERVICE AT EXISTING ELECTRICAL PEDESTAL, INSTALL A DEDICATED 20 AMP BREAKER AND ROUTE 120 VAC SERVICE THROUGH 1" SCH. 40 PVC CONDUIT INTO NEW CONTROLLER USING 12 AWG WIRE AND ALL APPROPRIATE FITTINGS/EQUIPMENT THAT CONFORM TO ALL NATIONAL AND LOCAL ELECTRICAL CODES.
  - (H-6)** ELECTRICAL SUPPLY TO NEW BOOSTER PUMP. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING ELECTRICAL PEDESTAL AT EXISTING HOA IRRIGATION CONTROLLERS 66 & 67 IN THIS APPROXIMATE LOCATION. ONCE ELECTRICAL PEDESTAL HAS BEEN LOCATED, CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING NEW BREAKERS FOR BOOSTER PUMP SYSTEM AND EXTENDING WIRE THROUGH 1" PVC SCH. 40 CONDUIT TO PUMP LOCATION. WIRE AND NEW BREAKERS SHALL BE SIZED APPROPRIATELY WITH PUMP AMPERAGE AND INSTALLED WITH ALL APPROPRIATE FITTINGS / EQUIPMENT THAT CONFORM TO ALL NATIONAL AND LOCAL ELECTRICAL CODES.
- |                        |        |
|------------------------|--------|
| STATIC WATER PRESSURE  | 25.00  |
| EQUIPMENT LOSSES       | 5.65   |
| ELEVATION LOSSES       | 0.00   |
| PSI REQ. AT TE-N       | 85.00  |
| TOTAL WORKING PRESSURE | 100.65 |
- CONTRACTOR SHALL BE RESPONSIBLE FOR EXTENDING TWO (2) 1" DIAMETER CONDUITS FOR MASTER VALVE AND FLOW SENSOR WIRES FROM NEW CONTROLLER 'A' TO THIS APPROXIMATE LOCATION AND THE CONNECTION OF THESE WIRES TO THE NEW MASTER VALVES AND FLOW SENSORS WITH APPROVED WIRE CONNECTORS. INSTALL PULL BOXES ALONG FLOW SENSOR / MASTER VALVE CONDUIT RUN AS SHOWN. SPLICES IN FLOW SENSOR / MASTER VALVE WIRE SHALL ONLY BE MADE WHEN ABSOLUTELY NECESSARY.
  - WIRE COLORS FOR MASTER VALVE / FLOW SENSORS SHALL BE AS FOLLOWS:  
MASTER VALVE #1: BLUE / WHITE WITH BLUE STRIPE  
MASTER VALVE #2: BLUE / WHITE WITH BLUE STRIPE  
FLOW SENSOR #1: BLACK / RED  
FLOW SENSOR #2: BLACK WITH RED STRIPE / RED WITH BLACK STRIPE

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# IRRIGATION LEGEND:

SYMBOL	MANUFACTURER	MODEL NUMBER	DESCRIPTION	DETAIL
ANCH-B4	MUELLER	O604H304SS0699	6" X 4" STAINLESS STEEL TAPPING SLEEVE	1
	MUELLER	T-2360-16	4" MECHANICAL JOINT X FLANGED TAPPING VALVE	1
	LEEMCO	LMJ-400	LMJ SERIES RESTRAINTS	1
	LEEMCO	SB-43SR	4" X 3" BELL X BELL REDUCER	1
BN-B4	MUELLER	O604H304SS0906	6" X 4" STAINLESS STEEL TAPPING SLEEVE	1
	MUELLER	T-2360-16	4" MECHANICAL JOINT X FLANGED TAPPING VALVE	1
	LEEMCO	LMJ-400	LMJ SERIES RESTRAINTS	1
	LEEMCO	SB-43SR	4" X 3" BELL X BELL REDUCER	1
NOTE: ALL TAPPING VALVES, FITTINGS AND RESTRAINTS SHALL BE EPOXY COATED.				
M	MASTER METER	2" MULTI JET	2" BOLTED FLANGE WATER METER WITH PROXIMITY / WAND READ OPTION	2
	LEEMCO	FR-31MA	3" BELL X 2" MPT RESTRAINED MALE ADAPTER	2
F	YARDNEY	1816-2 ADD OPTION: 3M SKOTCH-KOTE 134 FUSION BONDED EPOXY	SAND MEDIA FILTER	3
	YARDNEY	1816-3 ADD OPTION: 3M SKOTCH-KOTE 134 FUSION BONDED EPOXY	SAND MEDIA FILTER	4
P	BARRETT	BC65J-3-2-2.5/VFD-F	BOOSTER PUMP	5
	BARRETT	BC65J-5-2-2.5/VFD-F	BOOSTER PUMP	5
W	WILKINS	500HLR	WATER PRESSURE REDUCING VALVE	6
G	GRISWOLD	225OE SERIES	2" NORMALLY CLOSED MASTER VALVE	7
	GRISWOLD	225OE SERIES	1" NORMALLY CLOSED MASTER VALVE	7
C	CALSENSE	FM-2B	2" BRASS TEE FLOW SENSOR	8
	CALSENSE	FM-B	1" BRASS TEE FLOW SENSOR	8
L	LEEMCO	LMV SERIES	ISOLATION GATE VALVE (LINE SIZE)	9
N	NBCO	T-18-K	ISOLATION GATE VALVE WITH CROSS HANDLE (LINE SIZE)	10
V	VAL-MATIC	202C.2	AIR / VACUUM RELIEF VALVE	11
---	APPROVED	PVC SCH. 40	IRRIGATION SLEEVE (SEE SPECS.) (PURPLE PIPE)	12, 19, 22 & 23
---	APPROVED	PVC SCH. 40	2" AND SMALLER NON-POTABLE PRESSURE SUPPLY LINE (PURPLE PIPE - GLUED)	12 - 18
---	APPROVED	PVC CL200 BG	2 1/2" - 3" NON-POTABLE PRESSURE SUPPLY LINE (PURPLE PIPE - BELL AND GASKET)	12 - 18
	APPROVED	APPROVED	CONNECTION TO EXISTING PRESSURE SUPPLY LINE (PURPLE PIPE)	12 - 18
---	APPROVED	APPROVED	CAP OF EXISTING HOA PRESSURE SUPPLY LINE	12 - 18
---	NOT SHOWN	LEEMCO	PIPE FITTINGS AND JOINT RESTRAINTS (2 1/2" AND ABOVE) (USE AS REQUIRED BY MANUFACTURER'S SPECIFICATIONS)	15 - 18
A B C	CALSENSE VIT PRODUCTS	CS3-8-S OP-CAL	CALSENSE FLOW MANAGING CONTROLLER & ENCLOSURE QUICK PAD FOR CALSENSE ENCLOSURE	20 20
⊙	APPROVED	SEE SPECS.	PULL BOX	21
---	APPROVED	PVC SCH. 40	1" ELECTRICAL CONDUIT	13
---	EXISTING	EXISTING	NON-POTABLE GOLF COURSE PRESSURE SUPPLY LINE	
---	EXISTING	EXISTING	HOA POTABLE PRESSURE SUPPLY LINE	
⊕	EXISTING	EXISTING	HOA ELECTRIC CONTROL VALVE	
⊗	EXISTING	EXISTING	HOA QUICK COUPLER	

--- CONSTRUCTION NOTE

# GENERAL IRRIGATION NOTES:

- THESE PLANS WERE PREPARED BY VDLA USING BASE INFORMATION OBTAINED FROM SITE MEASUREMENTS AND AERIAL PHOTOGRAPHS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ACCURACY OF THIS BASE COMPARED TO ACTUAL FIELD CONDITIONS PRIOR TO ORDERING MATERIALS AND/OR BEGINNING WORK AND IMMEDIATELY NOTIFYING THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES. IN THE EVENT THAT THE CONTRACTOR FAILS TO VERIFY THE ACCURACY OF THE BASE INFORMATION AND/OR FAILS TO IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT OF DISCREPANCIES PRIOR TO ORDERING MATERIALS AND/OR BEGINNING WORK, THEN THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ANY AND ALL ADDITIONAL LABOR AND MATERIALS AS DIRECTED BY THE LANDSCAPE ARCHITECT TO RESOLVE SUCH DISCREPANCIES AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR REPLACING ALL EQUIPMENT AND/OR MATERIALS OUTSIDE OF THE LIMIT OF WORK WHICH ARE DAMAGED DURING CONSTRUCTION WITH MATERIALS IN-KIND, AT NO ADDITIONAL COST TO THE OWNER.
- REFER TO THE IRRIGATION DETAILS, LEGEND AND SPECIFICATIONS FOR PRODUCT INSTALLATION AND EXECUTION PROCEDURES.
- SYSTEM FLOW VELOCITIES OF NEW PIPE AND EQUIPMENT SHALL NOT EXCEED 5 FEET PER SECOND. IN THE EVENT THAT IRRIGATION LAYOUT IS ALTERED DURING CONSTRUCTION, THE CONTRACTOR ASSUMES THE RESPONSIBILITY OF SIZING PIPE ACCORDINGLY, AT NO ADDITIONAL COST TO THE OWNER.
- PRIOR TO REQUESTING A WALK THROUGH FOR SUBSTANTIAL COMPLETION FROM LANDSCAPE ARCHITECT AND TWMD, ALL REQUIREMENTS IN THE CONSTRUCTION NOTES AND SPECIFICATIONS SHALL BE COMPLETED BY THE CONTRACTOR. REFER TO SPECIFICATIONS FOR QUALITY CONTROL MEASURES.
- ULTIMATE MAINTENANCE RESPONSIBILITY WILL BE THE TRILOGY HOA.
- AIR RELEASE VALVES ARE SHOWN IN APPROXIMATE LOCATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AIR RELEASE VALVE AT HIGHEST POINT ON PRESSURE SUPPLY LINE.
- ALL PIPE AND WIRE INSTALLED UNDER HARDSCAPE SHALL BE IN SLEEVEING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RE-PROGRAMMING ALL IRRIGATION CONTROLLERS SO THAT FLOW THROUGH NEW RECYCLED WATER IRRIGATION PRESSURE SUPPLY LINES DO NOT EXCEED SYSTEM CAPACITIES OF 5 FEET PER SECOND AT ANY TIME DURING IRRIGATION CYCLES.

# RECYCLED WATER NOTES:

- ALL PUBLIC FACILITIES SUCH AS COMFORT STATIONS, DRINKING FOUNTAINS, ETC. SHALL BE PROTECTED FROM SPRAY AND/OR MISTING BY RECLAIMED WATER.
- NO PONDING, RUNOFF OR OVERSPRAY IS PERMITTED. ADJUST ALL SPRINKLER HEADS TO PREVENT OVERSPRAYING ONTO SIDEWALKS, STREETS AND PRIVATE LOTS.
- ON-SITE CROSS-CONNECTION BETWEEN RECLAIMED WATER LINES AND POTABLE IS STRICTLY PROHIBITED.
- QUICK COUPLING VALVES USED IN RECLAIMED WATER SYSTEMS SHALL CONFORM TO THE FOLLOWING:
  - IN ORDER TO PREVENT UNAUTHORIZED USE, THE VALVE SHALL BE OPERATED ONLY WITH A SPECIAL QUICK COUPLER KEY WITH AN ACRME T-HEAD FOR OPENING AND CLOSING THE VALVE.
  - THE COVER SHALL BE PERMANENTLY ATTACHED TO THE QUICK COUPLING VALVES. IT SHALL BE PURPLE RUBBER OR VINYL.
  - LOCKING RUBBER COVERS ARE REQUIRED.
- NO SUBSTITUTION OF PIPE MATERIALS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY TEMESCAL VALLEY WATER DISTRICT AND THE LANDSCAPE ARCHITECT.
- INSTALL APPROVED WARNING TAPE OVER ALL PRESSURE RECLAIMED WATER LINES. STENCIL AND COLOR CODE (PURPLE PANTONE 522) ALL IRRIGATION PIPE. ORIENT THE STENCILING TO THE TOP OF THE TRENCH.
- PROVIDE A MINIMUM OF AT LEAST 18 INCHES OF COVERING OVER ALL PIPING. SEE SPECIFICATIONS AND DETAILS FOR EXACT DEPTHS.
- OPERATE THE IRRIGATION SYSTEM ONLY BETWEEN 900 PM AND 600 AM.
- WHEN POTABLE WATER LINES AND RECLAIMED WATER LINES CROSS, THE RECLAIMED WATER LINE SHALL BE INSTALLED WITHIN A PROTECTIVE SLEEVE. THE SLEEVE SHALL EXTEND 10 FEET FROM EACH SIDE, FROM THE CENTER LINE OF POTABLE LINE, FOR A TOTAL OF 20 FEET.
- MAINTAIN A 10' HORIZONTAL SEPARATION BETWEEN POTABLE WATER AND RECLAIMED WATER OR SEWER LINES. INSTALL SEWER LINE BELOW RECLAIMED WATER LINE, BELOW THE POTABLE WATER LINE.
- PROVIDE A MINIMUM OF 12" VERTICAL SEPARATION BETWEEN POTABLE / RECLAIMED WATER / SEWER.
- INSTALL PURPLE COLORED PANTONE 522 MATERIAL FOR ALL ABOVE GROUND IRRIGATION FACILITIES:
  - VALVE AND OTHER ON GRADE BOXES
  - SPRINKLER HEADS - INTEGRAL COLOR PLASTIC.
- TAG ALL VALVES AND OTHER BELOW GRADE FACILITIES WITHIN BOXES WITH PERMANENT RECLAIMED WATER LABELS THAT ID THE FACILITY AS 'RECLAIMED WATER - DO NOT DRINK' IN BOTH SPANISH AND ENGLISH. ATTACH THE LABEL WITH EITHER STAINLESS STEEL WIRE OR SELF LOCKING PLASTIC TIES.
- HOA / CONTRACTOR SHALL CONDUCT A CROSS-CONNECTION TEST AND COVERAGE TEST AS DIRECTED BY TEMESCAL VALLEY WATER DISTRICT RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH PRIOR TO THE USE OF ANY RECYCLED WATER.
- AN ANNUAL CROSS CONNECTION CONTROL INSPECTION WILL BE DONE BY TEMESCAL VALLEY WATER DISTRICT TO APPROVAL BY RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH. COPIES OF THE INSPECTION REPORTS WILL BE FORWARDED TO THE NON-INSPECTION PARTY.
- PRIOR TO CONVERSION TO RECLAIMED WATER, AN ON-SITE SUPERVISOR SHALL BE DESIGNATED IN WRITING. THIS INDIVIDUAL SHALL BE FAMILIAR WITH PUMPING SYSTEMS WITHIN THE PROPERTY AND WITH THE BASIC SPECIFIC REQUIREMENTS OF RECLAIMED WATER SYSTEMS. THE DESIGNATED 'SITE SUPERVISOR' SHALL ATTEND THE COUNTY WATER AUTHORITY'S CLASS FOR RECLAIMED WATER SITE SUPERVISORS. COPIES OF THE SITE SUPERVISOR'S CERTIFICATE WITH A 24-HOUR CONTACT NUMBER SHALL BE PROVIDED TO RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH.
- IN CASE OF EMERGENCY CONTACT: JEFF PAPE AFTER HOURS CONTACT: (951) 277-4144
- A PHYSICAL SEPARATION SHALL BE PROVIDED BETWEEN ADJACENT AREAS OF IRRIGATION WITH RECYCLED WATER AND POTABLE WATER. SEPARATION SHALL BE PROVIDED BY CONCRETE MOW CURBS, CHAIN FENCES OR OTHER MEANS AS APPROVED BY THE WATER DISTRICT AND DEPARTMENT OF ENVIRONMENTAL HEALTH.
- CALL OUT ON THE PLANS IF THERE ARE OR ARE NOT ANY DRINKING FOUNTAINS AND/OR DESIGNATED OUTDOOR EATING AREAS ON THE SITE.
- NON-DESIGNATED USE AREAS SHALL BE PROTECTED FROM CONTACT WITH RECLAIMED WATER, WHETHER BY WINDSHOWN SPRAY OR BY DIRECT APPLICATION THROUGH IRRIGATION OR OTHER USE. LACK OF PROTECTION, WHETHER BY DESIGN, CONSTRUCTION PRACTICE OR SYSTEM OPERATIONS IS STRICTLY PROHIBITED.
- THE HOURS OF IRRIGATION WITH DISINFECTED TERTIARY MAY BE MODIFIED BY THE LOCAL AUTHORITY. IRRIGATION DURING PUBLIC USE PERIODS WITH DISINFECTED TERTIARY RECLAIMED WATER SHALL BE UNDER THE SUPERVISION OF THE DESIGNATED USER SUPERVISOR. IRRIGATION WITH WATER OF A LESSER QUALITY THAN DISINFECTED TERTIARY RECLAIMED WATER SHALL BE BETWEEN HOURS OF 10:00 PM AND 6:00 AM.
- ALL PUBLIC AND PRIVATE POTABLE WATER MAINS INCLUDING FIRE MAINS AND ANY WATER WELLS AND WATER COURSES WITHIN THE RECLAIMED WATER PROJECT SHALL BE SHOWN ON THE PLANS.
- A TEMESCAL VALLEY WATER DISTRICT REPRESENTATIVE SHALL CONDUCT INSPECTIONS AS DIRECTED BY THE RIVERSIDE COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH PRIOR TO ANY USE OF RECLAIMED WATER.
- EDUCATE ALL MAINTENANCE PERSONNEL ON A CONTINUOUS BASIS OF THE PRESENCE OF RECYCLED WATER. PERSONNEL MUST BE INFORMED THAT RECLAIMED WATER IS MEANT FOR IRRIGATION PURPOSES ONLY, AND IS NOT APPROVED FOR DRINKING PURPOSES, HAND WASHING, CLEANING OF TOOLS, ETC. GIVEN THE HIGH TURNOVER RATE OF EMPLOYEES IN THE LANDSCAPE INDUSTRY, IT IS IMPORTANT THAT THE INFORMATION BE DISSEMINATED ON AN ALMOST DAILY BASIS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH TEMESCAL VALLEY WATER DISTRICT'S RULES AND REGULATIONS.
- BEST MANAGEMENT PRACTICES SHALL BE USED TO ELIMINATE OR CONTROL TO THE BEST EXTENT POSSIBLE PONDING, RUN-OFF, OVERSPRAY AND MISTING.
- HOSE BIBS ARE STRICTLY PROHIBITED.
- IRRIGATION HEADS SHALL BE RELOCATED OR ADJUSTED TO MINIMIZE OR ELIMINATE OVER-SPRAYING ON SIDEWALKS, STREETS AND NON-DESIGNATED USE AREAS.
- ON RECYCLED WATER SYSTEMS, ALL APPURTENANCES (SPRINKLER HEADS, VALVE BOXES, ETC. SHALL BE COLORED PURPLE PER AWWA GUIDELINES AND SECTION 16685 OF THE CALIFORNIA HEALTH AND SAFETY CODE)
- ALL MAINLINE PIPES SHALL HAVE WARNING TAPE PER TEMESCAL VALLEY WATER DISTRICT'S RULES AND REGULATIONS.
- BURIAL OF ALL WIRING AND PIPING SHALL MEET TEMESCAL VALLEY WATER DISTRICT'S RULES AND REGULATIONS.

- CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION, FEES AND OBTAINING ALL NECESSARY PERMITS REQUIRED FOR RECYCLED WATER CONVERSION PROJECT PER STATE, COUNTY, CITY AND WATER DISTRICT REQUIREMENTS.
  - CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR COORDINATION AND FOR PROVIDING NOTIFICATION TO ANY LOCAL OR STATE AGENCY THAT THE EXISTING POTABLE SYSTEM IS TO BE CONVERTED TO RECYCLED. CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS WITH THE APPROPRIATE AGENCIES AND CONFORM TO ALL AGENCIES GUIDELINES AND REGULATIONS FOR CONVERSION FROM POTABLE WATER TO RECYCLED WATER.
- CONTRACTOR SHALL NOT INSTALL ANY EQUIPMENT THAT EXCEEDS 30' IN HEIGHT WITHIN SIGHT RESTRICTED AREAS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MODIFICATIONS TO THE EXISTING SYSTEM AND ITS ASSOCIATED COMPONENTS SO THAT IT BECOMES A COMPLIANT WITH ALL STATE AND LOCAL GOVERNING AGENCY'S RULES AND REGULATIONS FOR THE USE AND DISTRIBUTION OF RECYCLED WATER. THIS INCLUDES, BUT IS NOT LIMITED TO: SIGNAGE, SLEEVEING, CONVERSION OF EQUIPMENT TO PURPLE TAGS, SPRAY HEAD CAPS, VALVE BOX LIDS, ETC.
  - POP UP ROTORS: REMOVE AND REPLACE RUBBER CAPS WITH PURPLE.
  - ROTOR OR SPRAY HEAD ON RISER: ADD RECYCLED WATER WARNING STICKER TO RISER.
  - POP UP SPRAY HEAD: ADD CLIP ON PURPLE RING TO CAP, OR REPLACE CAP COMPLETELY.
  - QUICK COUPLERS: REPLACE ALL QUICK COUPLERS WITH SIGNATURE CONTROL SYSTEMS 7645A0CME.
  - PIPE ON GRADE: ADD RECYCLED WATER WARNING STICKER.
  - IRRIGATION CONTROLLER: ADD RECYCLED WATER WARNING STICKER.
  - VALVE BOXES: REMOVE AND REPLACE LIDS WITH PURPLE LID OF LIKE KIND.
  - COMPLETELY REMOVE AND REPLACE CRUSHED OR DAMAGED VALVE BOXES.
  - ELEC. CONTROL VALVES: ADD PURPLE HANDLES AND/OR PURPLE "DO NOT DRINK" TAGS.
- DUE TO THE FACT THAT THERE MAY BE EXISTING UTILITIES (NOT SHOWN ON PLAN) IN AREAS OF NEW WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL EXISTING UTILITIES. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL STATE / LOCAL RULES AND REGULATIONS GOVERNING THE USE OF RECYCLED WATER AND INSTALL THIS SYSTEM SO THAT IT MEETS OR EXCEEDS SUCH RULES AND REGULATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH TEMESCAL VALLEY WATER DISTRICT PRIOR TO BEGINNING TRENCHING OPERATIONS IN AREAS WHERE LLWD PIPELINES CURRENTLY EXIST.
- RECYCLED WATER PRESSURE SUPPLY LINE FITTINGS HAVE NOT BEEN SHOWN. CONTRACTOR SHALL INSTALL ALL FITTINGS AND JOINT RESTRAINTS ALONG PRESSURE SUPPLY LINE IN ACCORDANCE WITH DETAILS AND PER MANUFACTURER'S RECOMMENDATIONS.
- ALL VALVE BOXES LOCATED IN THE TRAIL SHALL BE TRAFFIC RATED CONCRETE. LOCATION SHALL BE APPROVED PRIOR TO INSTALLATION.
- ALL PRESSURE SUPPLY LINE CAPS ON SITE SHALL REQUIRE SHALL REQUIRE A MINIMUM OF 3 CUBIC FEET OF THRUST BLOCKING EACH.

# PUMP SPECIFICATION:

## BARRETT ENGINEERED PUMPS SPECIALISTS IN PUMPS AND PUMPING SYSTEMS

PROJECT: TRILOGY HOA April 21, 2016

### SYSTEM DESIGN PARAMETERS - POC 'B'

IBPCO-7.5-2.2.5/VFD-F System Model Number	84 GPM System Design Flow Rate	150 PSI System Design Pressure	2 1/2 INCH System Piping Size
100 PSI Minimum Suction Pressure	230 VAC System Electrical Voltage	1 PHASE 60 Hz System Electrical Phase and Frequency	
PACO 1570 Pump Model Number	84 GPM Pump Capacity (GPM)	130 FEET Pump Total Head (Feet)	
7.5 HP Pump Horsepower	3500 RPM Pump RPM	40 AMPS @ 230/1 ph System Full Load Amperage	

### SYSTEM DESIGN PARAMETERS - POC 'C'

IBCR20-10-2-2.5/VFD-F System Model Number	115 GPM System Design Flow Rate	150 PSI System Design Pressure	2 1/2 INCH System Piping Size
75 PSI Minimum Suction Pressure	230 VAC System Electrical Voltage	1 PHASE 60 Hz System Electrical Phase and Frequency	
CR20-4 Pump Model Number	115 GPM Pump Capacity (GPM)	185 FEET Pump Total Head (Feet)	
10 HP Pump Horsepower	3500 RPM Pump RPM	49 AMPS @ 230/1 ph System Full Load Amperage	

### BOOSTER PUMP ASSEMBLY

- A simplex water pressure booster system as designed and fabricated by Barrett Engineered Pumps (619) 232-7867. The system shall be a completely prefabricated system with pump, piping, electrical and structural elements. The entire booster pump assembly shall be UL Listed and Approved.
  - Pump shall be:
    - (C### Series) Single stage end suction close coupled centrifugal, cast iron bronze fitted construction, equipped with mechanical shaft seal, back pullout design. Impeller shall be keyed and locked to the shaft with a hex head impeller nut and washer. Pump shaft shall be high strength S.A.E. 1045 carbon steel protected in the stuffing box area by a replaceable bronze shaft sleeve. Pump shall be directly coupled to a C-face electric motor.
    - (CR Series) Vertical Multi-Stage Centrifugal Pump construction shall be cast iron stainless fitted with cast iron casing, stainless steel impellers and bowls. Pump shall be equipped with tungsten carbide mechanical seal. Pump shall be directly coupled to a C-face electric motor.
  - Electric motor shall be of the squirrel cage induction type suitable for full voltage starting. Motor shall be ODP to aid in cooling. Electric motor shall be rated for continuous service. The motor shall have horsepower ratings such that the motor will carry the maximum possible load to be developed under the designed pumping conditions and not overload the motor beyond the nameplate rating of the motor. Motor shall have a 1.15 service factor. The motor shall conform to the latest NEMA Standards for motor design and construction.
  - Pump Control Panel shall have a NEMA3R plain front non-metallic enclosure with padlock latches. This includes power and control re-settable thermal circuit breakers, heavy duty magnetic starter with adjustable overload protection, Hand-Off-Auto switch to select mode of operation, and heavy duty numbered terminal strips for power and control wiring lead terminations.
  - If 24V control started, a Metal oxide varistor protected pump start relay shall be incorporated in panel to start pump with signal from an irrigation controller.
  - All system piping shall be Schedule 10S 304 stainless steel. All major fittings shall be 304 stainless steel with flanges to allow for system disassembly or ma or component removal. All instrumentation fittings shall be 304SS. System shall incorporate an integral full pipe size bypass line with isolation valve to allow for pump removal and repair without disrupting water supply to system.
  - Isolation valves shall be all stainless quarter turn ball valves with hard chrome ball on lines 2" and less. Isolation valves shall be lug style butterfly valves with Buna-N elastomeric seats, ductile iron nickel coated disc, and stainless steel stem with handle and 10 position galvanized memory plate on lines 2 1/2" and greater.
  - Gauges shall be 2 1/2" diameter face, glycerin filled with stainless casing and brass internals.
  - Flow switch shall be a 316 stainless steel and solid state thermal sensor designed to measure change in flow velocity and in temperature. The flow switch shall include an integrated bar graph with 10 LED lights and shall be capable of providing indication of flow (green), closed (orange), and open (red) conditions.
  - Pump system shall be mounted on a structural aluminum skid with mounting flanges on front and back to allow for mounting of skid to concrete pad. Skid equipped with pipe support on suction and discharge piping. All nuts and bolts and washers shall be stainless steel on skid and piping. Skid shall include mounting hardware for integral aluminum enclosure.
  - The system enclosure shall be vandal and weather resistant, marine grade aluminum alloy 5052-H32 construction with rectangular punch-outs for viewing and heat dissipation. The enclosure shall be low profile hinged top design with padlock provision. The cover shall be secured to the concrete pad with stainless steel hardware. The enclosure shall measure 30" x 42" x 42" and concrete pad dimensions shall be 42" x 54" x 4". The enclosure shall be as manufactured by V.I.T. Products, Inc. and shall be UL Listed and Approved.
  - Pump Assembly shall include the following option(s):
    - (VFD-F) Where specified by the System Design Parameters, an Fuji Variable Frequency Drive system to receive feedback signal from system mounted stainless steel pressure transducer, and in conjunction with internal software driven PID control loop maintain customer adjustable constant system discharge pressure by varying the speed of the pump in response to varying system load.
- The services of a factory representative or trained service professional shall be made available on the job site to check installation and perform the startup and instruct the operating personnel. A startup report containing voltage and amperage readings, suction and discharge pressure readings, estimated flow conditions, and general operating characteristics shall be submitted to the Owner.

- One electronic set of operating and maintenance manual shall be provided to the owner after startup and shall include parts manuals for major components, performance curve for pump, general sequence of operation, and electrical schematic for control panel.
- The warranty period shall be a non-prorated period of 36 months from date of purchase.

P.O. Box 13130 San Diego CA 92170-3130 • 1695 National Ave. San Diego CA 92113  
Phone (619) 232-7867 • FAX (619) 232-3029  
Represented by: Green Product Sales • (949) 584-7311 • gps10@earthlink.net

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Registered Landscape Architect  
Cert. No. 3791 Exp. 11-30-2017

PROJECT NUMBER: 16-666

AUTOCADD FILE:  
P:\06658 Trilog HOA\CADD\TRILOGY\_PRR

DATE: APRIL 21, 2016

DRAWN BY: BJA

CHECKED BY: YH

PROJECT TITLE: TRILOGY HOA RECYCLED WATER CONVERSION PLAN

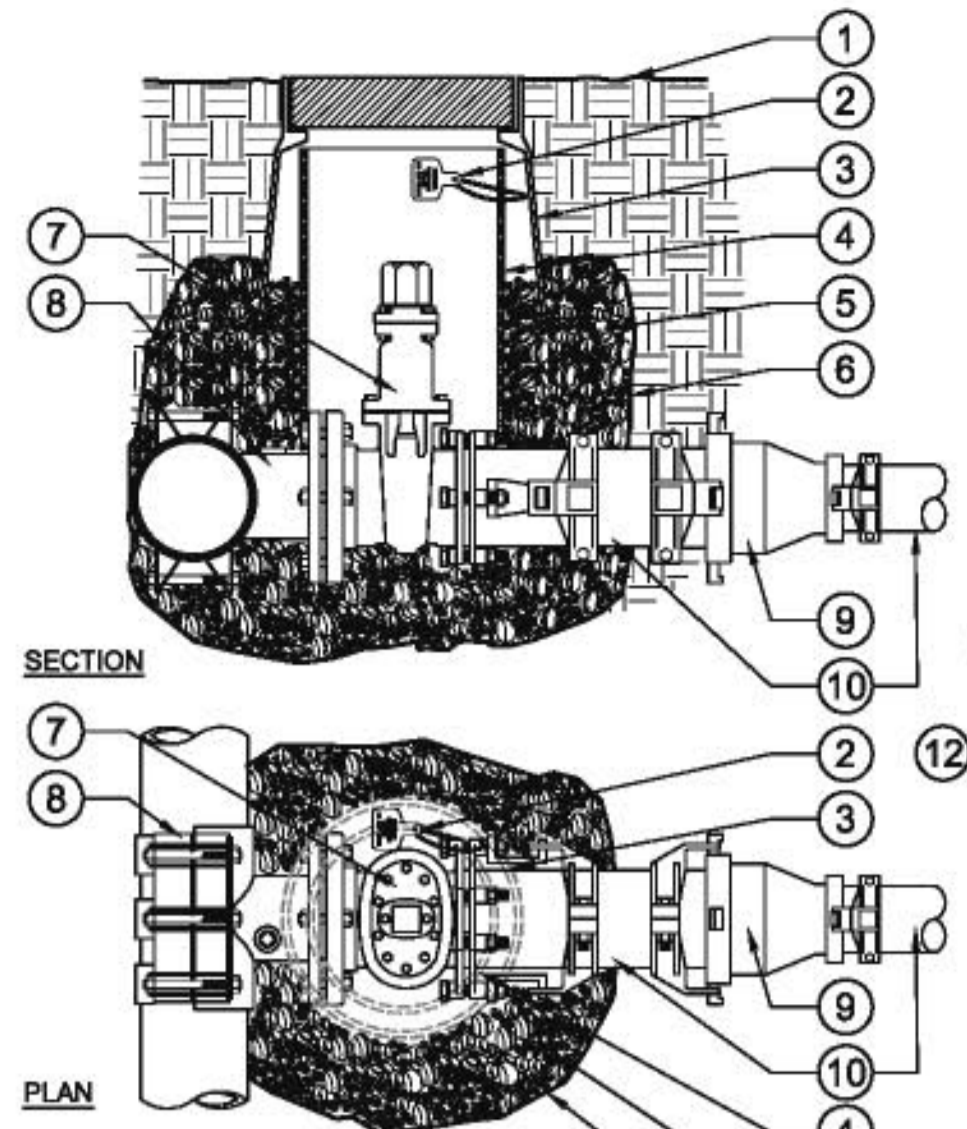
SHEET TITLE: RECYCLED WATER CONVERSION IRRIGATION LEGEND AND NOTES

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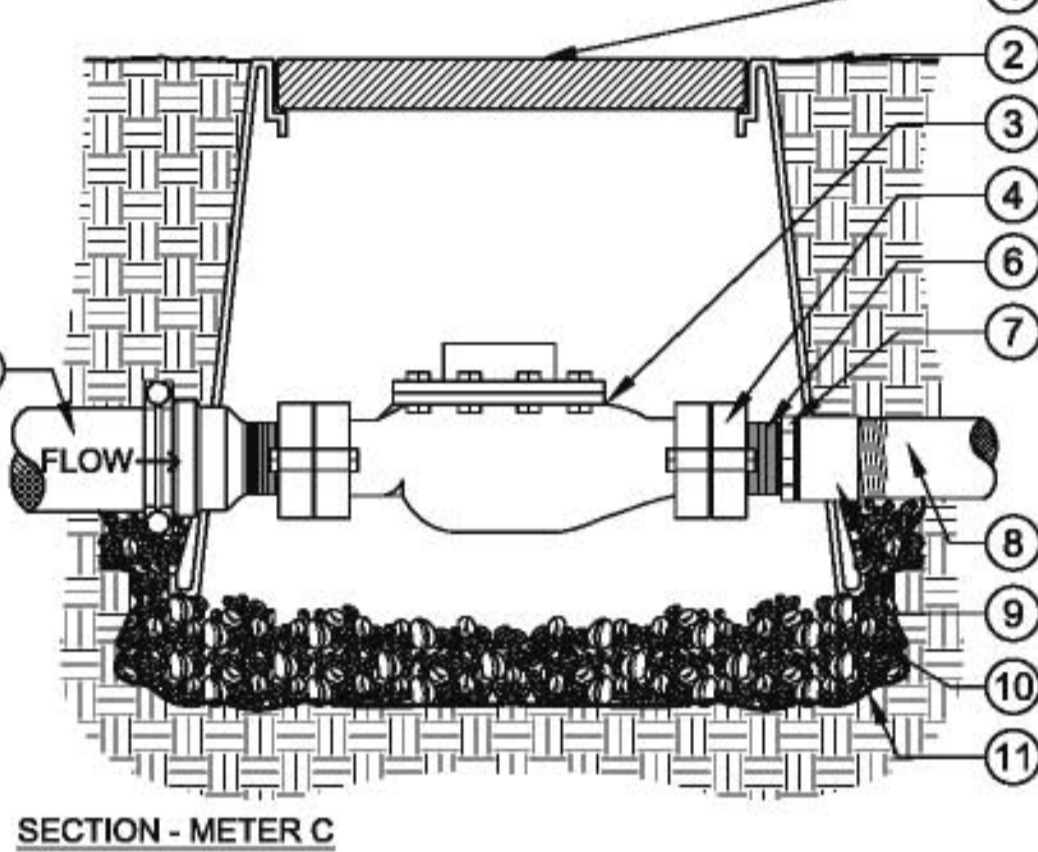
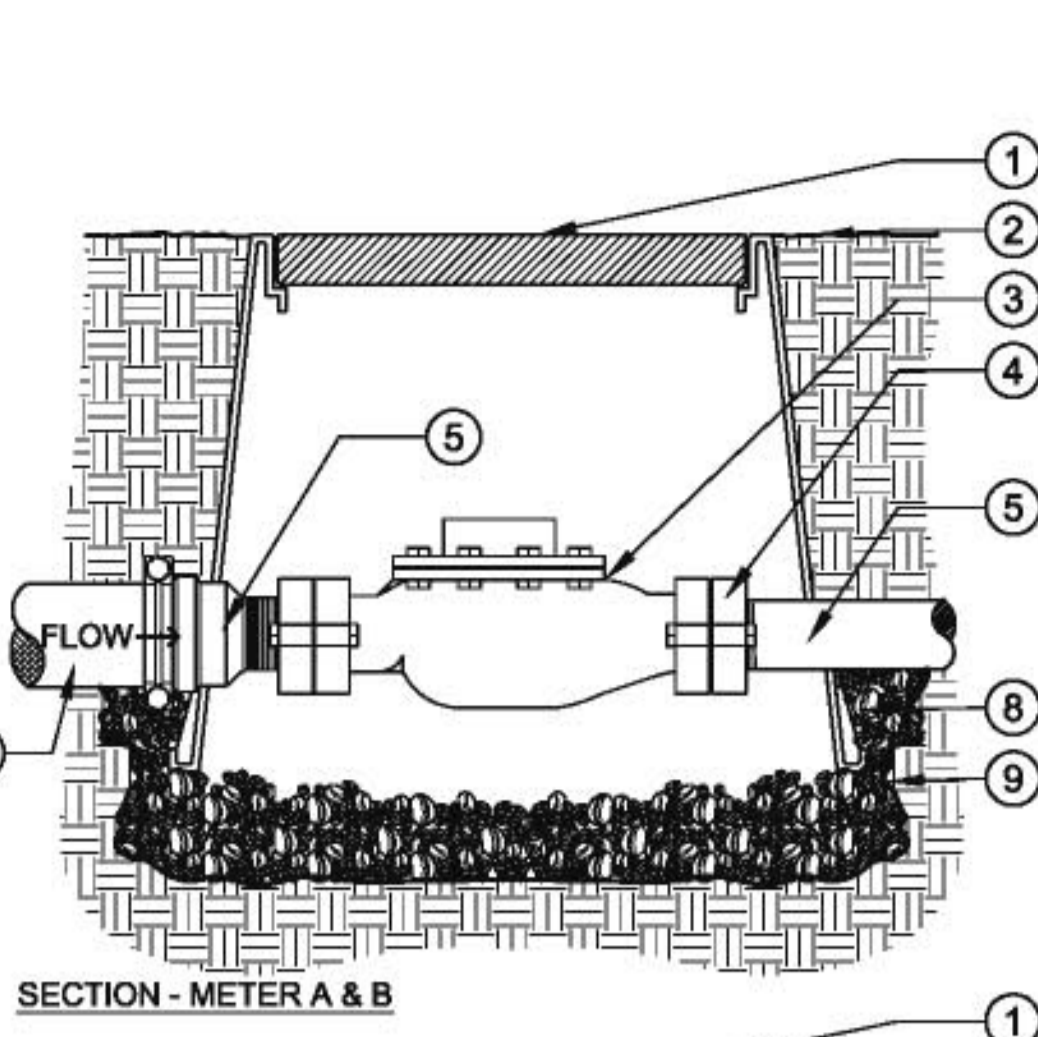
SHEET:

1D-01

SHEET: 7 OF 13 SHEETS



- 1 FINISH GRADE
- 2 RECYCLED WATER WARNING TAG (PER LOCAL STANDARDS)
- 3 10" ROUND PURPLE VALVE BOX (SEE SPECIFICATIONS, DO NOT CUT ADDITIONAL HOLES INTO BOX)
- 4 4" DIAMETER PURPLE SCH. 40 PVC SLEEVE (TO REST ON TOP EDGE OF ISOLATION VALVE)
- 5 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX, FILL TO TOP OF VALVE BOX HOLES
- 6 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 7 4" RESILIENT WEDGE GATE VALVE FLANGE X MJ (SEE LEGEND)
- 8 LINE SIZE X 4" STAINLESS STEEL TAPPING SLEEVE (SEE LEGEND)
- 9 BELL X BELL CONCENTRIC REDUCER (SEE LEGEND)
- 10 PRESSURE SUPPLY LINE (SEE LEGEND)



- 1 JUMBO RECTANGULAR PURPLE VALVE BOX (SEE SPECIFICATIONS, DO NOT CUT ADDITIONAL HOLES INTO BOX)
- 2 FINISH GRADE
- 3 2" RECYCLED BOLTED FLANGE WATER METER (SEE LEGEND)
- 4 BOLTED X 2" FIPT BRASS FLANGE (2 REQUIRED)
- 5 2" BRASS NIPPLE (LENGTH AS NEEDED)
- 6 2" MIPT X MIPT BRASS CLOSE NIPPLE
- 7 2" FIPT X 2 1/2" MIPT BRASS REDUCER BUSHING
- 8 2 1/2" BRASS NIPPLE (LENGTH AS NEEDED)
- 9 2 1/2" FIPT X 2 1/2" FIPT BRASS COUPLER
- 10 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX, FILL TO TOP OF THE HOLES
- 11 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 12 3" PVC FROM TAPPING SLEEVE AND GATE VALVE (LENGTH VARIES)

- 1 SAND MEDIA FILTER, TYP (SEE LEGEND) PROVIDE GRAVEL AND SAND MEDIA PER MANUFACTURER'S SPECIFICATIONS.
- 2 STEEL TO PVC ADAPTER CLAMP (PROVIDED WITH SAND MEDIA FILTER)
- 3 1.5" OR 2" SCH. 80 TOE NIPPLE (PROVIDED WITH SAND MEDIA FILTER)
- 4 2" PVC SCH. 80 MALE ADAPTER (2 REQUIRED)
- 5 2" FIPT X FIPT BRASS COUPLING (2 REQUIRED)
- 6 2" FIPT X FIPT BRASS ELBOW (4 REQUIRED)
- 7 2" BRASS NIPPLES (LENGTH AND QUANTITY AS REQUIRED) DOUBLE WRAP ALL BRASS PIPE WITH PVC TAPE TO A MINIMUM OF 4" ABOVE FINISH GRADE.

- 8 1 1/2" SLIP X SLIP SCH. 80 ELBOW (QUANTITY AS REQUIRED)
- 9 1 1/2" PURPLE PVC SCH. 40 BACKWASH PIPE (SEE PLAN FOR ROUTING)
- 10 BOLT SAND MEDIA FILTER TO CONCRETE PAD, TYP.
- 11 4" THICK CONCRETE PAD, EXTEND 12" BEYOND FILTER ON EACH SIDE
- 12 COMPACT SUBGRADE
- 13 FINISH GRADE

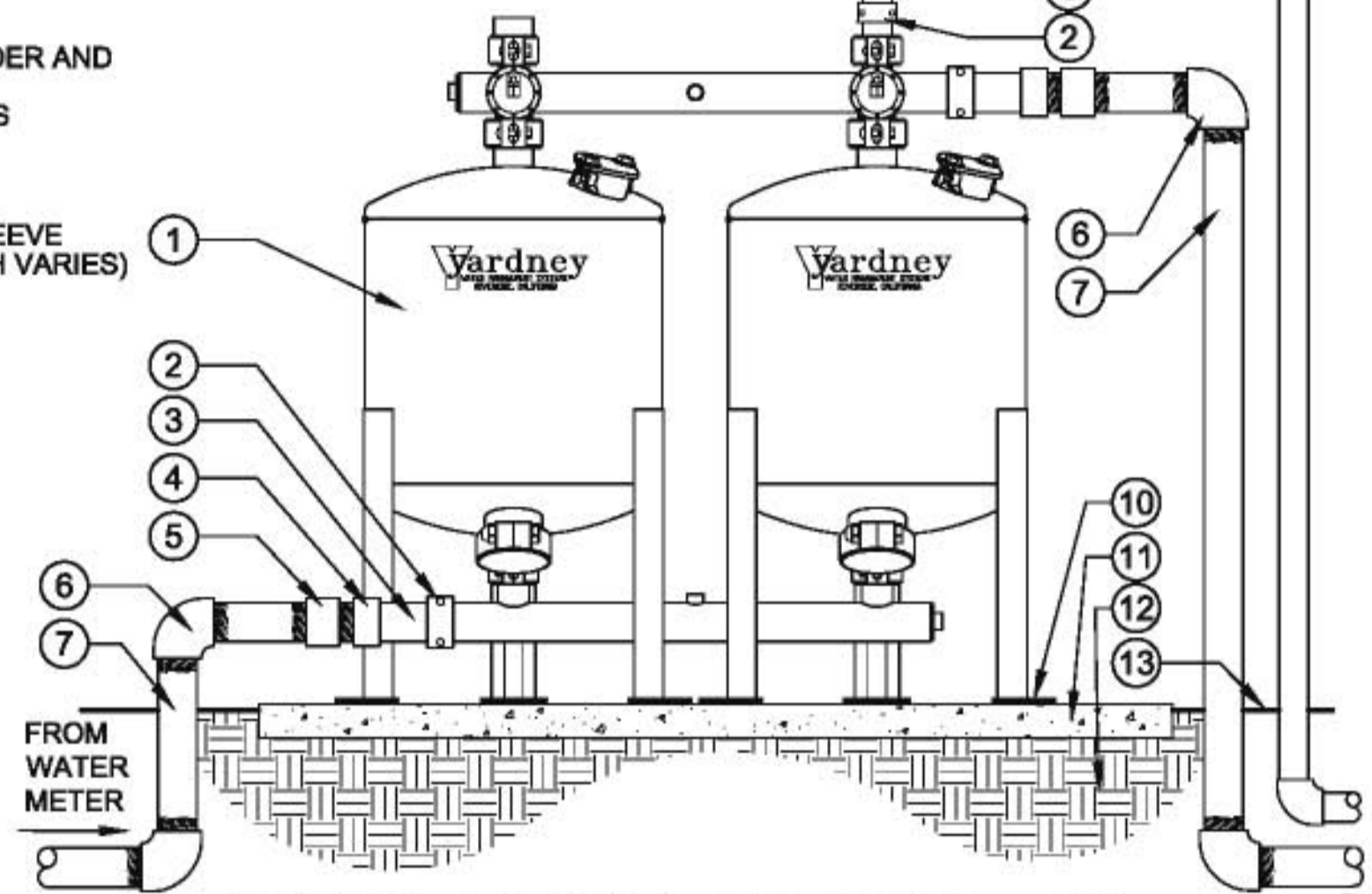
NOTE:  
 MARK LOCATION OF SAND MEDIA FILTER FOR APPROVAL BY HOA REPRESENTATIVE AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

- 1 SAND MEDIA FILTER, TYP (SEE LEGEND) PROVIDE GRAVEL AND SAND MEDIA PER MANUFACTURER'S SPECIFICATIONS.
- 2 3" STEEL TO PVC ADAPTER CLAMP (PROVIDED WITH SAND MEDIA FILTER)
- 3 3" SCH. 80 TOE NIPPLE (PROVIDED WITH SAND MEDIA FILTER)
- 4 1 1/2" STEEL TO PVC ADAPTER CLAMP (PROVIDED WITH SAND MEDIA FILTER)
- 5 1 1/2" SCH. 80 TOE NIPPLE (PROVIDED WITH SAND MEDIA FILTER)

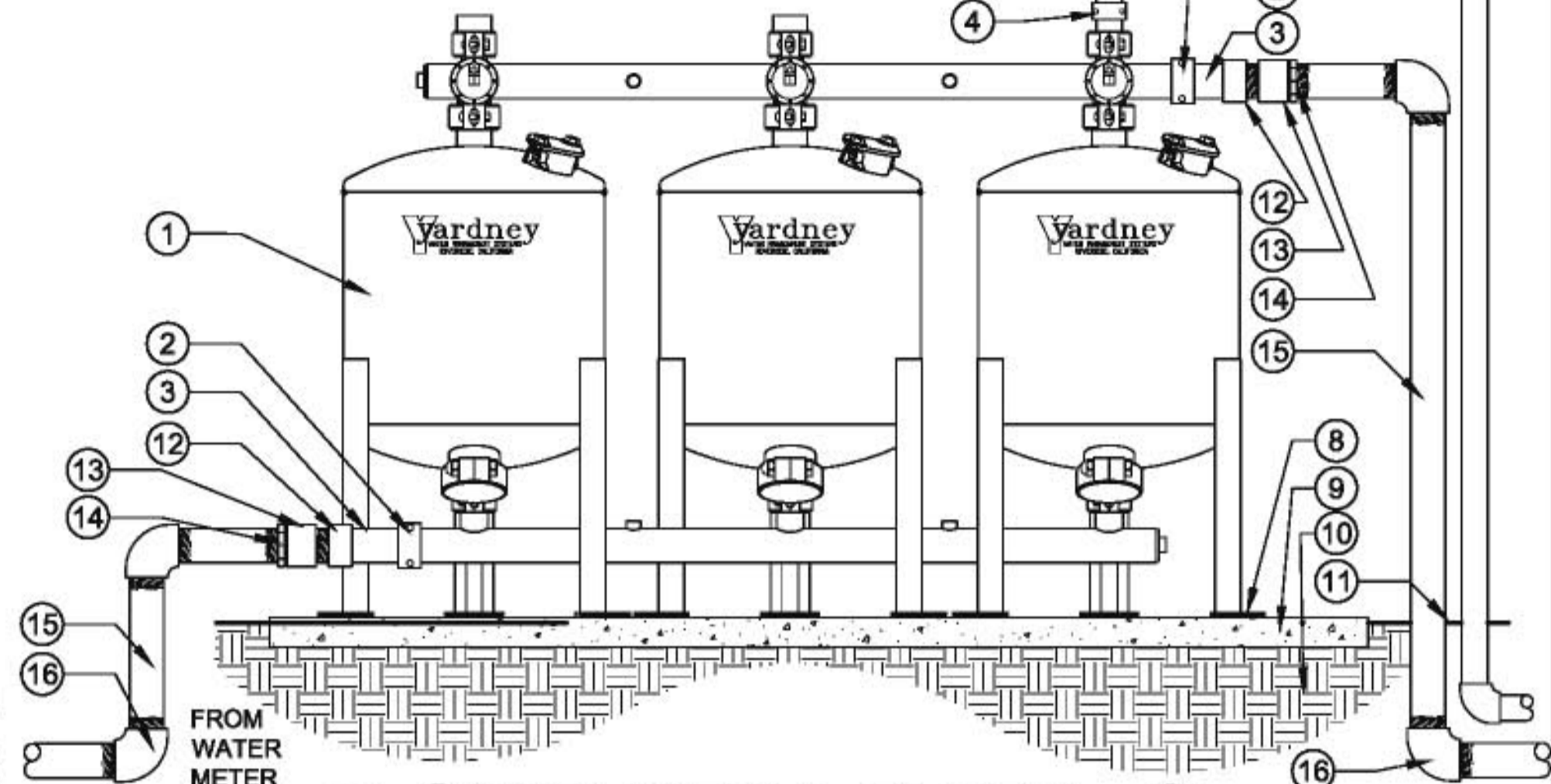
- 6 1 1/2" SLIP X SLIP SCH. 80 ELBOW (QUANTITY AS REQUIRED)
- 7 1 1/2" PURPLE PVC SCH. 40 BACKWASH PIPE (SEE PLAN FOR ROUTING)
- 8 BOLT SAND MEDIA FILTER TO CONCRETE PAD, TYP.
- 9 4" THICK CONCRETE PAD, EXTEND 12" BEYOND FILTER ON EACH SIDE
- 10 COMPACT SUBGRADE
- 11 FINISH GRADE
- 12 3" SCH. 80 MALE ADAPTER (2 REQUIRED)
- 13 3" FIPT X FIPT BRASS COUPLING (2 REQUIRED)
- 14 3" MIPT X 2.5" FIPT BRASS REDUCER (2 REQUIRED)

- 15 2.5" BRASS NIPPLES (LENGTH AND QUANTITY AS REQUIRED) DOUBLE WRAP ALL BRASS PIPE WITH PVC TAPE TO A MINIMUM OF 4" ABOVE FINISH GRADE.
- 16 2.5" FIPT X FIPT BRASS ELBOW (4 REQUIRED)

NOTE:  
 MARK LOCATION OF SAND MEDIA FILTER FOR APPROVAL BY HOA REPRESENTATIVE AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.



**3 SAND MEDIA FILTER - 2"**  
 SCALE: N.T.S. TRILOGY



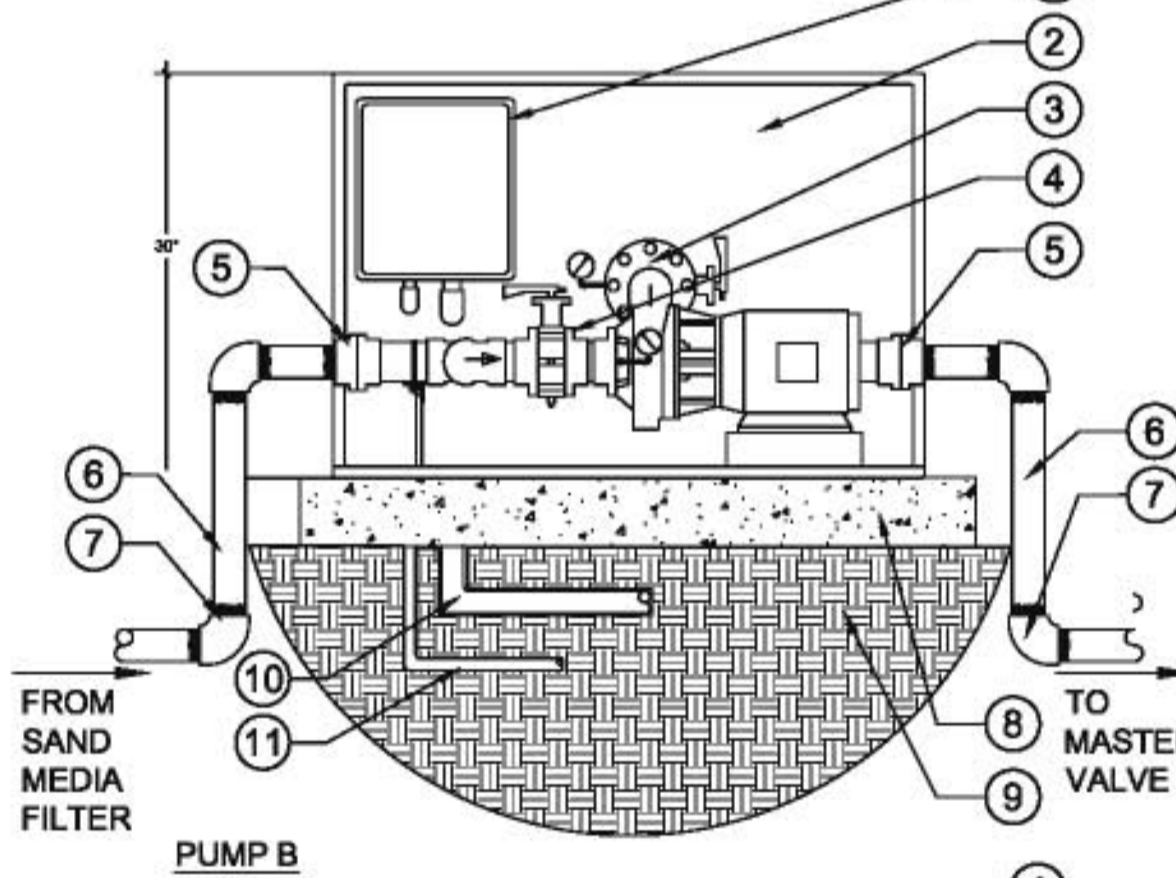
**4 SAND MEDIA FILTER - 3"**  
 SCALE: N.T.S. TRILOGY

**1 TAPPING SLEEVE & VALVE**  
 SCALE: N.T.S. TRILOGY

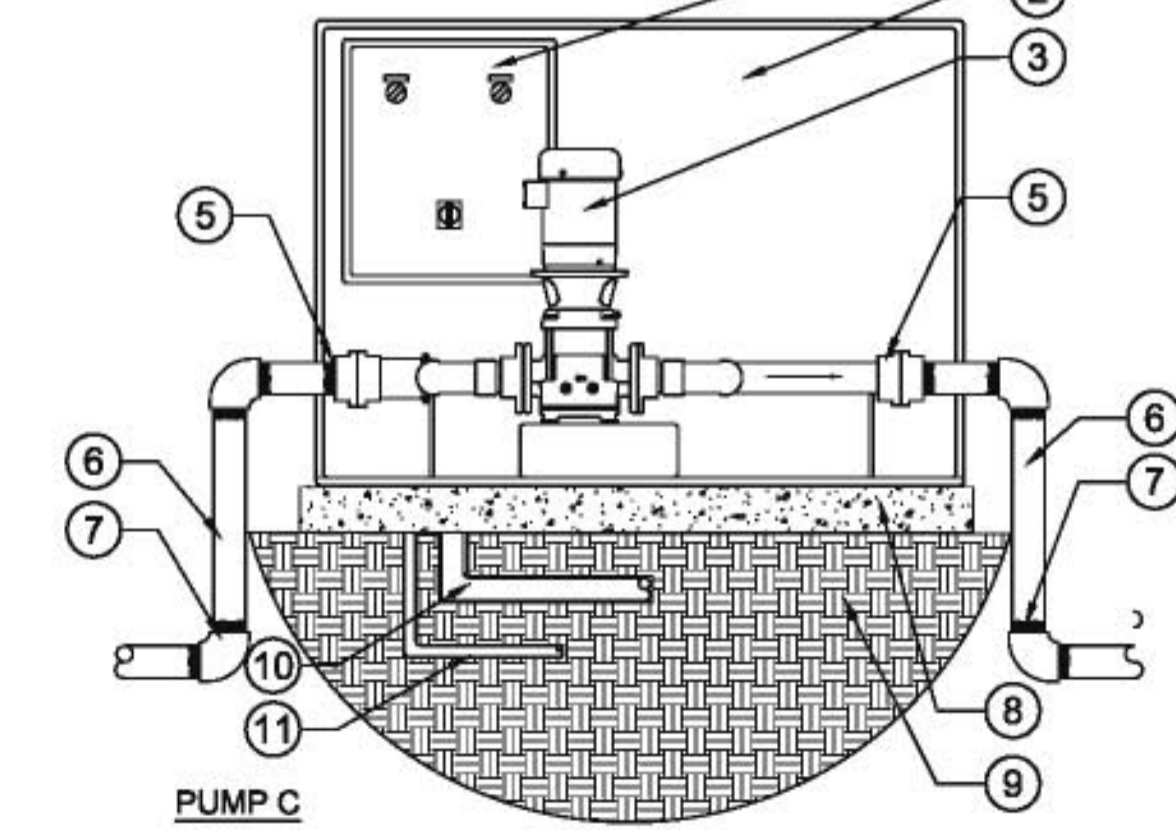
**2 WATER METER - 2"**  
 SCALE: N.T.S. TRILOGY

**3 SAND MEDIA FILTER - 2"**  
 SCALE: N.T.S. TRILOGY

**4 SAND MEDIA FILTER - 3"**  
 SCALE: N.T.S. TRILOGY



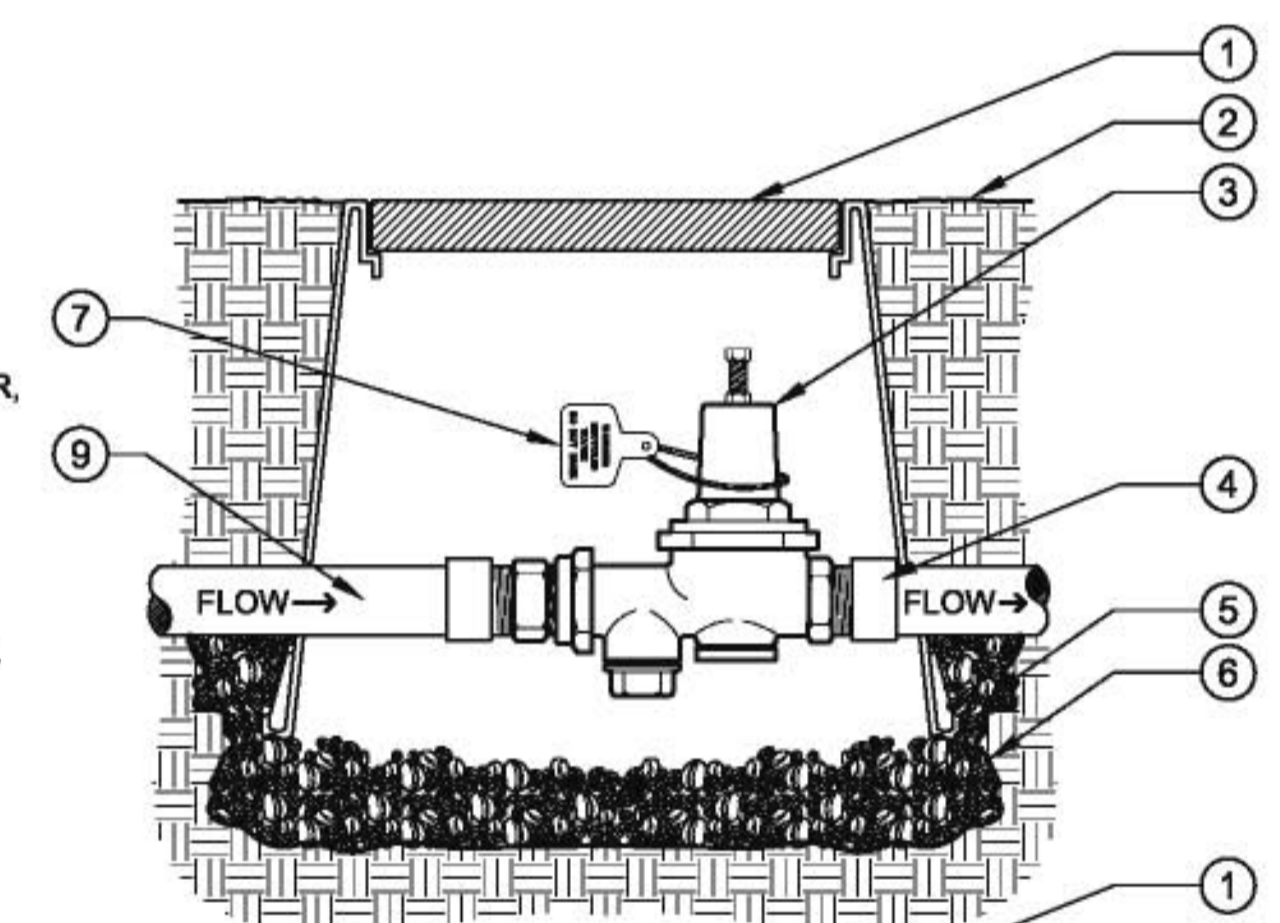
**PUMP B**



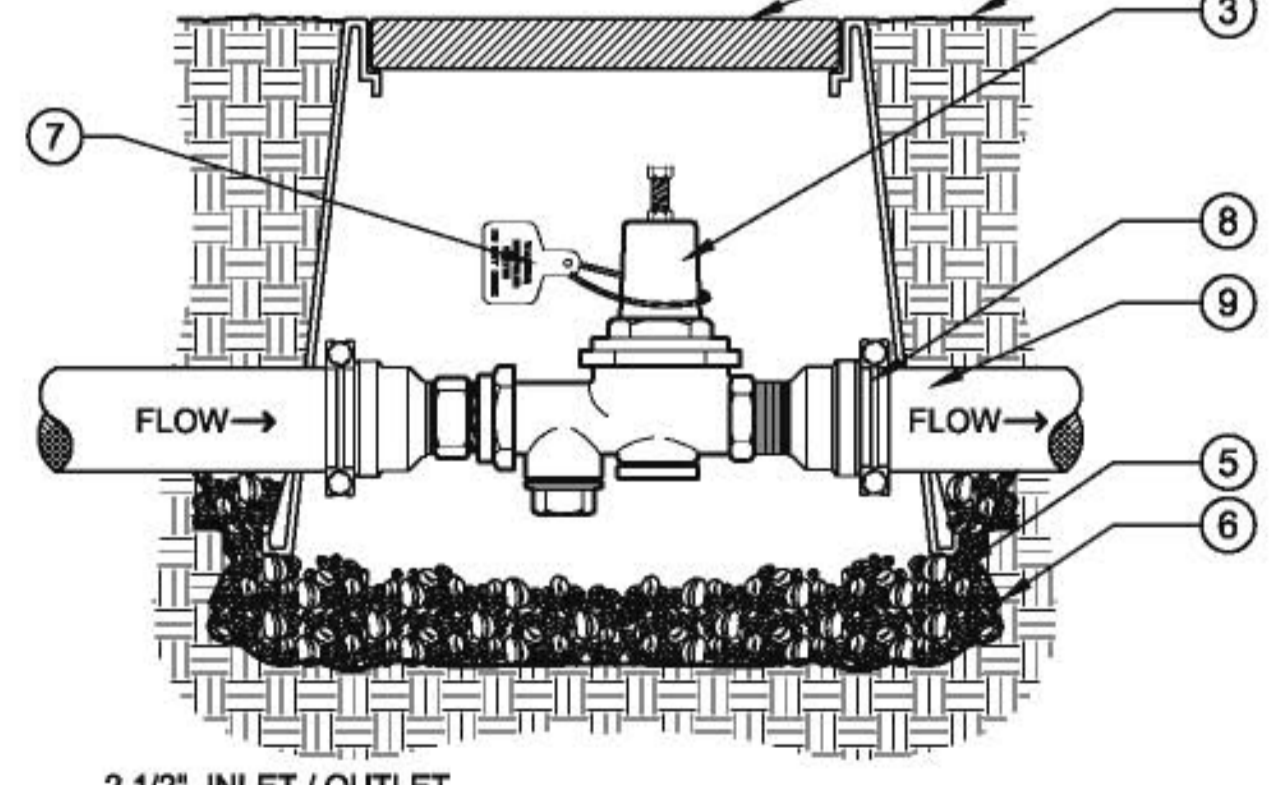
**PUMP C**

- 1 NEMA 4 ENCLOSED CONTROL PANEL WITH CIRCUIT BREAKER, MAGNETIC STARTER, HOA SWITCH AND COMPONENTS FOR AUTOMATIC BOOSTER PUMP CONTROL
- 2 MARINE GRADE ALUMINUM ENCLOSURE, TOP HINGED DESIGN WITH VENTING
- 3 CLOSE-COUPLED END SUCTION CENTRIFUGAL PUMP, CAST IRON BRONZE FITTED, BACK PULLOUT DESIGN, MECHANICAL SEAL, ODP MOTOR (B) VERTICAL MULTISTAGE STAINLESS FITTED CENTRIFUGAL PUMP (C)
- 4 BUTTERFLY VALVE
- 5 2.5" X 2" FLANGE X FIPT ADAPTER WITH STAINLESS STEEL BOLTS (POC B)  
 2.5" X 2.5" FLANGE X FIPT ADAPTER WITH STAINLESS STEEL BOLTS (POC C)
- 6 2" BRASS NIPPLES, LENGTH AND QUANTITY AS REQUIRED. (POC B)  
 2.5" BRASS NIPPLES, LENGTH AND QUANTITY AS REQUIRED. (POC C)  
 DOUBLE WRAP ALL BRASS PIPE WITH A PVC TAPE TO A MINIMUM OF 4" ABOVE FINISH GRADE.
- 7 2" FIPT X FIPT BRASS ELBOW (4 REQUIRED) (POC B)  
 2.5" FIPT X FIPT BRASS ELBOW (4 REQUIRED) (POC C)
- 8 6" THICK CONCRETE PAD, ASTM C-94, ACI STD. 318-83 DESIGN MIX, 2500 PSI RATED. PAD DIMENSIONS SHALL BE 42" X 54"
- 9 COMPACT SUBGRADE.
- 10 MAIN POWER CONDUIT, SEE PLAN.
- 11 IRRIGATION SIGNAL CONDUIT, SEE PLAN.

**5 BOOSTER PUMP**  
 SCALE: N.T.S. THE RETREAT



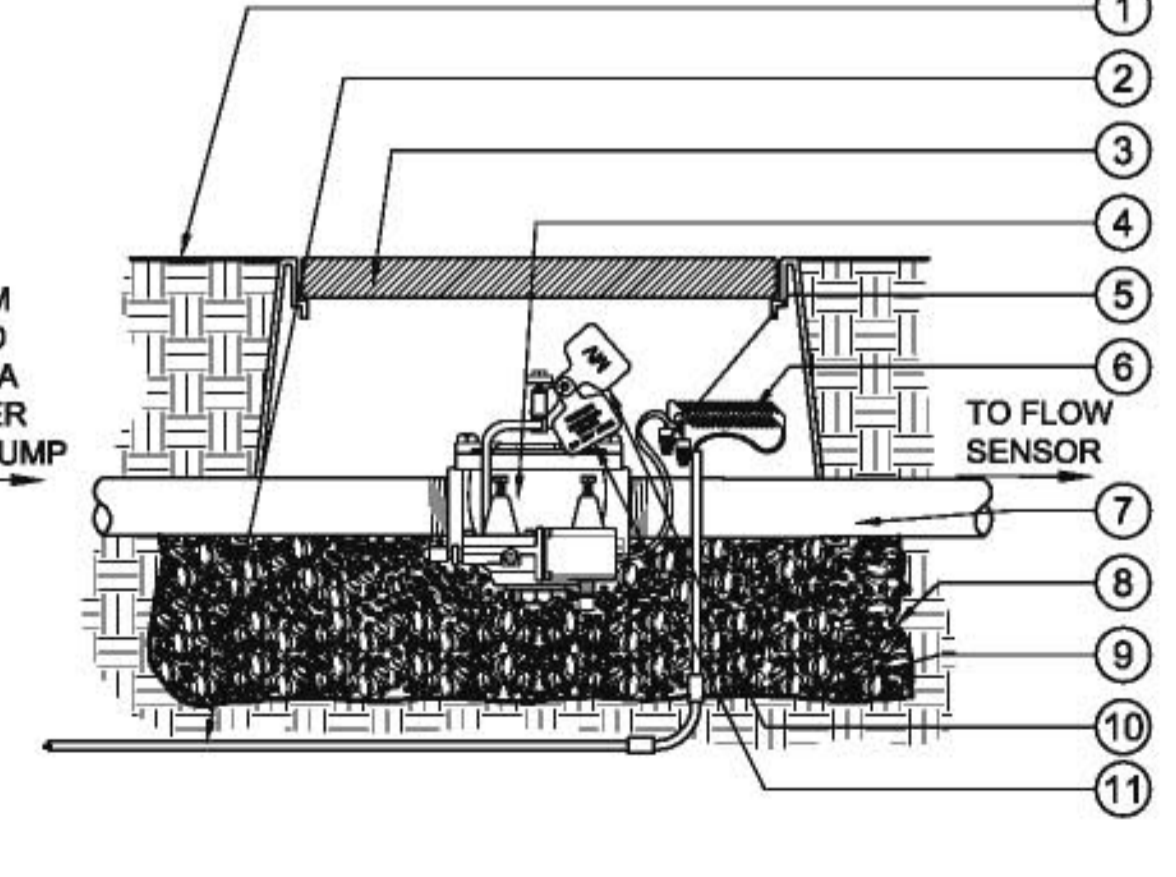
**2" INLET / OUTLET**



**2 1/2" INLET / OUTLET**

**6 PRESSURE REGULATOR**  
 SCALE: 3"-1'-0" TRILOGY

- 1 RECTANGULAR PURPLE VALVE BOX (SEE SPECIFICATIONS, DO NOT CUT ADDITIONAL HOLES INTO BOX)
- 2 FINISH GRADE
- 3 PRESSURE REGULATING VALVE (SEE SPECIFICATIONS)
- 4 2" PVC SCH. 80 MALE ADAPTER (2 REQUIRED)
- 5 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX, FILL TO TOP OF THE HOLES
- 6 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 7 RECYCLED WATER WARNING TAG (PER LOCAL STANDARDS)
- 8 2.5" X 2" MIPT RESTRAINED MALE ADAPTER (2 REQUIRED)
- 9 PVC PRESSURE SUPPLY LINE (SEE LEGEND)

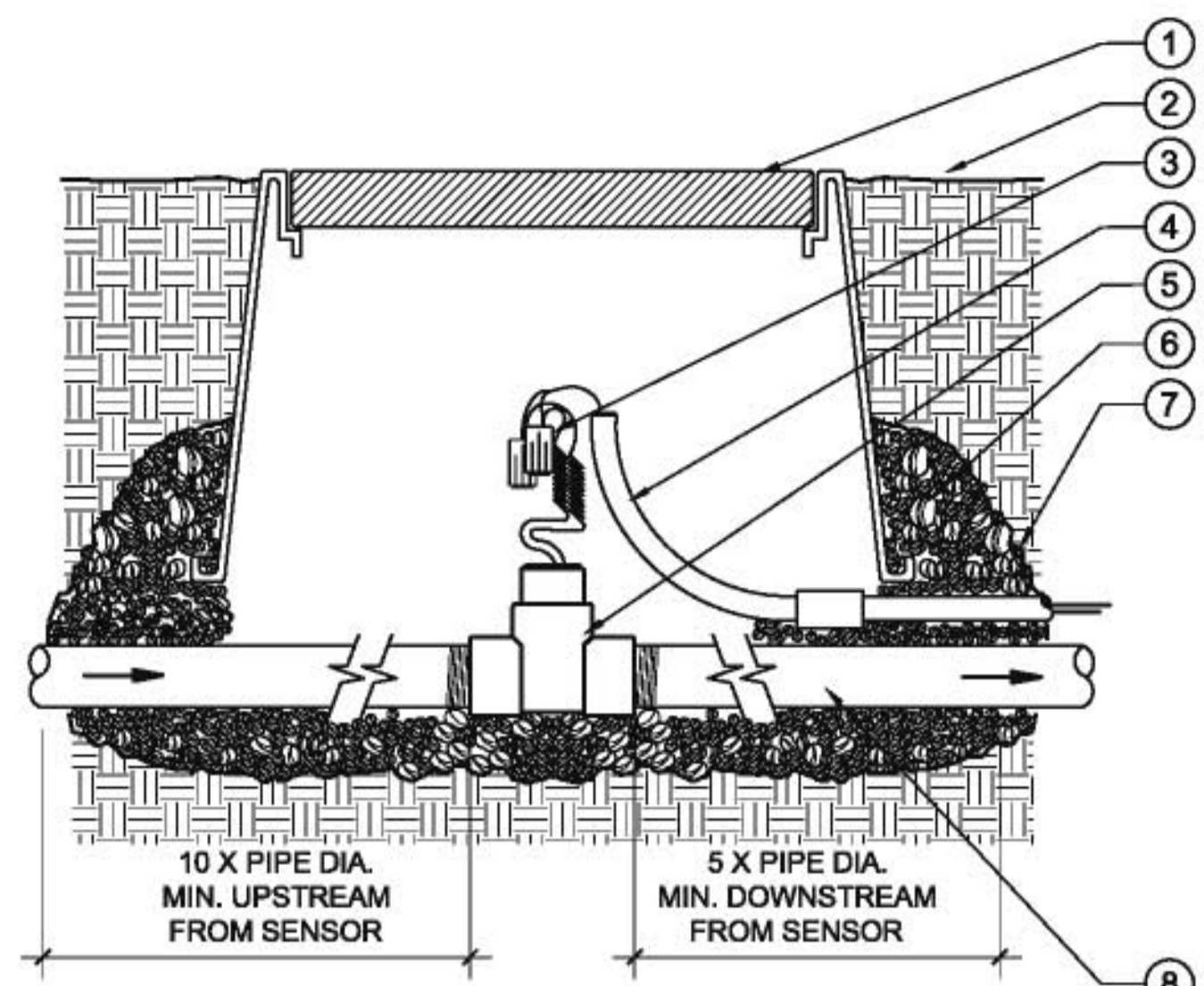


**7 MASTER VALVE**  
 SCALE: 3/4"-1'-0" TRILOGY

- 1 FINISH GRADE
- 2 1" SCH. 40 WIRE CONDUIT WITH SWEEP FOR MASTER VALVE WIRES
- 3 JUMBO RECTANGULAR PURPLE VALVE BOX (SEE SPECIFICATIONS), DO NOT CUT ADDITIONAL HOLES INTO BOX
- 4 MASTER VALVE (SEE LEGEND AND SPECIFICATIONS)
- 5 CONNECT WIRES TO VALVE USING WATER TIGHT CONNECTORS (SEE SPECS)
- 6 USE 1/2" PVC SCRAP TO WRAP 12" OF ADDITIONAL WIRE BEFORE CONNECTING
- 7 2" BRASS NIPPLE OR 1" BRASS NIPPLE
- 8 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 9 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX, FILL TO TOP OF VALVE BOX HOLES
- 10 VALVE IDENTIFICATION TAG
- 11 RECYCLED WATER WARNING TAG (PER LOCAL STANDARDS)  
 NOTE: ALL CONDUIT SHALL BE SEALED WATER TIGHT WITH EXPANDING FOAM.

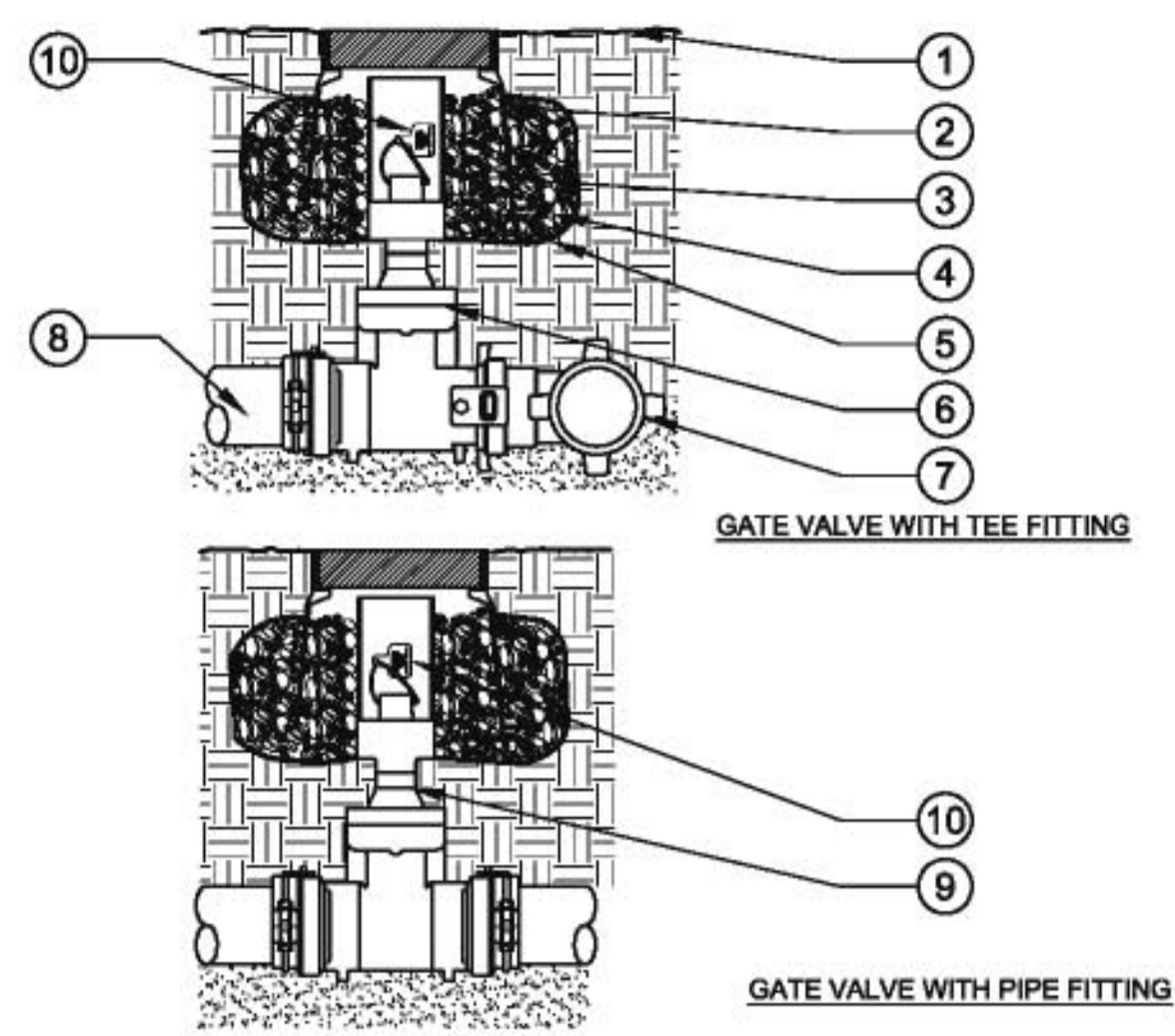
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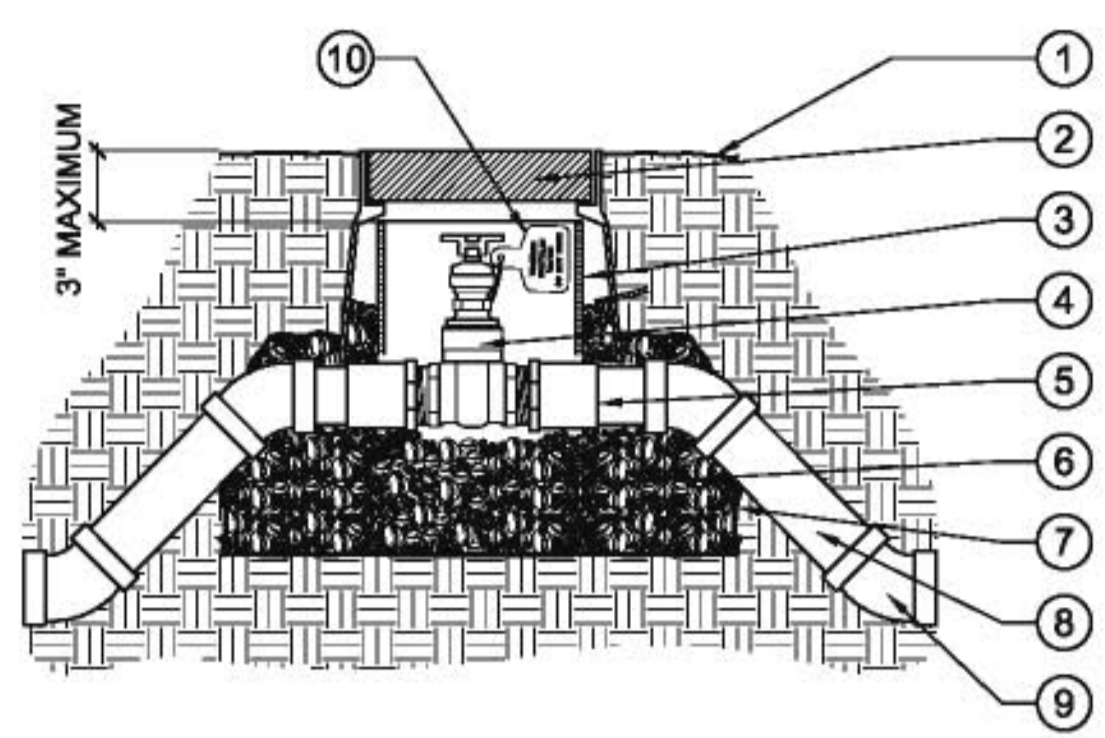
- 1 RECTANGULAR PURPLE VALVE BOX (SEE SPECIFICATIONS, DO NOT CUT ADDITIONAL HOLES INTO BOX)
- 2 FINISH GRADE
- 3 CONNECT CABLE TO FLOW SENSOR USING WATER TIGHT CONNECTORS (SEE SPECIFICATIONS)
- 4 1" SCH. 40 WIRE CONDUIT WITH SWEEP FOR FLOW SENSOR WIRES
- 5 FLOW SENSOR (SEE LEGEND AND SPECIFICATIONS)
- 6 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX. FILL TO TOP OF VALVE BOX HOLES
- 7 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 8 1" OR 2" BRASS NIPPLE, TYP.

**8 FLOW SENSOR**  
SCALE: 3"-1'-0"  
TRILOGY



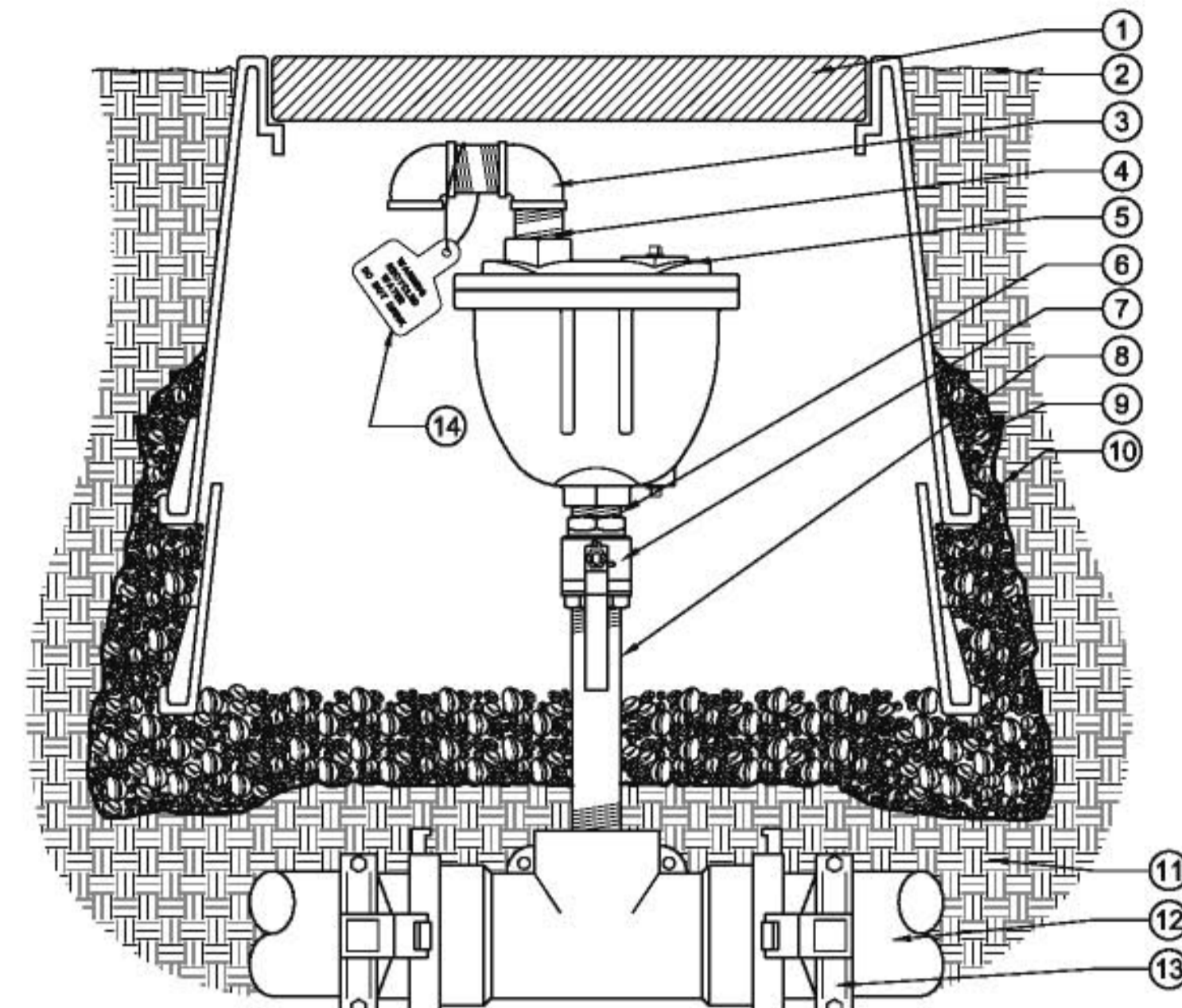
- 1 FINISH GRADE
- 2 10" ROUND PURPLE VALVE BOX (SEE SPECIFICATIONS, DO NOT CUT ADDITIONAL HOLES INTO BOX)
- 3 4" DIAMETER PURPLE SCH. 40 PVC SLEEVE (TO REST ON TOP EDGE OF ISOLATION VALVE)
- 4 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX, FILL TO TOP OF VALVE BOX HOLES
- 5 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 6 SELF RESTRAINED SPIGOT X BELL MAINLINE GATE VALVE
- 7 BELL X BELL X BELL DUCTILE IRON TEE
- 8 PURPLE IRRIGATION PRESSURE SUPPLY LINE
- 9 SELF RESTRAINED BELL X BELL MAINLINE GATE VALVE
- 10 RECYCLED WATER WARNING TAG (PER LOCAL STANDARDS)

**9 GATE VALVE W/ RESTRAINT**  
FOR PIPE 2 1/2" - 3" IN SIZE  
SCALE: 1"-1'-0"  
TRILOGY



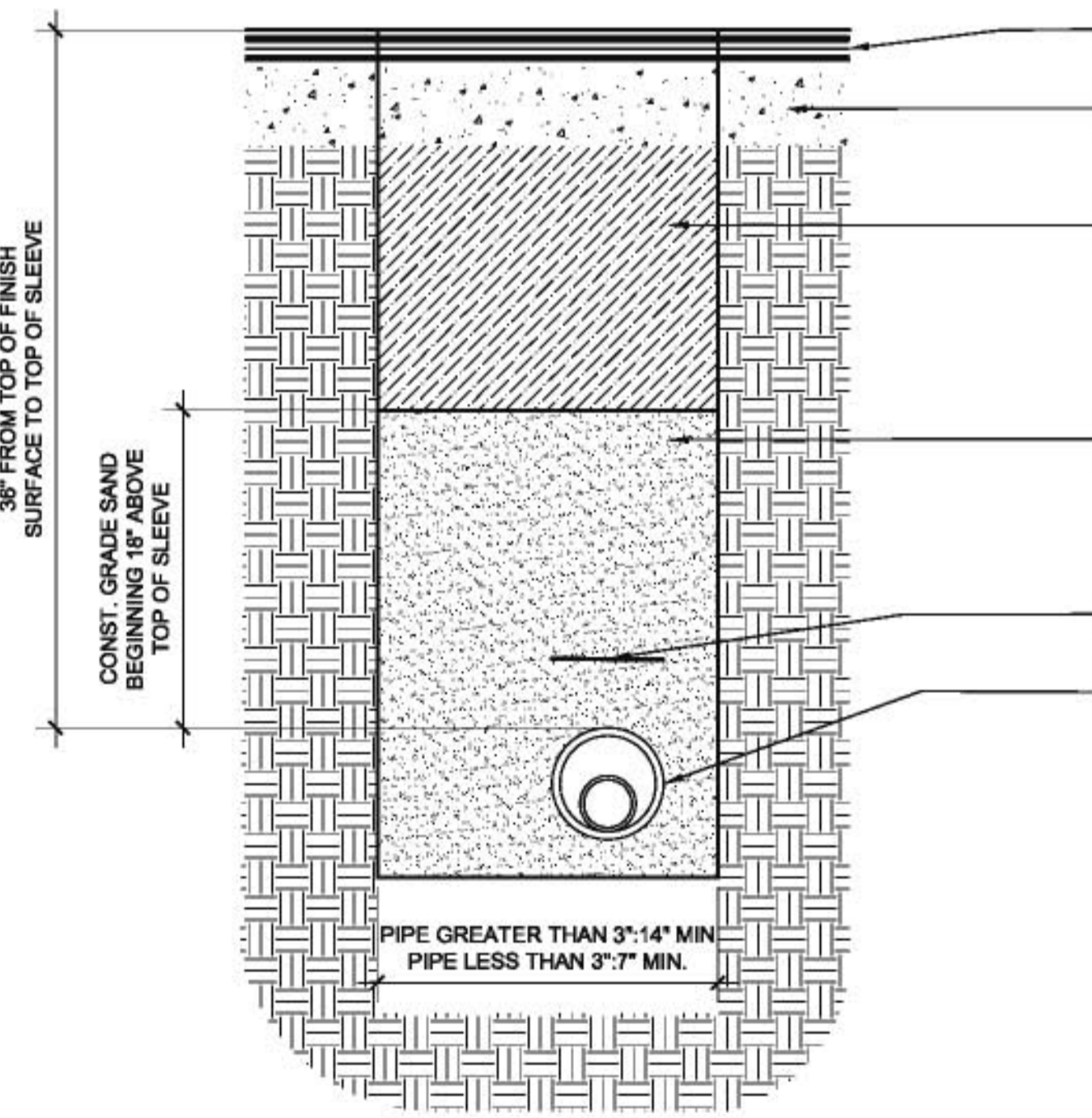
- 1 FINISH GRADE
- 2 10" ROUND PURPLE VALVE BOX (SEE SPECIFICATIONS, DO NOT CUT ADDITIONAL HOLES INTO BOX)
- 3 8" DIAMETER CL. PURPLE SCH. 40 (TO REST ON TOP EDGE OF ISOLATION GATE VALVE)
- 4 ISOLATION GATE VALVE (WITH CROSS HANDLE, SEE SPECIFICATIONS)
- 5 SLIP X MIPT SCH 40 PVC ADAPTER (2 REQUIRED)
- 6 3/4" GRAVEL SUMP IN, UNDER AND AROUND VALVE BOX, FILL TO TOP OF VALVE BOX HOLES
- 7 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 8 PURPLE PRESSURE SUPPLY LINE (REFER TO PLAN FOR SIZE)
- 9 SLIP X SLIP 45 DEGREE ELL (4 REQUIRED)
- 10 RECYCLED WATER WARNING TAG (PER LOCAL STANDARDS)

**10 ISOLATION GATE VALVE**  
FOR PIPE UP TO 2" IN SIZE  
SCALE: 1 1/2"-1'-0"  
TRILOGY



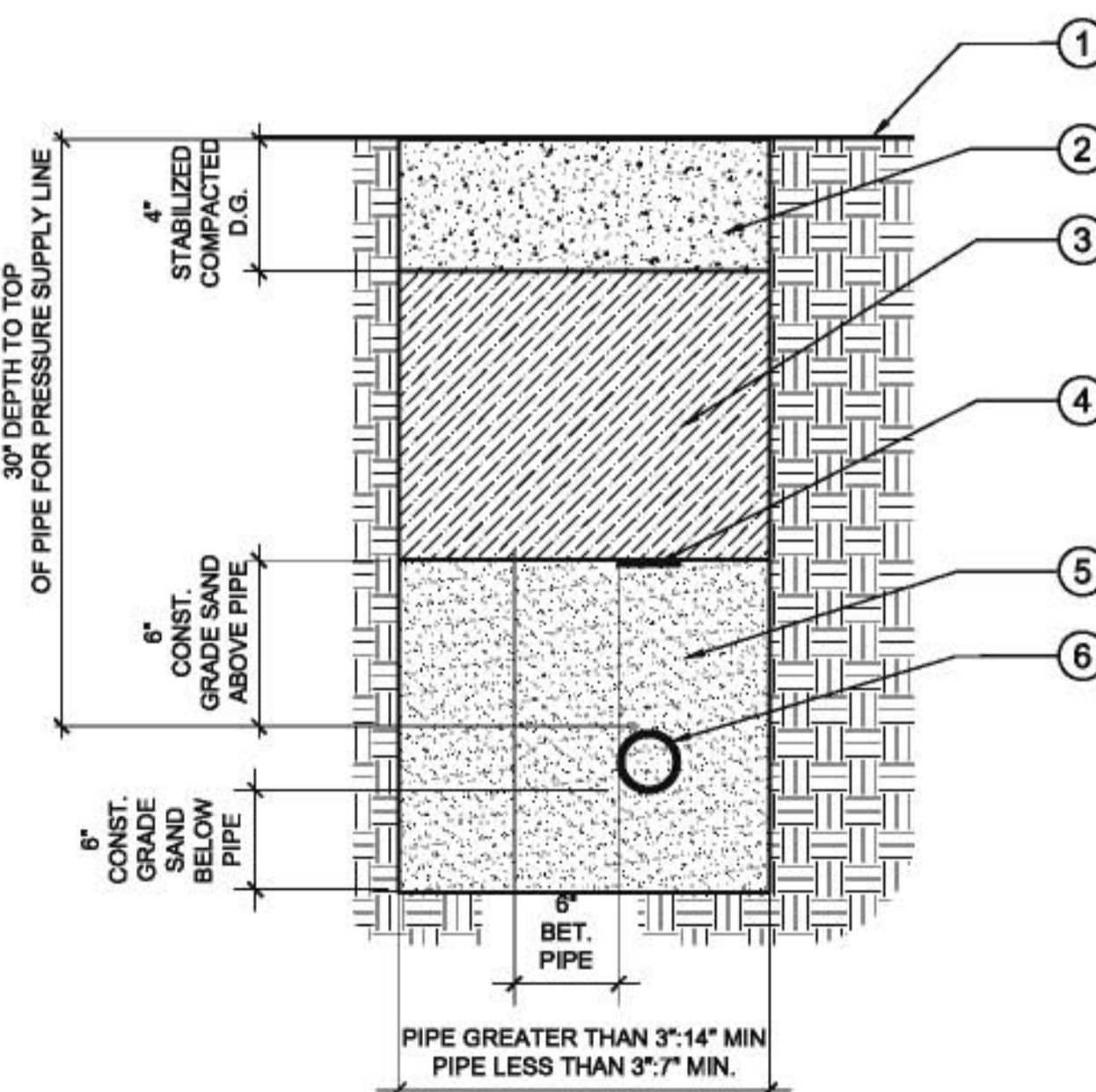
- 1 PURPLE JUMBO RECTANGULAR VALVE BOX (USE VALVE BOX EXTENSIONS AS NEEDED)
- 2 FINISH SURFACE
- 3 2" T X T 90 DEGREE BRASS ELBOW (2 REQUIRED)
- 4 2" MIPT X 4" LONG BRASS NIPPLE (2 REQUIRED)
- 5 2" COMBINATION AIR VALVE. INSTALL PER MANUF. RECOMMENDATIONS
- 6 2" MIPT X CLOSE BRASS NIPPLE (1 REQUIRED)
- 7 2" BRASS BALL VALVE (1 REQUIRED)
- 8 2" X (LENGTH VARIES) BRASS NIPPLE (1 REQUIRED)
- 9 3/4" GRAVEL SUMP IN, UNDER, AND AROUND VALVE BOX. FILL TO TOP OF VALVE BOX HOLES.
- 10 INSTALL FILTER FABRIC AROUND GRAVEL SUMP.
- 11 COMPACT SUBGRADE
- 12 PRESSURE SUPPLY LINE. SEE PLAN FOR SIZE
- 13 DUCTILE IRON, LINE SIZE X 2" SERVICE TEE WITH RESTRAINTS
- 14 RECYCLED WATER WARNING TAG

**11 AIR RELEASE VALVE**  
FOR PIPE 2 1/2" TO 3" IN SIZE  
SCALE: N.T.S.  
TRILOGY



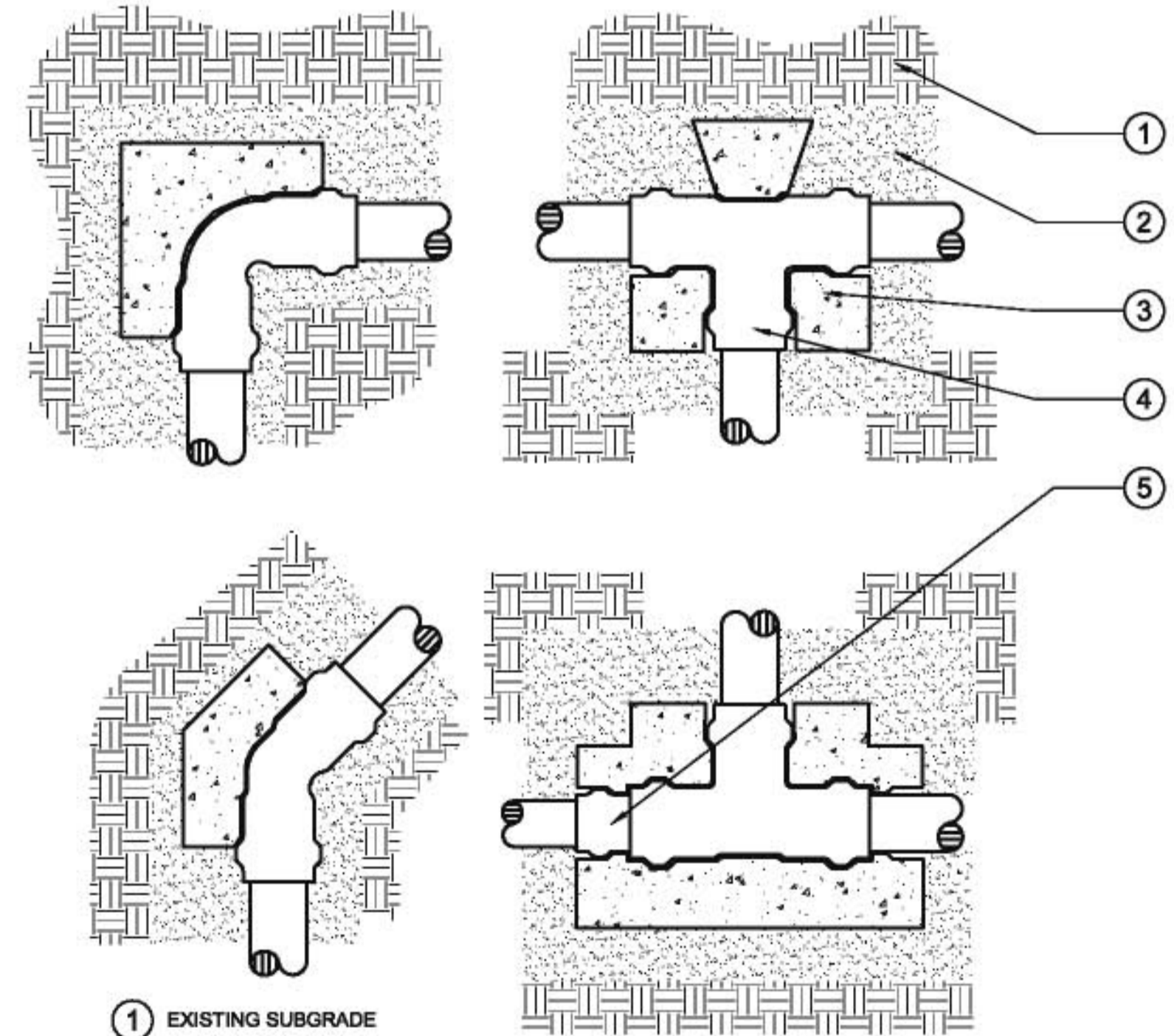
- 1 FINISH SURFACE OF HARDSCAPE
- 2 BASE MATERIAL (REPLACE IN LIKE KIND TO EXISTING)
- 3 BACKFILL MATERIAL (FREE OF DEBRIS AND ROCKS GREATER THAN 1")
- 4 CONSTRUCTION GRADE SAND BEGINNING 18" ABOVE AND 6" BELOW TOP OF PRESSURE SUPPLY LINE SLEEVE
- 5 DETECTABLE RECLAIMED WATER METALLIC TAPE (SEE SPECS.) (INSTALL 6" ABOVE SLEEVE)
- 6 PRESSURE SUPPLY LINE SLEEVE (SEE LEGEND AND SPECS.)

**12 TRENCH IN HARDSCAPE**  
SCALE: 3"-1'-0"  
TRILOGY



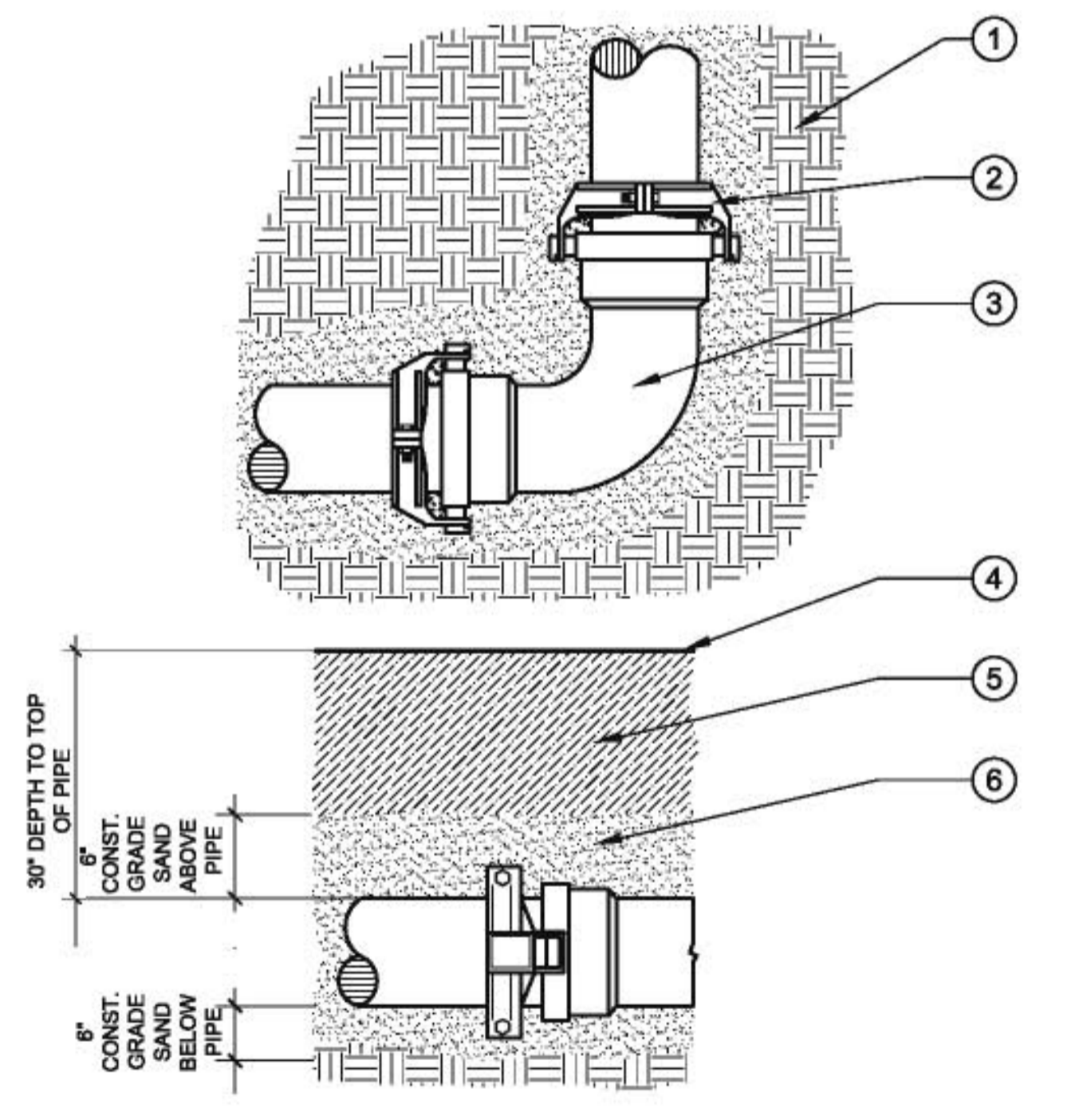
- 1 FINISH GRADE
- 2 REPLACEMENT OF 4" MINIMUM STABILIZED 95% COMPACTED DECOMPOSED GRANITE (WHERE PRESSURE SUPPLY LINE IS INSTALLED BENEATH TRAILS)
- 3 BACKFILL (FREE OF DEBRIS AND ROCK GREATER THAN 1")
- 4 DETECTABLE RECLAIMED WATER METALLIC TAPE (SEE SPECS.) (INSTALL 6" ABOVE PIPE)
- 5 CONSTRUCTION GRADE SAND BEDDING 6" ABOVE AND BELOW PRESSURE SUPPLY LINE
- 6 PRESSURE SUPPLY LINE (SEE PLAN FOR SIZE)

**13 TRENCH IN LANDSCAPE**  
SCALE: 3"-0"  
TRILOGY



- 1 EXISTING SUBGRADE
- 2 BACKFILL MATERIAL (SEE SPECS)
- 3 CONCRETE THRUST BLOCKS (SEE SPECS)
- 4 PVC FITTING
- 5 PVC REDUCER

**14 THRUST BLOCKS**  
FOR PIPE UP TO 2" IN SIZE  
SCALE: 3"-1'-0"  
TRILOGY

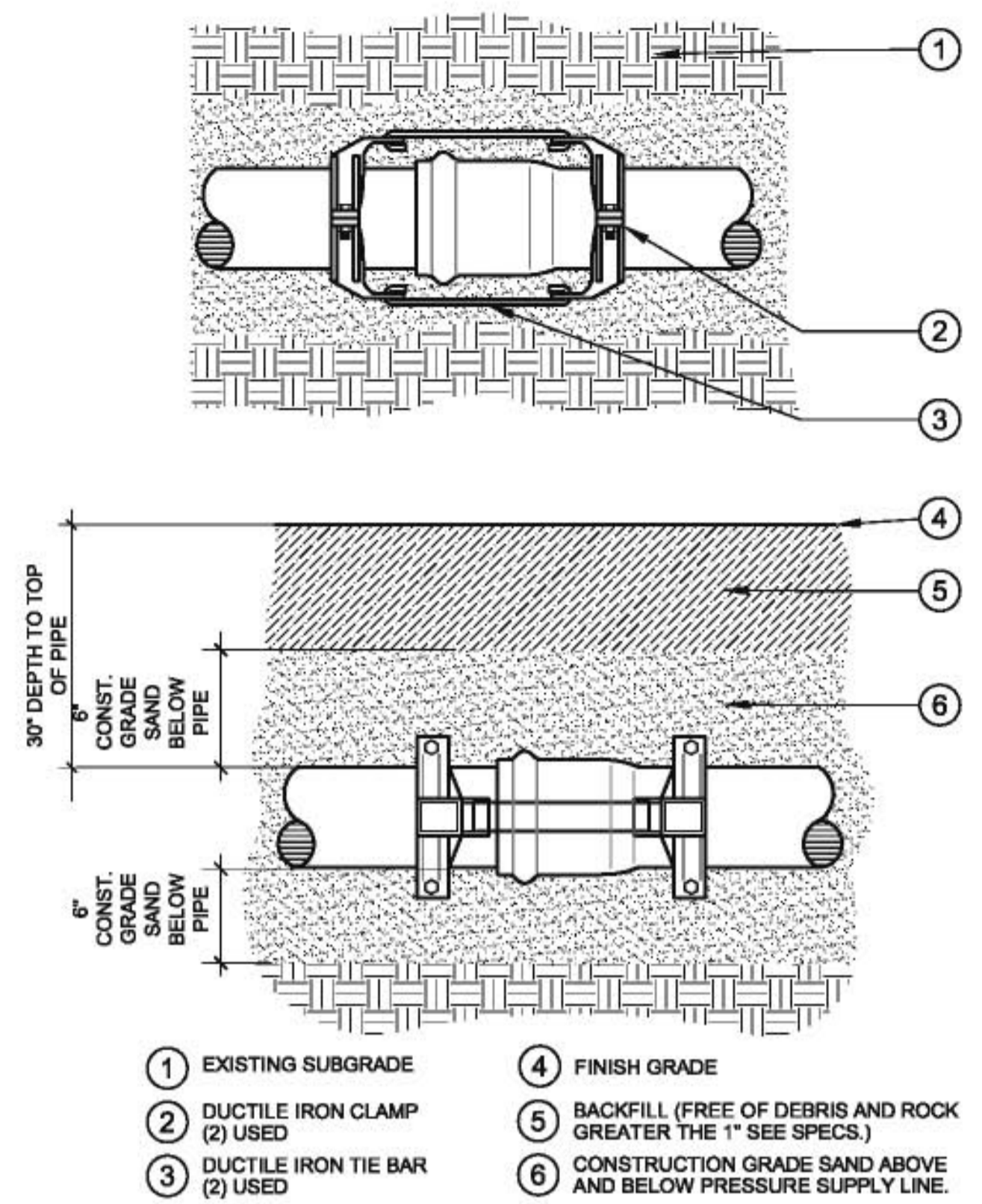


- 1 EXISTING SUBGRADE
- 2 JOINT RESTRAINT (2) USED
- 3 DUCTILE IRON 2 LUG FITTING
- 4 FINISH GRADE
- 5 BACKFILL (FREE OF DEBRIS AND ROCK GREATER THAN 1" SEE SPECS.)
- 6 CONSTRUCTION GRADE SAND ABOVE AND BELOW PRESSURE SUPPLY LINE.

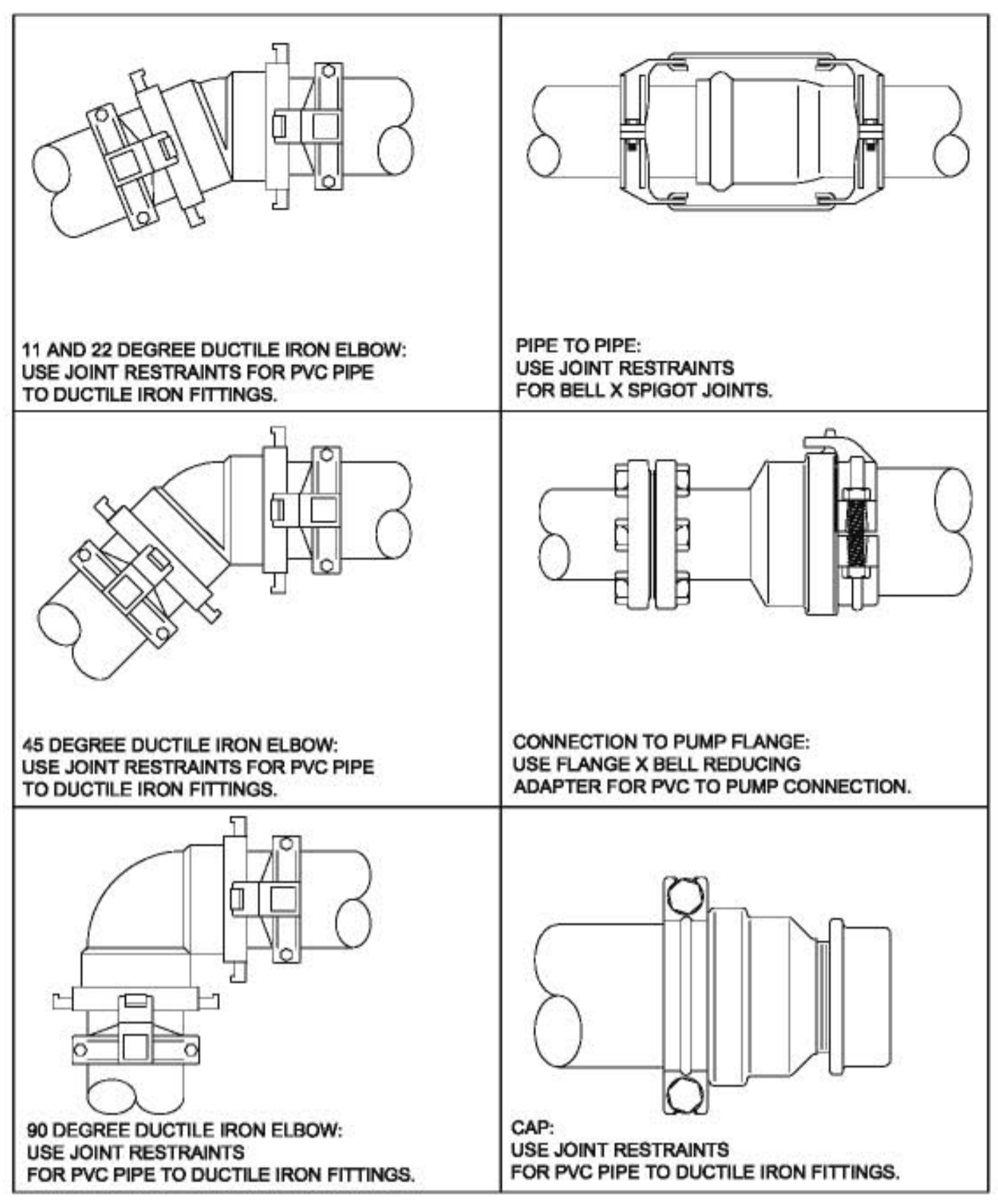
**15 ELBOW WITH RESTRAINT**  
FOR PIPE 2 1/2" - 3" IN SIZE  
SCALE: 1"-1'-0"  
TRILOGY

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**16 JOINT RESTRAINT**  
FOR PIPE 2 1/2" - 3" IN SIZE  
SCALE: 1"-1'-0"  
TRILOGY



**17 JOINT RESTRAINTS GROUP**  
FOR PIPE 2 1/2" - 3" IN SIZE  
SCALE: N.T.S.  
TRILOGY

**Minimum Restrained Length ("L") in feet**

Pipe Size	Degree of Bend				Step Reduction			Dead End	Gate Valve
	11	22	45	90	1	2	3		
2"	1	1	2	6				19	10
2.5"	1	2	4	9	4			23	12
3"	2	3	6	11	8	10		30	15
4"	2	4	9	20	14	20	31	45	23
6"	3	6	13	29	30	40	53	63	31
8"	4	8	15	38	33	55	63	75	38
10"	5	9	19	45	31	56	75	96	48
12"	5	10	21	53	54	58	79	112	56
14"	6	11	24	58	30	70	74	118	58
16"	6	13	27	65	30	54	90	130	65

1 step reduction is one pipe size down (i.e. 8 x 6)  
2 step reduction is two pipe sizes down (i.e. 8 x 4)  
3 step reduction is three pipe sizes down (i.e. 8 x 3)

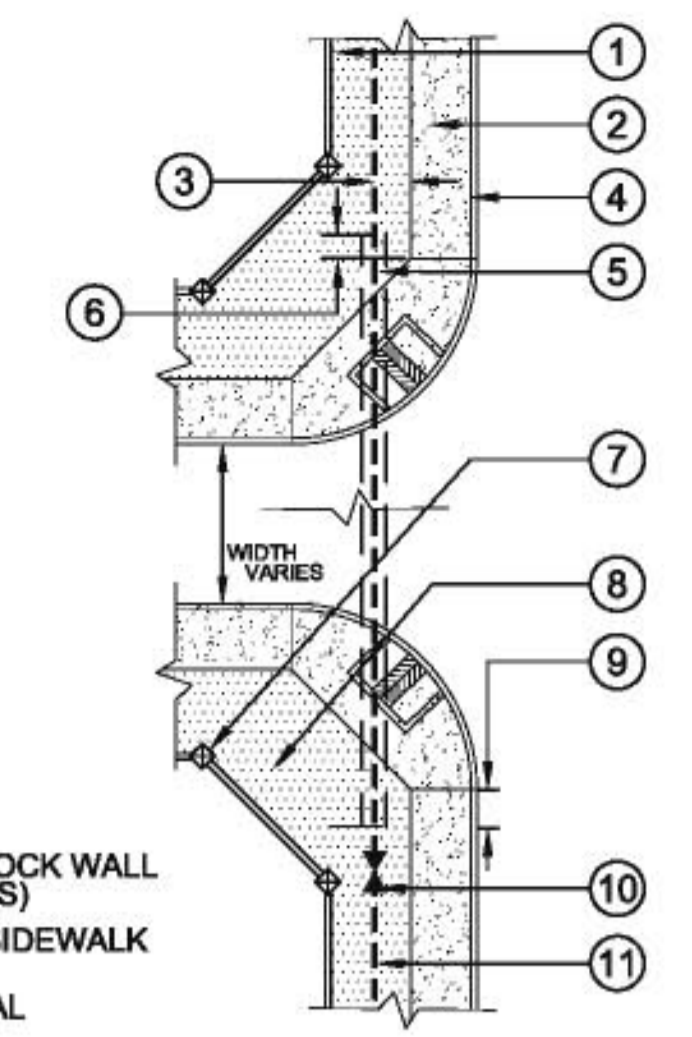
**Joint Restraints**  
The table below shows the number of adjacent joints to restrain.

Pipe Size	Bends				Step Reduction			Dead End	Gate Valve
	11	22	45	90	1	2	3		
2"									
2.5"								1	
3"								1	
4"				1	1	1	2	2	1
6"				1	1	2	2	3	1
8"				1	1	2	3	3	1
10"			1	2	1	2	3	4	2
12"			1	2	2	2	3	4	2
14"			1	3	2	3	3	4	NA
16"			1	3	2	3	4	5	NA

Step Reduction Example: 1 Step (8" x 6"), 2 Step (8" x 4"), 3 Step (8" x 3")

NOTE: ABOVE CHART IS FOR REFERENCE ONLY.  
INSTALLATION SHALL MEET OR EXCEED MANUFACTURER'S RECOMMENDATIONS.

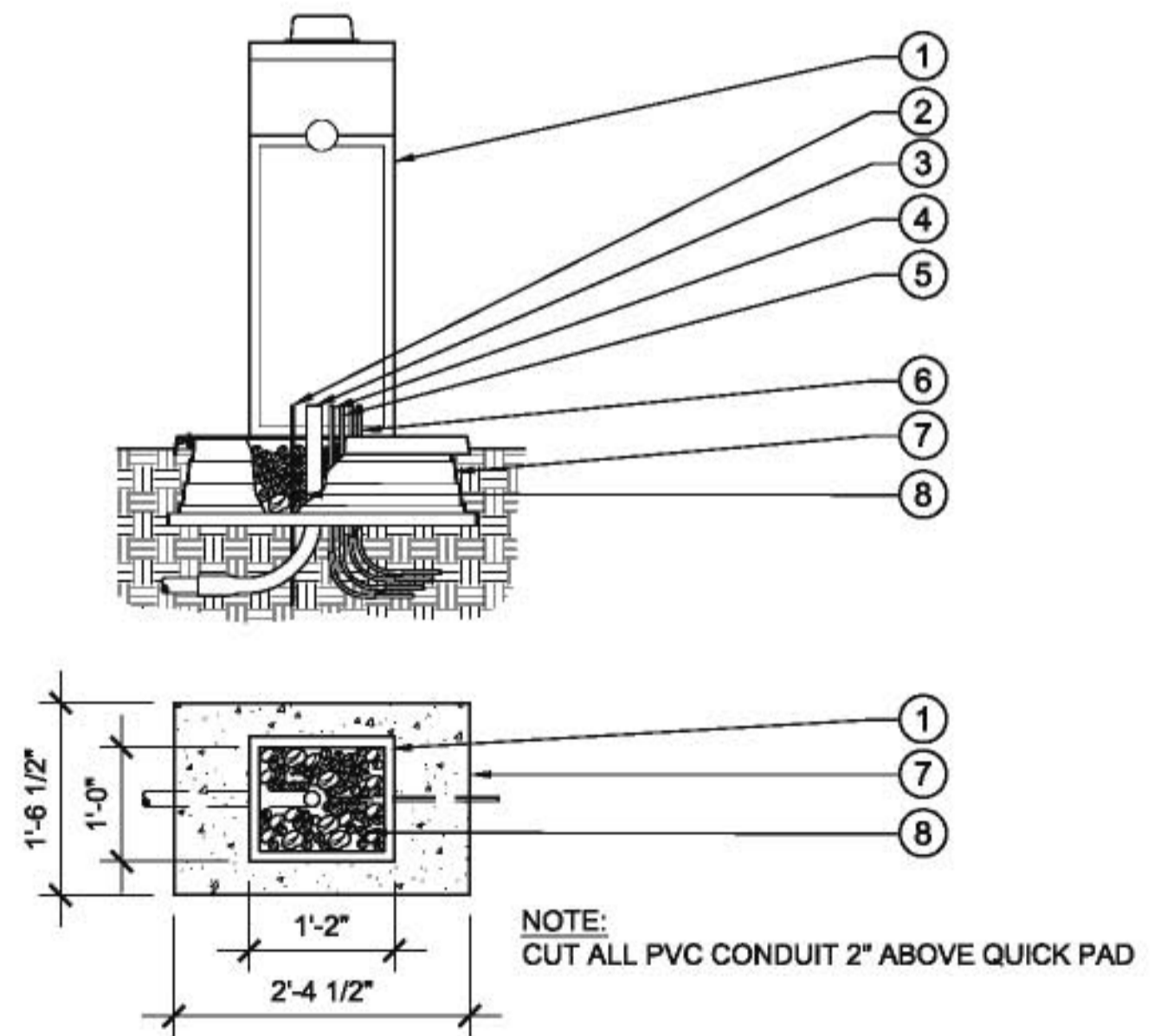
**18 JOINT RESTRAINT TABLE**  
FOR PIPE 2 1/2" - 3" IN SIZE  
SCALE: N.T.S.  
TRILOGY



- 1 TRACT BLOCK WALL (IF APPLIES)
- 2 COUNTY SIDEWALK
- 3 18" TYPICAL
- 4 COUNTY TYPICAL CURB
- 5 IRRIGATION SLEEVES AS REQ'D EXTEND 24" BEYOND EDGE OF CURB RADIUS AND 7-8" FROM THE COUNTY CURB TYPICAL PROVIDE MAINLINE, WIRING AND LATERAL SLEEVING PER PLAN AND DETAIL
- 6 24" MINIMUM
- 7 BLOCK PILASTER TYPICAL (IF APPLIES)
- 8 TYPICAL PLANTER / MONUMENT ENTRANCE (IF APPLIES)
- 9 24" BEYOND CURB RADIUS TYPICAL
- 10 ISOLATION VALVE PRIOR TO STREET CROSSING (SEE PLAN AND SPECS)
- 11 MAINLINE PER PLAN, SPECIFICATIONS AND DETAILS

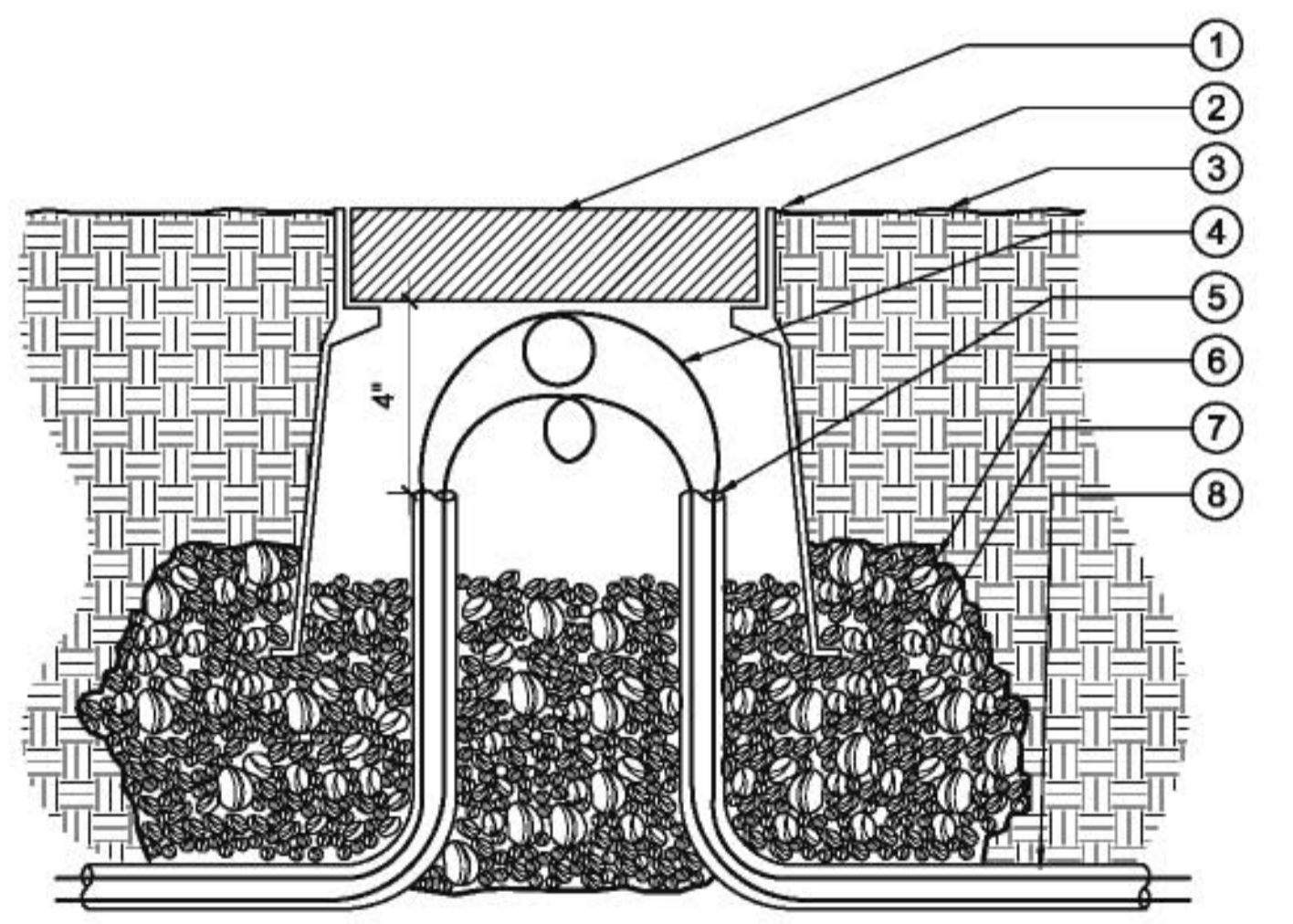
NOTES:  
1. LINES MUST HAVE MINIMUM CLEARANCE OF 4" FROM EACH OTHER AND THE APPROPRIATE CLEARANCE FROM POTABLE WATER LINES, PER RECYCLED WATER NOTES.  
2. ALL SLEEVES MUST BE SCH 40 2X THE SIZE OF THE LINE SIZE  
3. EXISTING SLEEVES MAY BE USED IF THEY ARE OF SUFFICIENT SIZE TO ACCOMMODATE NEW MAINLINE IN AN EFFORT TO AVOID PAVEMENT DEMOLITION

**19 STREET SLEEVING**  
SCALE: N.T.S.  
TRILOGY



- 1 CONTROLLER WITH STAINLESS STEEL ENCLOSURE (SEE SPECIFICATIONS)
- 2 GROUNDING ROD (INSTALL PER MANUFACTURER'S SPECIFICATIONS)
- 3 3" WIRE CONDUIT AND SWEEP FOR CONTROL AND COMMON WIRE
- 4 1" PVC SCH40 CONDUIT AND SWEEP FROM MASTER VALVE TO CONTROLLER
- 5 1" PVC SCH40 CONDUIT AND SWEEP FROM FLOW SENSOR TO CONTROLLER
- 6 3/4" PVC SCH40 SPARE CONDUIT AND SWEEP FOR FUTURE USE
- 7 QUICK PAD
- 8 3/4" GRAVEL SUMP 18" DEEP FOR INSTALLATION OF CONDUIT

**20 IRRIGATION CONTROLLER**  
SCALE: 3/4"=1'-0"  
TRILOGY



- 1 10" PLASTIC BOX W/ LOCKING LID
- 2 FLUSH IN LAWN AREAS, 2" IN SHRUB AREAS
- 3 FINISH GRADE
- 4 FLOW SENSOR AND / OR MASTER VALVE WIRE
- 5 ADD FOAM TO CONDUIT ONCE WIRE PULL IS COMPLETE (SEE SPECIFICATIONS)
- 6 INSTALL FILTER FABRIC AROUND GRAVEL SUMP
- 7 3/4" GRAVEL SUMP IN, UNDER, AND AROUND VALVE BOX. FILL TO TOP OF VALVE BOX HOLES
- 8 1" PVC SCH. 40 CONDUIT

NOTE: DO NOT CUT / SPLICE WIRES

**21 PULL BOX / SPLICE BOX**  
SCALE: 3"-1'-0"  
TRILOGY

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Registered Landscape Architect  
Cet. No. 3781 Exp. 11-30-2017

PROJECT NUMBER 16-666

AUTOCADD FILE:  
P:\#16658 Trilogy HOA\CDS\TRIOLOGY\_PRR

DATE: APRIL 21, 2016

DRAWN BY: BJA

CHECKED BY: YH

PROJECT TITLE:  
**TRIOLOGY HOA  
RECYCLED WATER  
CONVERSION PLAN**

SHEET TITLE:  
**RECYCLED WATER  
CONVERSION  
IRRIGATION DETAILS**

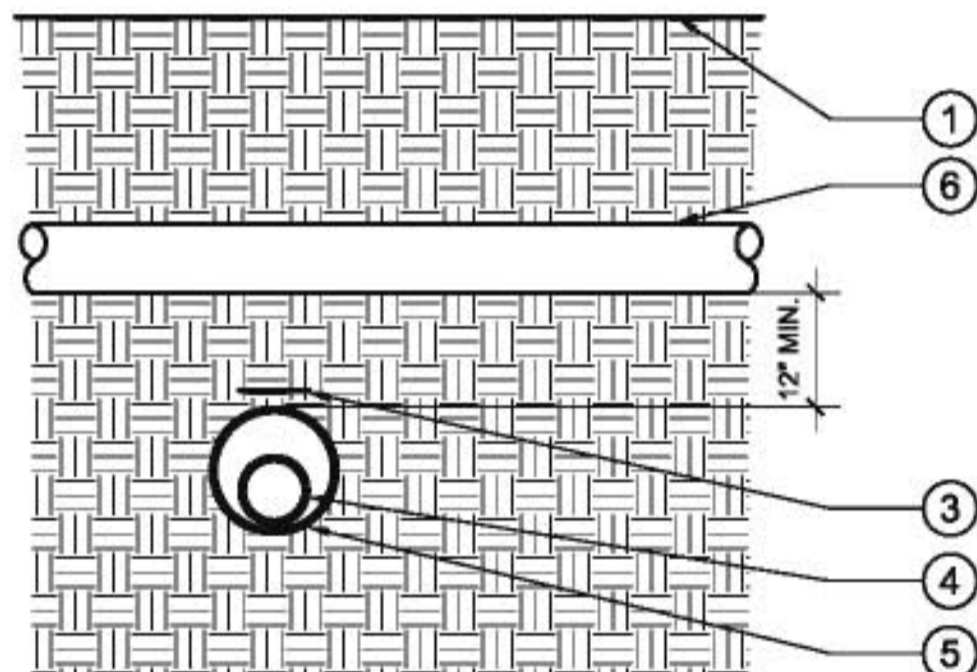
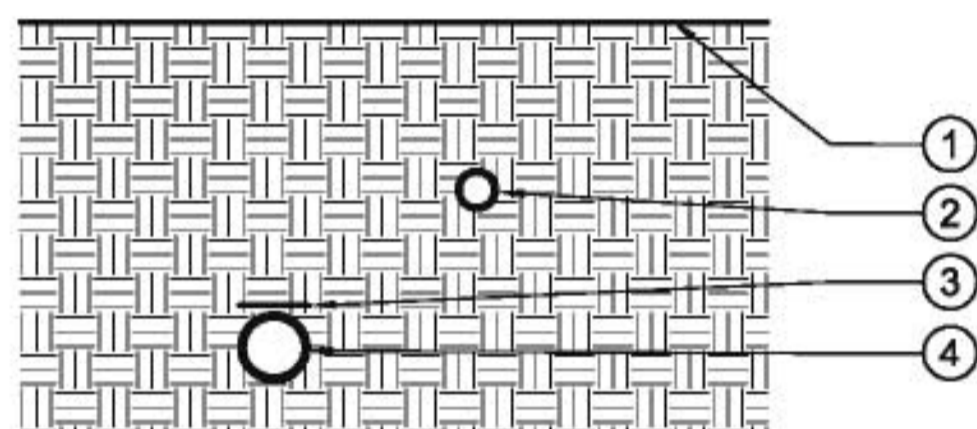
REVISION:

ISSUED FOR:

SHEET:

**ID-05**

SHEET: 11 OF 13 SHEETS



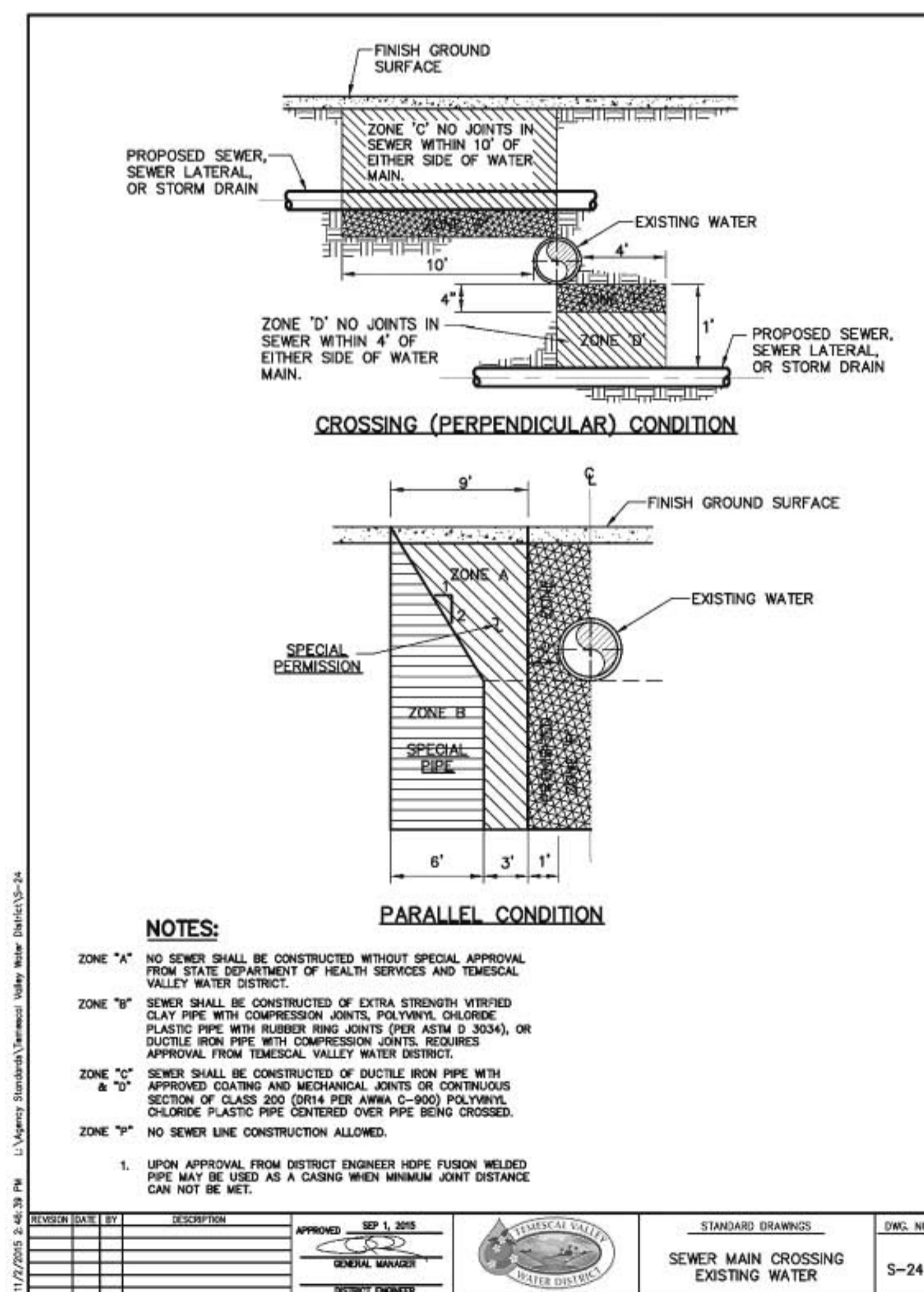
- ① FINISH GRADE
- ② "ALERTLINE" PURPLE LATERAL NON-PRESSURE RECLAIMED WATER PIPE FROM IRRIGATION HEAD TO IRRIGATION HEAD. WHENEVER THE LINES CROSS THE POTABLE PIPE NO SLEEVE IS REQUIRED.
- ③ 3" WIDE MARKER TAPE (NON DETECTABLE)
- ④ "ALERTLINE" PURPLE COLORED PRESSURE MAINLINE PIPE.
- ⑤ "ALERTLINE" PURPLE PVC SLEEVE
- ⑥ POTABLE MAINLINE OR SUPPLY LINE

NOTES:

-WHERE POTABLE LINES AND CONSTANT PRESSURE RECLAIMED WATER LINES CROSS, THE RECLAIMED LINES SHALL BE INSTALLED BELOW THE POTABLE WATER LINE IN A CLASS 200 PURPLE COLORED PVC SLEEVE. THE SLEEVE SHALL EXTEND 10 FEET ON EITHER SIDE OF THE POTABLE LINE FOR A TOTAL OF 20 FEET.

-WHERE CONSTANT PRESSURE RECLAIMED WATER LINES MUST CROSS ABOVE POTABLE LINES WRITTEN PERMISSION FROM LLWD REPRESENTATIVE MUST BE OBTAINED. RECLAIMED WATER LINES INSTALLED ABOVE POTABLE WATER LINES MUST BE INSTALLED PER TWWD STANDARD DETAIL S-24.

-ALL RECLAIMED WATER IRRIGATION PIPE AND SLEEVES SHALL BE PURPLE PVC AND LABELED AS SPECIFIED IN THE "STANDARD SPECIFICATIONS FOR WATER, SEWER AND RECLAIMED FACILITIES", LATEST EDITION AND THE RECLAIMED WATER NOTES.



22 **RECLAIMED WATER PIPE/  
AND POTABLE WATER PIPE CROSSING**  
SCALE: N.T.S TRILOGY

23 **SEWER / RECLAIMED WATER PIPE/  
AND POTABLE WATER PIPE CROSSING - TWWD**  
SCALE: N.T.S TRILOGY

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SECTION 328400 IRRIGATION SYSTEM			
PART 1 - GENERAL			
101	SUMMARY:		
A. THIS SECTION COVERS THE FURNISHING OF ALL MATERIALS AND PERFORMING ALL OPERATIONS TO PROVIDE A COMPLETE OPERABLE LANDSCAPE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS INCLUDING THE FOLLOWING:			
1	TRENCHING, STOCKPILING EXCAVATED MATERIALS AND REFILLING TRENCHES.		
2	IRRIGATION SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO: PIPING, PUMPS AND ENCLOSURES, VALVES, FITTINGS, STRAINERS, WIRING AND FINAL ADJUSTMENTS AS DETERMINED BY THE ARCHITECT TO INSURE EFFICIENT AND UNIFORM DISTRIBUTION.		
3	PIPE CONNECTIONS TO IRRIGATION PUMP STATIONS, WATER METERS AND FILTERS.		
4	TESTING AND INSPECTION OF IRRIGATION SYSTEM.		
5	CLEAN-UP AND MAINTENANCE		
102	GENERAL REQUIREMENTS:		
A. CODE REQUIREMENTS SHALL BE THOSE OF STATE AND MUNICIPAL CODES AND REGULATIONS LOCALLY GOVERNING THIS WORK, PROVIDING THAT ANY REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS, NOT CONFLICTING THEREWITH BUT EXCEEDING THE CODE REQUIREMENTS SHALL GOVERN, UNLESS WRITTEN PERMISSION TO THE CONTRARY IS GRANTED BY THE ARCHITECT. THIS INCLUDES ALL DEPARTMENT OF ENVIRONMENTAL HEALTH RULES AND REGULATIONS.			
B. CONFORM TO THE REQUIREMENTS OF THE REFERENCE INFORMATION LISTED BELOW EXCEPT WHERE MORE STRINGENT REQUIREMENTS ARE SHOWN OR SPECIFIED IN THE MOST CURRENT SET OF CONSTRUCTION DOCUMENTS:			
1	AMERICAN SOCIETY FOR TESTING MATERIAL (ASTM), FOR TEST METHODS SPECIFICALLY REFERENCED IN THIS SECTION.		
2	UNDERWRITERS LABORATORIES (UL), FOR UL WIRES AND CABLES.		
C. WORK INVOLVING SUBSTANTIAL PLUMBING FOR INSTALLATION OF BRASS PIPING AND OTHER RELATED WORK SHALL BE EXECUTED BY A LICENSED AND BONDED PLUMBING CONTRACTOR. ANY NECESSARY PERMITS SHALL BE OBTAINED PRIOR TO BEGINNING WORK.			
D. SPECIFIED DEPTHS OF PRESSURE SUPPLY LINES, LATERALS AND PITCH OF PIPES AS STATED IN THIS SECTION ARE MINIMUMS. SETTLEMENT OF TRENCHES LOWER THAN GRADES SPECIFIED ON THE FINAL GRADING PLANS IS CAUSE FOR REMOVAL OF FINISH GRADE TREATMENT, REFILLING TRENCHES, RECOMPACTING AND REPAIRING OF FINISH GRADE TREATMENT.			
E. FOLLOW CURRENT PRINTED MANUFACTURERS SPECIFICATIONS AND DRAWINGS FOR ITEMS OR INFORMATION NOT SPECIFIED OR GRAPHICALLY INDICATED IN THE MOST CURRENT SET OF CONSTRUCTION DRAWINGS.			
F. SCALED DIMENSIONS ARE APPROXIMATE AND AT TIMES IT IS NOT POSSIBLE TO INDICATE OFFSETS, FITTINGS AND OTHER RELATED EQUIPMENT GRAPHICALLY ON THE CONSTRUCTION DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR MINOR CHANGES CAUSED BY ACTUAL SITE CONDITIONS. BEFORE PROCEEDING WITH ANY WORK, THE CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS OF RELATED ARCHITECTURAL ELEMENTS, UTILITIES AND LANDSCAPING AND FURNISH AND INSTALL REQUIRED FITTINGS.			
G. DO NOT INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE CONSTRUCTION DRAWINGS WHEN IT IS OBVIOUS THAT ACTUAL FIELD CONDITIONS SUCH AS PHYSICAL OBSTRUCTIONS, GRADING DISCREPANCIES AND FIELD DIMENSIONS VARY FROM THOSE RECORDED ON THE CONSTRUCTION DRAWINGS, IMMEDIATELY BRING ANY SUCH DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO PROCEEDING WITH WORK. IF IMMEDIATE NOTIFICATION IS NOT GIVEN AND SUCH DISCREPANCIES EXIST, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR NECESSARY REVISIONS, AS DETERMINED BY THE ARCHITECT.			
103	EXISTING FIELD CONDITIONS:		
A. PRESERVE AND PROTECT ALL EXISTING TREES, PLANTS, MONUMENTS, STRUCTURES, HARDSCAPE AND ARCHITECTURAL ELEMENTS FROM DAMAGE DUE TO WORK IN THIS SECTION. IN THE EVENT THAT DAMAGE DOES OCCUR TO INHABITABLE OBJECT AND STRUCTURES, THE CONTRACTOR WILL REPAIR OR REPLACE SUCH DAMAGE TO THE SATISFACTION OF THE OWNER OR OWNERS REPRESENTATIVE. DAMAGE OR INJURY TO LIVING PLANT MATERIAL WILL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.			
B. TRENCHING OR OTHER WORK REQUIRED IN THIS SECTION UNDER THE LIMB SPREAD OF EXISTING TREES SHALL BE DONE BY HAND OR BY OTHER METHODS SO AS TO PREVENT DAMAGE OR HARM TO LIMBS, BRANCHES AND ROOTS.			
C. TRENCHING IN AREAS WHERE ROOT DIAMETER EXCEEDS 2 INCHES SHALL BE DONE BY HAND. EXPOSED ROOTS OF THIS SIZE SHALL BE HEAVILY WRAPPED WITH MOISTENED BURLAP TO AVOID SCARRING OR EXCESSIVE DRYING. WHERE A TRENCHING MACHINE IS OPERATED IN PROXIMITY TO ROOTS THAT ARE LESS THAN 2 INCHES, THE WALL OF THE TRENCH SHALL BE HAND TRIMMED, MAKING CLEAN CUTS THROUGH ROOTS.			
D. TRENCHES ADJACENT TO OR UNDER EXISTING TREES SHALL BE CLOSED WITHIN 24 HOURS, AND WHEN THIS IS NOT POSSIBLE, THE SIDE OF TRENCH CLOSEST TO THE TREE OR TREES AFFECTED SHALL BE COVERED WITH MOISTENED BURLAP.			
E. PROTECT, MAINTAIN AND COORDINATE WORK WITH OTHER CONTRACTS, SPECIFICATIONS, TRADES, AND UTILITIES. EXTREME CARE SHALL BE EXERCISED IN EXCAVATING AND WORKING IN THE AREA DUE TO EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES CAUSED BY THEIR OPERATIONS. IN THE EVENT THAT DAMAGE DOES OCCUR, THE COSTS OF SUCH REPAIRS SHALL BE PAID BY THE CONTRACTOR UNLESS OTHER ARRANGEMENTS HAVE BEEN MADE WITH THE OWNER.			
F. USE CAUTION WHERE TRENCHES AND PIPING CROSS EXISTING ROADWAYS, SIDEWALKS, HARDSCAPE, PATHS OR CURBS. IN THE EVENT THAT DAMAGE DOES OCCUR, THE CONTRACTOR WILL REPAIR SUCH DAMAGE AT THE CONTRACTORS EXPENSE.			
104	REQUIRED DOCUMENTS:		
A. SUBMITTALS			
1	SUBMIT (3) THREE SETS OF ALL IRRIGATION EQUIPMENT TO BE USED, MANUFACTURERS BROCHURES, SERVICE MANUALS, GUARANTEES, AND OPERATING INSTRUCTIONS FOR APPROVAL TO THE ARCHITECT PRIOR TO BEGINNING WORK. SUBMITTALS SHOULD BE IN A BOUND FORM COMPLETE WITH TABLE OF CONTENTS. THE CONTRACTOR SHALL NOT PROCEED WITH WORK IN THE FIELD UNTIL THIS SUBMITTAL IS APPROVED IN ITS ENTIRETY BY THE ARCHITECT.		
B. SERVICE MANUALS			
1	THE CONTRACTOR SHALL FURNISH (2) TWO SERVICE MANUALS TO THE OWNER PRIOR TO SCHEDULING A WALK THROUGH FOR SUBSTANTIAL COMPLETION. MANUALS SHALL BE SUBMITTED IN A BOUND FORM COMPLETE WITH A TABLE OF CONTENTS, AND WORKMANSHIP FORM ON COMPANY LETTER-HEAD COPY OF CONTRACTORS WARRANTY, COPY OF THE LETTER OF CERTIFICATION FOR THE CENTRAL CONTROL SYSTEM ON THE CENTRAL CONTROL SYSTEM MANUFACTURERS LETTER-HEAD AND SHALL CONTAIN COMPLETE ENLARGED DRAWINGS OF ALL EQUIPMENT INSTALLED SHOWING COMPONENT WARRANTIES AND CATALOG NUMBERS TOGETHER WITH THE MANUFACTURERS NAME AND ADDRESS. MANUALS SHALL INCLUDE OPERATION INSTRUCTIONS. MANUALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER OR OWNERS REPRESENTATIVE AS TO COMPLETENESS.		
C. RECORD DRAWINGS/AS-BUILTS			
1	PRIOR TO BEGINNING WORK IN THE FIELD THE CONTRACTOR SHALL SECURE A COMPLETE SET OF IRRIGATION PLANS AT THE ORIGINAL SCALE COMPLETE WITH DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING A SET OF BLUELINE PRINTS FOR EVERY WEEK ON THE PROJECT. AT THE END OF EACH WORKING DAY, THE CONTRACTOR SHALL RECORD ALL WORK ACCOMPLISHED FOR THAT DAY ON THE SET OF BLUELINE PRINTS IN RED INK. THESE RECORD DRAWINGS SHALL BE BROUGHT UP TO DATE AT THE END OF EACH WORK WEEK BY A QUALIFIED DRAFTSPERSON. THE DRAWINGS SHOULD INDICATE THE FOLLOWING:		
a.	DIMENSION FROM TWO PERMANENT POINTS OF REFERENCE (BUILDING CORNERS, FIXED HARDSCAPE CORNERS, ROAD INTERSECTIONS, PERMANENT EXISTING UTILITIES) THE LOCATION OF THE FOLLOWING ITEMS:	205	STAINLESS STEEL TAPPING SLEEVE
1	WATER METERS.		
2	PUMP STATIONS.		
3	CONNECTION TO EXISTING WATER LINES.		
4	ROUTING OF PRESSURE SUPPLY LINES AT EVERY 100' ALONG ROUTING.		
5	FILTERS	206	MASTER VALVES
6	FLOW SENSORS		
7	MASTER VALVES		
8	ISOLATION GATE VALVES		
9	QUICK COUPLING VALVES		
10	AIR RELEASE VALVES		
11	ELECTRICAL RIMS TO PUMP STATIONS.		
12	OTHER EQUIPMENT AS DIRECTED BY THE ARCHITECT.		
13	SLEEVING		
2	PRIOR TO SCHEDULING A WALK THROUGH FOR SUBSTANTIAL COMPLETION, PROVIDE A RECORD SET OF FIELD AS-BUILT DRAWINGS AS DESCRIBED ABOVE TO THE ARCHITECT FOR REVIEW. AFTER REVIEW, THE ARCHITECT WILL RETURN THE AS-BUILT SET TO THE FIELD FOREMAN REQUESTING FURTHER INFORMATION OR WILL NOTIFY THE OWNER THAT THE RECORD SET OF FIELD AS-BUILTS DRAWINGS ARE COMPLETE. AFTER APPROVAL FROM THE OWNER, A WALK THROUGH FOR SUBSTANTIAL COMPLETION MAY BE SCHEDULED.		
2	THE ARCHITECT AND THE CONTRACTOR SHALL VERIFY THE FINAL AS-BUILTS AT THE TIME OF THE FINAL WALK THROUGH AND ONCE SUCCESSFUL, THE ARCHITECT SHALL DELIVER THE FINAL SET OF AS-BUILT DRAWINGS TO THE OWNER OR OWNERS REPRESENTATIVE PRIOR TO INITIATING THE MAINTENANCE PERIOD FOR THE CONTRACTOR.		
PART 2 - PRODUCTS			
201	PIPING		
A. GENERAL PIPING:			
1	PIPE SIZES SHOWN ARE NOMINAL INSIDE DIAMETER UNLESS OTHERWISE NOTED.		
2	PIPE SHALL BE IDENTIFIED WITH THE FOLLOWING INDELEBIL MARKINGS:		
a.	MANUFACTURERS NAME		
b.	NOMINAL PIPE SIZE		
c.	SCHEDULE OR CLASS		
d.	PRESSURE RATING		
e.	NSF (NATIONAL SANITATION FOUNDATION) SEAL OF APPROVAL.		
f.	DATE OF EXTRUSION.		
B. SOLVENT WELD PURPLE PRESSURE SUPPLY LINE:			
1	SOLVENT WELD PURPLE PRESSURE SUPPLY LINE: (DOWNSTREAM OF WATER METER) PVC SCH. 40 (2" MAX)		
a.	MANUFACTURED FROM VIRGIN POLYVINYL CHLORIDE (PVC) COMPOUND IN ACCORDANCE WITH ASTM D2241 AND ASTM D1784; CELL CLASSIFICATION 12454-B.		
b.	TYPE 1, GRADE 1.		
2	FITTINGS: STANDARD WEIGHT, SCHEDULE 80, INJECTION MOLDED PVC, COMPLYING WITH ASTM D1784 AND D2466, CELL CLASSIFICATION 12454-B.		
a.	THREADS- INJECTION MOLDED TYPE (WHERE REQUIRED)		
b.	TEES AND ELLS- SIDE GATED		
3	THREADED NIPPLES: ASTM D2464, SCHEDULE 80 WITH MOLDED THREADS.		
4	JOINT CEMENT AND PRIMER: TYPE AS RECOMMENDED BY MANUFACTURER OF PIPE AND FITTINGS.		
C. GASKET-END PURPLE PRESSURE SUPPLY LINE:			
1	GASKET-END PRESSURE SUPPLY LINE: PVC CLASS 200 (2.5" AND LARGER).		
a.	MANUFACTURED FROM VIRGIN POLYVINYL CHLORIDE (PVC) COMPOUND IN ACCORDANCE WITH ASTM D2241 AND ASTM D1784; CELL CLASSIFICATION 12454-B.		
b.	TYPE 1, GRADE 1.		
2	FITTINGS: PER LEGEND. EPOXY COATED CAST IRON OR EPOXY COATED STEEL; COMPLYING WITH ASTM D1784 AND D2466, CELL CLASSIFICATION 12454-B. LEEMCO FITTINGS.		
3	GASKETS: FACTORY INSTALLED IN PIPE AND FITTINGS, HAVING A METAL OR PLASTIC SUPPORT WITHIN THE GASKET OR A PLASTIC RETAINER RING FOR GASKET.		
4	LUBRICANT: AS RECOMMENDED BY MANUFACTURER OF PIPE FITTINGS.		
D. NON-PRESSURE LINES BELOW GRADE:			
1	NON-PRESSURE LINES: (DOWNSTREAM OF SAND MEDIA FILTER) PVC SCH 40, PURPLE PIPE.		
2	FITTINGS: STANDARD WEIGHT, SCHEDULE 80, INJECTION MOLDED PVC, COMPLYING WITH ASTM D1784 AND D2466, CELL CLASSIFICATION 12454-B.		
a.	THREADS- INJECTION MOLDED TYPE (WHERE REQUIRED)		
b.	TEES AND ELLS- SIDE GATED		
c.	THREADED NIPPLES: ASTM D2464, SCHEDULE 80 WITH MOLDED THREADS.		
3	JOINT CEMENT AND PRIMER: TYPE AS RECOMMENDED BY MANUFACTURER OF PIPE AND FITTINGS.		
E. SLEEVING AND CONDUIT:			
1	ALL PVC SLEEVING FOR PRESSURE SUPPLY LINE AND NON- PRESSURE SUPPLY LINE SHALL BE TWICE THE NOMINAL SIZE OF THE PIPE WITHIN AND USED FOR SLEEVES BELOW GRADE AS INDICATED IN THE FOLLOWING SLEEVE AND CONDUIT SCHEDULE:		
2	SLEEVING AND CONDUIT MATERIAL UNDER HARDSCAPE:		
a.	PVC SCH40 FOR ALL PRESSURE SUPPLY LINE (PURPLE PIPE)		
b.	PVC SCH 40 FOR NON- PRESSURE LINES.		
c.	(1) ONE 1" PVC SCH 40 WIRE CONDUIT FOR MASTER VALVE, FLOW SENSOR, PUMP START AND PUMP POWER PER PLAN.		
F. BRASS PIPE AND FITTINGS:			
1	PRESSURE SUPPLY LINE (FROM POINT OF CONNECTION THROUGH FLOW SENSOR) BRASS PIPE SHALL BE REGULAR WEIGHT, 85% RED BRASS, ANSI SCHEDULE 40 SCREWED PIPE.		
2	FITTINGS: MEDIUM BRASS, SCREWED AT 125 POUND CLASS.		
202	BOOSTER PUMP		
A. SEE PUMP SPECIFICATION ON SHEET ID-01.			
203	SAND MEDIA FILTER		
A. AS SPECIFIED ON IRRIGATION LEGEND.			
204	PRESSURE REGULATING VALVE		
A. PRESSURE REDUCING VALVES SHALL BE OF BRONZE AND STAINLESS STEEL CONSTRUCTION AND BE ADJUSTED FROM 25 P.S.I. TO 125 P.S.I.			
		302	EXCAVATION AND BACKFILLING OF TRENCHES
		A.	TRENCH EXCAVATION SHALL AS MUCH AS POSSIBLE FOLLOW THE LAYOUT SHOWN ON THE DRAWINGS. TRENCHES SHALL BE STRAIGHT IN ALIGNMENT AND SUPPORT PIPE CONTINUOUSLY ON BOTTOM OF TRENCH. REMOVE ROCKS AND DEBRIS GREATER THAN 1" IN DIAMETER. OVER EXCAVATE AS REQUIRED FOR BEDDING MATERIAL.
		B.	DEPTH OF TRENCH (IN LANDSCAPE AREAS):  PRESSURE SUPPLY LINE: 30" FROM TOP OF PIPE TO FINISH GRADE. CONTROL WIRING: DIRECTLY AT SIDE AND BOTTOM OF PRESSURE SUPPLY LINE. PRESSURE SUPPLY LINE LOCATOR TAPE: 6" ABOVE TOP OF PIPE.
		C.	DEPTH OF TRENCH (UNDER ASPHALT PAVING OR CONCRETE):  PRESSURE SUPPLY LINE (3" AND SMALLER): 36" FROM FINISH SURFACE. CONTROL WIRING: DIRECTLY AT SIDE AND BOTTOM OF PRESSURE SUPPLY LINE. PRESSURE SUPPLY LINE LOCATOR TAPE: 6" ABOVE TOP OF PIPE.
		1	PIPING LOCATED UNDER ASPHALT PAVING OR CONCRETE SHALL BE INSTALLED WITH THE APPROPRIATE SIZED SLEEVE AND BACKFILLED WITH SAND BEDDING (6" BELOW PIPE AND 6" ABOVE PIPE).
		2	COMPACT BACKFILL MATERIAL IN 6" LIFTS AT 90% MAXIMUM DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557 USING MANUAL OR MECHANICAL TAMPING DEVICE.
		3	SET IN PLACE, CAP, AND PRESSURE TEST PIPING IN THE PRESENCE OF THE OWNER OR OWNERS REPRESENTATIVE PRIOR TO BACKFILLING.
		D.	WIDTH OF TRENCH:  PIPE GREATER THAN 3": 14" MINIMUM. PIPE LESS THAN 3": 7" MINIMUM.
		E.	WIDTH BETWEEN TRENCHES:  IRRIGATION TRENCH TO IRRIGATION TRENCH: 6" MINIMUM. IRRIGATION TRENCH AND OTHER TRADE TRENCHES: MINIMUM ALLOWED BY DEPARTMENT OF ENVIRONMENTAL HEALTH OR OTHER GOVERNING AGENCIES.
		F.	BORING: BORING WILL ONLY BE PERMITTED WHERE PIPE MUST PASS UNDER AN OBSTRUCTION THAT CANNOT BE AVOIDED OR REMOVED. BACKFILL SHALL MATCH SURROUNDING SOIL DENSITY AND GRAIN. BORING UNDER EXISTING PAVING, SIDEWALKS, OR HARDSCAPE MAY BE PERMITTED AT CONTRACTORS OWN RISK. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS OR DAMAGE TO SUCH ITEMS AT THEIR OWN EXPENSE.
		G.	BACKFILLING: BACKFILLING OF TRENCHES MAY NOT BE DONE UNTIL ALL REQUIRED TESTING FOR THE IRRIGATION SYSTEM HAS BEEN COMPLETED.
		1	MATERIAL: EXCAVATED MATERIAL IS GENERALLY CONSIDERED TO BE ADEQUATE FOR BACKFILLING OPERATIONS. BEFORE BEGINNING THE BACKFILLING OPERATION, INSURE THAT BACKFILL MATERIAL IS FREE FROM DEBRIS AND ROCKS GREATER THAN 1" IN DIAMETER, AND IS NOT MIXED WITH TOPSOIL. THESE MATERIALS AFTER SEPARATED FROM BACKFILL, SHALL BE LEGALLY DISPOSED OF AT CONTRACTORS EXPENSE.
		2	BEDDING: BED PRESSURE SUPPLY LINE WITH CONSTRUCTION GRADE SAND 6" ABOVE AND 6" BELOW PIPE AS SHOWN ON DETAILS. REMAINING BACKFILL MAY BE AS DESCRIBED ABOVE.
		3	BED ALL ELECTRICAL CONTROL WIRE TRENCHED SEPARATE FROM PRESSURE SUPPLY LINE, WITH CONSTRUCTION GRADE SAND 6" ABOVE AND 6" BELOW WIRES.
		4	WHEN BACKFILLING, SLIGHTLY MOUND FILLED TRENCHES FOR SETTLEMENT AFTER BACKFILLING IS COMPLETED. COMPACT BACKFILL TO A 90% MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D1557 WITH A MECHANICAL TAMPER. DO NOT LEAVE TRENCHES OPEN FOR A PERIOD GREATER THAN 48 HOURS. OPEN TRENCHES SHALL BE PROTECTED IN ACCORDANCE WITH CURRENT OSHA REGULATIONS.
		5	SMOOTH TRENCHES TO FINISH GRADE PRIOR TO REQUESTING A WALK THROUGH FOR SUBSTANTIAL COMPLETION WITH THE ARCHITECT.
		303	POINT OF CONNECTION(S)
		A.	POINT OF CONNECTION SHALL BE APPROXIMATELY AS SHOWN ON DRAWINGS. CONNECT NEW UNDERGROUND PIPING AND VALVES AND PROVIDE ALL FLANGES, ADAPTERS, OR OTHER NECESSARY FITTINGS.
		A.	INSTALLATION OF SOLVENT WELD POLYVINYL CHLORIDE PIPE (PVC)  POLYVINYL CHLORIDE PIPE SHALL BE CUT WITH AN APPROVED PVC PIPE CUTTER DESIGNED ONLY FOR THAT PURPOSE.
		B.	ALL PLASTIC-TO-PLASTIC SOLVENT WELD JOINTS SHALL USE ONLY THE SOLVENT RECOMMENDED BY THE PIPE MANUFACTURER. DO NOT INSTALL SOLVENT WELD PIPE WHEN TEMPERATURE IS BELOW 40 F.
		C.	PIPE ENDS AND FITTINGS SHALL BE WIPED WITH MEK, OR APPROVED EQUAL, BEFORE WELDING SOLVENT IS APPLIED. WELDED JOINTS SHALL BE GIVEN A MINIMUM OF 15 MINUTES TO SET BEFORE MOVING OR HANDLING.
		D.	PIPE SHALL BE SNAKED FROM SIDE-TO-SIDE ON TRENCH BOTTOM TO ALLOW FOR EXPANSION AND CONTRACTIONS.
		E.	ALL CHANGES OF DIRECTION OVER 15 DEGREES SHALL BE MADE WITH APPROPRIATE FITTINGS.
		F.	WHEN PIPE LAYING IS NOT IN PROGRESS AT THE END OF EACH WORKING DAY, CLOSE PIPE ENDS WITH TIGHT PLUG OR CAP.
		G.	INSTALL PRESSURE SUPPLY LINE LOCATING TAPE ALONG THE ENTIRE LENGTH OF PRESSURE SUPPLY LINE.
		H.	COORDINATE PRESSURE SUPPLY LINE WITH SAND BEDDING OPERATIONS.
		I.	NO WATER SHALL BE PERMITTED IN THE PIPE UNTIL INSPECTIONS HAVE BEEN COMPLETED AND A PERIOD OF AT LEAST 24 HOURS HAS ELAPSED FOR SOLVENT WELD SETTING AND CURING.
		J.	CENTER LOAD PIPE WITH SMALL AMOUNT OF BACKFILL TO PREVENT ARCHING AND SLIPPING UNDER PRESSURE. LEAVE JOINTS EXPOSED FOR INSPECTION DURING TESTING.
		305	INSTALLATION OF GASKET-END POLYVINYL CHLORIDE PIPE
		A.	LAY PIPE AND MAKE PIPE TO FITTING OR PIPE TO PIPE JOINTS FOLLOWING OR TO RECOMMENDATIONS (JOINS- MANVILLE GUIDE FOR INSTALLATION OF RING-TITE PIPE), OR PIPE MANUFACTURERS RECOMMENDATIONS.
		B.	PIPE SHALL BE SNAKED FROM SIDE-TO-SIDE OF TRENCH BOTTOM TO ALLOW FOR EXPANSION AND CONTRACTIONS.
		C.	ALL CHANGES OF DIRECTION OVER 15 DEGREES SHALL BE MADE WITH FITTINGS.
		D.	INSTALL PIPE JOINT RESTRAINTS ON ALL GASKET END FITTINGS AS SPECIFIED ABOVE AND AS SHOWN ON DETAILS.
		E.	WHEN PIPE LAYING IS NOT IN PROGRESS AND AT THE END OF EACH WORKING DAY, CLOSE PIPE ENDS WITH TIGHT PLUG OR CAP.
		F.	INSTALL PRESSURE SUPPLY LINE LOCATING TAPE ALONG THE ENTIRE LENGTH OF PRESSURE SUPPLY LINE.
		G.	CENTER LOAD PIPE WITH SMALL AMOUNT OF BACKFILL TO PREVENT ARCHING AND SLIPPING UNDER PRESSURE. LEAVE JOINTS EXPOSED FOR INSPECTION DURING TESTING.
		H.	COORDINATE PRESSURE SUPPLY LINE WITH SAND BEDDING OPERATIONS.
		I.	NO WATER SHALL BE PERMITTED IN THE PIPE UNTIL INSPECTIONS HAVE BEEN COMPLETED AND A PERIOD OF AT LEAST 24 HOURS HAS ELAPSED FOR SOLVENT WELD SETTING AND CURING.
		PART 3 - EXECUTION	
		301	PREPARATION
		A.	EXAMINE FIELD CONDITIONS PRIOR TO BEGINNING WORK DESCRIBED IN THIS SECTION. GRADING OPERATIONS SHALL BE COMPLETED AND APPROVED PRIOR TO BEGINNING WORK.
		B.	VERIFY ALL SLEEVE LOCATIONS BELOW FUTURE HARDSCAPE AND/OR UNDER POTABLE WATER LINES PRIOR TO BEGINNING WORK IN THIS SECTION. FLAG ALL EXISTING SLEEVES AND CONDUITS INSTALLED BY OTHER TRADES. REPORT ANY CONFLICTS AND DISCREPANCIES TO THE ARCHITECT IMMEDIATELY.
		C.	IRRIGATION SYSTEM SHALL BE CONSTRUCTED TO THE SIZES AND GRADES AT THE LOCATIONS SHOWN ON THE DRAWINGS. MARK WITH POWDERED LIME OR MARKING PAINT ROUTING OF PRESSURE SUPPLY LINE. ARCHITECT SHALL REVIEW ROUTING AND DIRECT ANY NECESSARY CHANGES WITH THE CONTRACTOR PRIOR TO PROCEEDING TO OTHER LOCATIONS. THIS REVIEW DOES NOT IN ANY WAY ALLEVIATE THE CONTRACTOR FROM THE RESPONSIBILITIES ASSOCIATED WITH PROPER INSTALLATION.
		D.	INSTALL SLEEVES, TO ACCOMMODATE PIPES AND WIRES, UNDER PAVING UNDER ALL POTABLE WATER CROSSINGS, HARDSCAPE AREAS, SIDEWALKS, AND PATHS PRIOR TO ASPHALT AND CONCRETE OPERATIONS. COMPACT BACKFILL AROUND SLEEVES TO 95% MODIFIED PROCTOR DENSITY WITHIN 2% OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D1557.



Registered Landscape Architect  
Cert. No. 3781 Exp. 11-30-2017

PROJECT NUMBER: 16-666

AUTOCAD FILE:  
P:\16666 TrilogY HOA\CAD\3D\TRILOGY\_PRRR

DATE: APRIL 21, 2016

DRAWN BY: BJA

CHECKED BY: YH

PROJECT TITLE:  
**TRILOGY HOA  
RECYCLED WATER  
CONVERSION PLAN**

SHEET TITLE:  
**RECYCLED WATER  
CONVERSION  
IRRIGATION SPECS**

REVISION:

ISSUED FOR:

SHEET:

**ID-06**

SHEET: 12 OF 13 SHEETS

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- 3.06 INSTALLATION OF BRASS PIPE:
- A. BRASS PIPING SHALL BE CUT BY A POWER HACKSAW, A CIRCULAR CUTTING MACHINE USING AN ABRASIVE WHEEL, OR BY MEANS OF A HAND HACKSAW. ALL PIPE SHALL BE REAMED AND ROUGH EDGES OR BURRS REMOVED SO THAT A SMOOTH AND UNOBSTRUCTED FLOW IS OBTAINED.
  - B. ECCENTRIC REDUCING FITTINGS SHALL BE USED WHERE ANY CHANGE IN PIPE SIZE OCCURS. BUSHINGS SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ARCHITECT.
  - C. JOINT COMPOUND SHALL BE CAREFULLY AND SMOOTHLY PLACED ON THE MALE THREAD ONLY. ALL SCREWED JOINTS MUST BE TIGHTENED WITH TONGS OR WRENCHES. CAULKING OF ANY KIND WILL NOT BE PERMITTED.
  - D. ALL EXPOSED PIPING UNDER STRUCTURAL SLABS SHALL BE STENCILED WITH "IRRIGATION MAIN" OR "IRRIGATION LATERAL" AS REQUIRED, AT TEN FOOT (10') INTERVALS IN BLACK LETTERING, 3/4" MINIMUM HIGH.
- 3.07 SAND MEDIA FILTER:
- A. INSTALL SAND MEDIA FILTERS AND ASSOCIATED EQUIPMENT AT THE LOCATION AS SPECIFIED ON DRAWINGS AND PER MANUFACTURERS RECOMMENDATIONS.
- 3.08 MASTER VALVES:
- A. INSTALL MASTER VALVES AS SPECIFIED ON DRAWINGS AND PER MANUFACTURERS SPECIFICATIONS.
- 3.09 FLOW SENSORS:
- A. INSTALL FLOW SENSORS AS SPECIFIED ON DRAWINGS AND PER MANUFACTURERS SPECIFICATIONS.
- 3.10 ISOLATION GATE VALVES
- A. INSTALL ISOLATION BALL VALVES IN SEPARATE VALVE BOXES AS SPECIFIED ON THE DRAWINGS.
- 3.11 AIR RELIEF VALVES
- A. INSTALL AIR RELEASE VALVES IN SEPARATE VALVE BOXES AS SPECIFIED ON THE DRAWINGS.
- 3.12 VALVE BOXES
- A. INSTALL VALVE BOXES WITH EACH TYPE OF IRRIGATION EQUIPMENT SO THAT TOP OF VALVE BOX IS ABOVE FINISH GRADE AS SPECIFIED ON THE DETAIL DRAWINGS. VALVE BOX EXTENSIONS ARE NOT ACCEPTABLE, UNLESS OTHERWISE SHOWN ON DETAIL.
  - B. PLACE GRAVEL SUMP BELOW AND AROUND EACH VALVE BOX PRIOR TO INSTALLING VALVE BOX AS SPECIFIED ON THE DRAWINGS. PLACE REMAINING PORTION OF GRAVEL INSIDE VALVE BOX ALLOWING FULL ACCESS IN AND AROUND ALL FITTINGS. VALVE BOX SHALL BE FULLY SUPPORTED BY GRAVEL SUMP. NO BRICK OR WOOD SUPPORTS ARE ALLOWED.
  - C. BRAND VALVE BOX LID OF ASSOCIATED EQUIPMENT AS FOLLOWS:  
ELECTRIC CONTROL VALVE BOX LID WITH "CONTROLLER LETTER AND STATION NUMBER".  
ISOLATION GATE VALVE BOX LID WITH THE LETTERS "IGV".  
AIR RELIEF VALVE BOX LID WITH THE LETTERS "AR".  
  
LETTER AND NUMBER SIZE OF BRAND SHALL BE NO LESS THAN 1" AND NO GREATER THAN 1 1/2" IN HEIGHT AND SHALL BE 1/8" MAXIMUM IN DEPTH. PROVIDE SAMPLE BRANDING TO THE OWNER OR OWNERS REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK.
  - D. WALK THROUGH FOR SUBSTANTIAL COMPLETION WILL NOT BE ALLOWED UNTIL ALL BRANDING IS COMPLETE.
- 3.13 ELECTRICAL WIRE
- E. LOW VOLTAGE WIRING:
    1. BURY CONTROL WIRING IN SAME TRENCH AS PRESSURE SUPPLY LINE AS SPECIFIED.
    2. BUNDLE ALL 24 VOLT WIRES AT 20' INTERVALS WITH ELECTRICAL TAPE.
    3. PROVIDE EXPANSION LOOPS AT EVERY PRESSURE SUPPLY LINE ANGLE FITTING, INSIDE EACH ELECTRIC REMOTE CONTROL VALVE BOX, AND AT 250' LENGTH INTERVALS ALONG ROUTING. FORM EXPANSION LOOP BY WRAPPING WIRE A MINIMUM OF 10 TIMES AROUND A 3/4" PIPE AND WITHDRAWING PIPE AS SPECIFIED ON THE DRAWINGS.
    4. LIMIT SPLICING OF ELECTRICAL WIRING. PROVIDE EACH SPlice MADE AT INTERVALS OR IN ELECTRIC CONTROL VALVE AND DRIP VALVE ASSEMBLY VALVE BOXES WITH 3M DBY DIRECT BURY SPlice KITS.
    5. WIRE SPLICES OCCURRING AT INTERVALS OUTSIDE ELECTRIC CONTROL VALVE BOXES SHALL BE INSTALLED IN A SEPARATE VALVE BOX.
    6. PROVIDE (1) ONE ELECTRICAL CONTROL WIRE FOR EVERY ELECTRIC CONTROL VALVE. PIGGY BACKING LIKE ZONES ON THE SAME ELECTRICAL CONTROL WIRE IS NOT ALLOWED.
  - F. HIGH VOLTAGE WIRING:
    1. INSTALL 120 VOLT POWER FROM POWER SOURCE TO AUTOMATIC CONTROLLER UNIT FOLLOWING LOCAL GOVERNING CODES AND ORDINANCES.
- 3.14 QUALITY CONTROL
- A. PRECONSTRUCTION MEETING: THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ARCHITECT/OWNER PRIOR TO BEGINNING CONSTRUCTION AND/OR ORDERING MATERIALS TO ESTABLISH A MEETING TO REVIEW AND DISCUSS PROJECT OBJECTIVES, CONCERNS AND TO REVIEW THE CONSTRUCTION DOCUMENTS TO INSURE A COMPLETE UNDERSTANDING OF REQUIRED INSTALLATION PROCEDURES.
  - B. GENERAL OBSERVATION: THE ARCHITECT/OWNER WILL VISIT THE CONSTRUCTION SITE AT INTERIM TIMES DURING THE CONSTRUCTION PROCESS TO ACCESS CONSTRUCTION PROGRESS REGARDING INSTALLATION OF IRRIGATION EQUIPMENT TO BE IN COMPLIANCE WITH THE DRAWINGS, DETAILS, SPECIFICATIONS AND SITE CONDITIONS. THE ARCHITECT/OWNER WILL PREPARE A SITE REPORT AFTER EACH VISIT NOTING PROGRESS OF INSTALLATION, VERBAL COMMUNICATION WITH THE CONTRACTOR AND IDENTIFYING ANY FIELD ADJUSTMENTS NECESSARY WHICH REQUIRE MODIFICATIONS TO THE DESIGNED IRRIGATION SYSTEM. A COPY OF THIS SITE REPORT WILL BE DELIVERED TO BOTH THE OWNER AND THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO IMMEDIATELY ADDRESS EACH ITEM ON THE SITE REPORT BEFORE PROCEEDING WITH FURTHER CONSTRUCTION.
  - C. PRESSURE TESTING THE PRESSURE SUPPLY LINE: AFTER BACKFILLING, FLUSHING, AND PRIOR TO THE INSTALLATION OF EACH ELECTRIC CONTROL VALVE, ISOLATION BALL VALVE AND QUICK COUPLING VALVE THE IRRIGATION SYSTEM SHALL BE PRESSURE TESTED.
    1. PRESSURE TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE ARCHITECT AND OWNER OR OWNERS REPRESENTATIVE UTILIZING THE FOLLOWING PROCEDURE:
      - a. PRESSURIZE THE IRRIGATION SYSTEM TO 40 PSI GREATER THAN THE DESIGNATED STATIC PRESSURE OR 150 PSI WHICHEVER IS GREATER FOR A PERIOD OF NO LESS THAN 4 HOURS. THE PRESSURE GAUGE USED FOR THE PRESSURE TEST SHALL NOT EXCEED READINGS GREATER THAN 300PSI. PRESSURE PUMP AND OTHER EQUIPMENT NECESSARY FOR THE TEST SHALL BE FURNISHED BY THE CONTRACTOR.
      - b. TEST IS ACCEPTABLE IF NO LEAKAGE OCCURS WITHIN THE SYSTEM FOR THE DURATION OF THE TESTING PERIOD.
      - c. IF LEAKS OCCUR, REPAIR SAID LEAKS AND BEGIN PRESSURE TEST AGAIN. REPEAT THIS OPERATION UNTIL NO LEAKS OCCUR IN THE IRRIGATION SYSTEM.
      - d. BEFORE REQUESTING A WALK THROUGH FOR SUBSTANTIAL COMPLETION, THE ENTIRE IRRIGATION SYSTEM SHALL REMAIN UNDER PRESSURE FOR A PERIOD OF NO LESS THAN 48 HOURS.

- 2. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ARCHITECT/OWNER ONE DAY IN ADVANCE OF THE PRESSURE TEST.
- D. FLUSHING: CENTER LOAD ALL PIPING PRIOR TO FLUSHING. AFTER ALL NEW IRRIGATION PIPING AND RISERS ARE IN PLACE AND CONNECTED AND ALL NECESSARY DIVERSION WORK HAS BEEN COMPLETED.
- E. WALK THROUGH FOR SUBSTANTIAL COMPLETION:
  1. BEFORE REQUESTING A WALK THROUGH FOR SUBSTANTIAL COMPLETION THE FOLLOWING REQUIREMENTS MUST BE ENTIRELY SATISFIED:
    - a. THE ENTIRE IRRIGATION SYSTEM IS COMPLETELY INSTALLED, FLUSHED AND SATISFACTORILY PRESSURE TESTED. IF THE CONTRACTOR FAILED TO NOTIFY THE ARCHITECT FOR THE PRESSURE TEST AND FLUSHING PROCEDURES STATED ABOVE THEN THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ANY DESIGN MODIFICATIONS DIRECTED BY THE ARCHITECT DURING THE WALK THROUGH FOR SUBSTANTIAL COMPLETION REGARDING PRESSURE AND FLUSHING ISSUES.
    - b. ALL VALVE BOXES HAVE BEEN BRANDED.
    - c. RECORD AS-BUILT DRAWINGS HAVE BEEN SUBMITTED TO THE ARCHITECT FOR REVIEW AS TO COMPLETENESS.
    - d. TWO (2) SERVICES MANUALS HAVE BEEN DELIVERED TO THE OWNER OR OWNERS REPRESENTATIVE.
  2. ONCE THE ABOVE REQUIREMENTS HAVE BEEN MET A WALK THROUGH FOR SUBSTANTIAL COMPLETION MAY BE REQUESTED. THE FOLLOWING PROCEDURES WILL BE USED DURING THE WALK THROUGH:
    - a. ALL VALVE BOX LIDS SHALL BE REMOVED FROM VALVE BOXES AND PLACED FACE UP ADJACENT TO THE VALVE BOX PRIOR TO BEGINNING THE WALK THROUGH.
    - b. THE WALK THROUGH WILL BE DIVIDED INTO (2) TWO SECTIONS AND PROCEED AS FOLLOWS:
      1. VISUAL WALK THROUGH: THIS WILL CONSIST OF WALKING THROUGH THE ENTIRE IRRIGATION SYSTEM AND EXAMINING ALL COMPONENTS OF THE SYSTEM WITHOUT TURNING ON ZONES. A PUNCH LIST WILL BE ESTABLISHED OF DEFICIENCIES IN THE CONSTRUCTION AND WORKMANSHIP OF THE IRRIGATION SYSTEM AS COMPARED TO THE CONSTRUCTION DRAWINGS, DETAILS, AND SPECIFICATIONS.
      2. OPERATIONAL WALK THROUGH: THIS WILL CONSIST OF WALKING THROUGH THE ENTIRE IRRIGATION SYSTEM OBSERVING IT IN OPERABLE CONDITION. A PUNCH LIST WILL BE ESTABLISHED OF DEFICIENCIES IN THE OPERATION OF THE IRRIGATION SYSTEM.
  3. ONCE THE WALK THROUGH FOR SUBSTANTIAL COMPLETION HAS BEEN COMPLETED THE ARCHITECT WILL PROVIDE A COPY OF ALL PUNCH LIST ITEMS TO THE OWNER FOR REVIEW AND DISTRIBUTION TO THE CONTRACTOR. IT IS THE CONTRACTORS RESPONSIBILITY TO REPAIR, REPLACE, AND ADJUST ALL ITEMS ON THE PUNCH LIST PRIOR TO REQUESTING A FINAL WALK THROUGH.
- F. FINAL WALK THROUGH:
  1. BEFORE COMMENCEMENT OF A FINAL WALK THROUGH IS REQUESTED, THE FOLLOWING REQUIREMENTS MUST BE ENTIRELY SATISFIED:
    - a. EACH ITEM ON THE WALK THROUGH FOR SUBSTANTIAL COMPLETION HAS BEEN THOROUGHLY ADDRESSED AND RESOLVED BY THE CONTRACTOR.
    - b. ALL FINAL RECORD AS-BUILT DRAWINGS AND CONTROLLER CHARTS HAVE BEEN PRODUCED BY THE ARCHITECT FOR REVIEW BY THE ARCHITECT AND CONTRACTOR AT THE FINAL WALK THROUGH.
  2. ONCE THE ABOVE REQUIREMENTS HAVE BEEN MET A FINAL WALK THROUGH MAY BE REQUESTED. THE FOLLOWING PROCEDURES WILL BE USED:
    - a. ONLY THOSE VALVE BOX LIDS SHALL BE REMOVED FROM VALVE BOXES AS INDICATED ON THE WALK THROUGH FOR SUBSTANTIAL COMPLETION PUNCH LIST. THE VALVE BOX LIDS SHALL BE PLACED FACED UP ADJACENT TO THE VALVE BOX PRIOR TO BEGINNING THE FINAL WALK THROUGH.
    - b. THE FINAL WALK THROUGH WILL BE DIVIDED INTO (2) TWO SECTIONS AND PROCEED AS FOLLOWS:
      1. VISUAL WALK THROUGH: THIS WILL CONSIST OF WALKING THROUGH THE PUNCH LIST ITEMS CREATED AT THE TIME OF THE WALK THROUGH FOR SUBSTANTIAL COMPLETION, EXAMINING ALL COMPONENTS OF THE SYSTEM WITHOUT TURNING ON ZONES. ANY REMAINING DEFICIENCIES IN THE CONSTRUCTION AND WORKMANSHIP OF THE IRRIGATION SYSTEM AS COMPARED TO THE PUNCH LIST GENERATED AT THE TIME OF THE WALK THROUGH FOR SUBSTANTIAL COMPLETION, CONSTRUCTION DRAWINGS, DETAILS AND SPECIFICATIONS WILL BE NOTED.
      2. OPERATIONAL WALK THROUGH: THIS WILL CONSIST OF WALKING THROUGH THE PUNCH LIST ITEMS CREATED AT THE TIME OF THE WALK THROUGH FOR SUBSTANTIAL COMPLETION AND OBSERVING THE SYSTEM IN A FULLY OPERABLE CONDITION.
    - 3. ONCE THE FINAL WALK THROUGH IS COMPLETED AND ALL ITEMS CREATED ON THE FINAL PUNCH LIST HAVE BEEN ADDRESSED THE MAINTENANCE PERIOD MAY BEGIN. ANY ADDITIONAL WALK THROUGHS REQUIRED DUE TO CONTRACTORS INABILITY TO ADDRESS ALL ISSUES ON THE PUNCH LISTS DESCRIBED ABOVE WILL BE PROVIDED AT THE CONTRACTORS EXPENSE.

END OF SECTION 328400



Registered Landscape Architect  
Lic. No. 3791 Exp. 11-30-2017

PROJECT NUMBER: 16-666

AUTOCADD FILE:  
P:\#6658 Trilogy HOA\CDS\TRIOLOGY\_PRR

DATE: APRIL 21, 2016

DRAWN BY: BJA

CHECKED BY: YH

PROJECT TITLE:

TRIOLOGY HOA  
RECYCLED WATER  
CONVERSION PLAN

SHEET TITLE:

RECYCLED WATER  
CONVERSION  
IRRIGATION SPECS

REVISION:

ISSUED FOR:

SHEET:

ID-07

SHEET: 13 OF 13 SHEETS

**BID SET  
NOT FOR CONSTRUCTION**



DIAL TOLL FREE  
1-800-422-4133  
AT LEAST TWO DAYS  
BEFORE YOU DIG

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA



# PROJECTED IRRIGATION DEMAND

## Trilogy at Glen Ivy Point of Connection A Maintained by Trilogy HOA

AS OF 1-13-16

MONTH	* Hist Eto	** Turf	Plant Factors					Et Adjust Factor	Projected	Projected	Projected	Projected
			*** Rotor Irrigated	*** Spray Irrigated	*** Drip Irrigated	*** Bubbler Irrigated	*** Other		Water Use In Gallons Based On Eto	Water Use In HCF Based On Eto	Water Use In Acre Feet Based On Eto	Water Use In GPM Based on Eto
Jan	2.49	0.61	0.31	0.31	0.31	0.31	0.31	1	174899	233.82	0.54	19
Feb	2.91	0.64	0.32	0.32	0.32	0.32	0.32	1	214452	286.70	0.66	23
Mar	4.16	0.75	0.38	0.38	0.38	0.38	0.38	1	359262	480.30	1.10	38
Apr	5.27	1.04	0.50	0.50	0.50	0.50	0.50	1	606831	811.27	1.86	65
May	5.94	0.95	0.48	0.48	0.48	0.48	0.48	1	649781	868.69	1.99	69
June	6.56	0.88	0.44	0.44	0.44	0.44	0.44	1	664728	888.67	2.04	71
July	7.22	0.94	0.47	0.47	0.47	0.47	0.47	1	781488	1044.77	2.40	84
Aug	6.92	0.86	0.43	0.43	0.43	0.43	0.43	1	685270	916.14	2.10	73
Sept	5.35	0.74	0.37	0.37	0.37	0.37	0.37	1	455872	609.45	1.40	49
Oct	4.05	0.75	0.38	0.38	0.38	0.38	0.38	1	349763	467.60	1.07	37
Nov	2.94	0.69	0.35	0.35	0.35	0.35	0.35	1	233590	312.29	0.72	25
Dec	2.56	0.60	0.30	0.30	0.30	0.30	0.30	1	176868	236.45	0.54	19
Annual	56.37	9.45	4.71	4.71	4.71	4.71	4.71	1	5352802	<b>7156.15</b>	16.43	554

### ESTIMATED IRRIGATED LANDSCAPED AREA:

Turf Grass (Spray Irrigated):	0	square feet
Rotor Irrigated:	9590	square feet
Spray Irrigated:	4747	square feet
Drip Irrigated:	0	square feet
Bubbler Irrigated:	0	square feet
Other:	264008	square feet
<b>TOTAL LANDSCAPE:</b>	<b>278345</b>	<b>square feet</b>
	<b>6.39</b>	<b>acres</b>

### GENERAL PLANT MATERIALS

N/A
Rosmarinus, Pittosporum, Myoporum, Dietes
Rosmarinus, Pittosporum, Myoporum, Dietes
N/A
N/A
Avocado Trees

### ESTIMATED IRRIGATION EFFICIENCY

0.60
0.75
0.60
0.90
0.85
0.90

\* Reference Eto data obtained from CIMIS weather station 44 and Standards Booklet Exhibit 5, 2000.

\*\* Plant Factor for turf obtained from University of California Cooperative Extension Article "California Turfgrass Culture", Volume 39 Numbers 2 & 3, 1990.

\*\*\* Plant Factor for Shrubs and Ornamental grasses obtained from Estimating Irrigation Water Needs of Landscape Plantings in California, University of California Cooperative Extension, August 2000

Note: Projected water use is based on a 6 hour a day, 6 day a week water window.

# PROJECTED IRRIGATION DEMAND

## Trilogy at Glen Ivy Point of Connection B Maintained by Trilogy HOA

AS OF 1-13-16

MONTH	* Hist Eto	** Turf	Plant Factors					Et Adjust Factor	Projected	Projected	Projected	Projected
			*** Rotor Irrigated	*** Spray Irrigated	*** Drip Irrigated	*** Bubbler Irrigated	*** Other		Water Use In Gallons Based On Eto	Water Use In HCF Based On Eto	Water Use In Acre Feet Based On Eto	Water Use In GPM Based on Eto
Jan	2.49	0.61	0.31	0.31	0.12	0.31	0.31	1	176223	235.59	0.54	19
Feb	2.91	0.64	0.32	0.32	0.13	0.32	0.32	1	216076	288.87	0.66	23
Mar	4.16	0.75	0.38	0.38	0.15	0.38	0.38	1	361983	483.94	1.11	39
Apr	5.27	1.04	0.50	0.50	0.20	0.50	0.50	1	616086	823.64	1.89	66
May	5.94	0.95	0.48	0.48	0.19	0.48	0.48	1	654703	875.27	2.01	70
June	6.56	0.88	0.44	0.44	0.18	0.44	0.44	1	669762	895.40	2.06	72
July	7.22	0.94	0.47	0.47	0.19	0.47	0.47	1	787407	1052.68	2.42	84
Aug	6.92	0.86	0.43	0.43	0.17	0.43	0.43	1	690460	923.08	2.12	74
Sept	5.35	0.74	0.37	0.37	0.15	0.37	0.37	1	459325	614.07	1.41	49
Oct	4.05	0.75	0.38	0.38	0.15	0.38	0.38	1	352412	471.14	1.08	38
Nov	2.94	0.69	0.35	0.35	0.14	0.35	0.35	1	235359	314.65	0.72	25
Dec	2.56	0.60	0.30	0.30	0.12	0.12	0.30	1	178207	238.24	0.55	19
Annual	56.37	9.45	4.71	4.71	1.88	4.53	4.71	1	5398003	<b>7216.58</b>	16.57	558

ESTIMATED IRRIGATED LANDSCAPED AREA:

Turf Grass (Spray Irrigated):	18082	square feet
Rotor Irrigated:	0	square feet
Spray Irrigated:	11848	square feet
Drip Irrigated:	5258	square feet
Bubbler Irrigated:	0	square feet
Other:	210656	square feet
<b>TOTAL LANDSCAPE:</b>	<b>245844</b>	<b>square feet</b>
	<b>5.64</b>	<b>acres</b>

GENERAL PLANT MATERIALS

N/A
N/A
Rosmarinus, Pittosporum, Myoporum, Dietes
Rosmarinus
N/A
Avocado Trees

ESTIMATED IRRIGATION EFFICIENCY

0.60
0.75
0.60
0.90
0.85
0.90

Note: Projected water use is based on a 6 hour a day, 6 day a week water window.

\* Reference Eto data obtained from CIMIS weather station 44 and Standards Booklet Exhibit 5, 2000.

\*\* Plant Factor for turf obtained from University of California Cooperative Extension Article "California Turfgrass Culture", Volume 39 Numbers 2 & 3, 1990.

\*\*\* Plant Factor for Shrubs and Ornamental grasses obtained from Estimating Irrigation Water Needs of Landscape Plantings in California, University of California Cooperative Extension, August 2000

# PROJECTED IRRIGATION DEMAND

## Trilogy at Glen Ivy Point of Connection C Maintained by Trilogy HOA

AS OF 1-13-16

MONTH	Plant Factors								Et Adjust Factor	Projected	Projected	Projected	Projected
	* Hist Eto	** Turf	*** Rotor Irrigated	*** Spray Irrigated	*** Drip Irrigated	*** Bubbler Irrigated	*** Other	Water Use In Gallons Based On Eto		Water Use In HCF Based On Eto	Water Use In Acre Feet Based On Eto	Water Use In GPM Based on Eto	
Jan	2.49	0.61	0.12	0.31	0.12	0.31	0.31	1	240795	321.92	0.74	26	
Feb	2.91	0.64	0.13	0.32	0.13	0.32	0.32	1	295251	394.72	0.91	32	
Mar	4.16	0.75	0.15	0.38	0.15	0.38	0.38	1	494621	661.26	1.52	53	
Apr	5.27	1.04	0.20	0.50	0.20	0.50	0.50	1	835466	1116.93	2.56	89	
May	5.94	0.95	0.19	0.48	0.19	0.48	0.48	1	894598	1195.99	2.75	96	
June	6.56	0.88	0.18	0.44	0.18	0.44	0.44	1	915176	1223.50	2.81	98	
July	7.22	0.94	0.19	0.47	0.19	0.47	0.47	1	1075928	1438.41	3.30	115	
Aug	6.92	0.86	0.17	0.43	0.17	0.43	0.43	1	943458	1261.31	2.90	101	
Sept	5.35	0.74	0.15	0.37	0.15	0.37	0.37	1	627630	839.08	1.93	67	
Oct	4.05	0.75	0.15	0.38	0.15	0.38	0.38	1	481542	643.77	1.48	51	
Nov	2.94	0.69	0.14	0.35	0.14	0.35	0.35	1	321599	429.94	0.99	34	
Dec	2.56	0.60	0.12	0.30	0.12	0.12	0.30	1	243506	325.54	0.75	26	
Annual	56.37	9.45	1.88	4.71	1.88	4.53	4.71	1	7369569	<b>9852.37</b>	22.62	762	

### ESTIMATED IRRIGATED LANDSCAPED AREA:

Turf Grass (Spray Irrigated):	0	square feet
Rotor Irrigated:	88485	square feet
Spray Irrigated:	11448	square feet
Drip Irrigated:	56363	square feet
Bubbler Irrigated:	0	square feet
Other:	306935	square feet
<b>TOTAL LANDSCAPE:</b>	<b>463231</b>	<b>square feet</b>
	<b>10.63</b>	<b>acres</b>

### GENERAL PLANT MATERIALS

N/A
Native Area
Rosmarinus, Pittosporum, Myoporum, Dietes
Trees
N/A
Avocado Trees

### ESTIMATED IRRIGATION EFFICIENCY

0.60
0.75
0.60
0.90
0.85
0.90

\* Reference Eto data obtained from CIMIS weather station 44 and Standards Booklet Exhibit 5, 2000.

\*\* Plant Factor for turf obtained from University of California Cooperative Extension Article "California Turfgrass Culture", Volume 39 Numbers 2 & 3, 1990.

\*\*\* Plant Factor for Shrubs and Ornamental grasses obtained from Estimating Irrigation Water Needs of Landscape Plantings in California, University of California Cooperative Extension, August 2000

Note: Projected water use is based on a 6 hour a day, 6 day a week water window.

**Trilogy - Recycled Water Conversion Project**

***Bid Summary as of 8/15/17***

**Lowest to  
Highest Bid Submittal  
Overall\* Order Bidder Contact Name Meter A Meter B Meter C Total**

Overall*	Order	Bidder	Contact Name	Meter A	Meter B	Meter C	Total
1	2	BrightView	Jonathan Caceres	\$ 59,024.09	\$ 152,851.39	\$ 183,563.73	\$ 395,439.21
2	3	O'Connell	Jon Louis	\$ 58,950.00	\$ 212,475.00	\$ 216,200.00	\$ 487,625.00
3	1	Aramexx	Abe Benitez	\$ 111,080.00	\$ 206,645.00	\$ 195,142.00	\$ 512,867.00

Indicates Lowest Bid By Section

\* Lowest to highest bid overall is based on the sum of section A through section C on the bid form.

REVISED AS OF 07-06-17

Indicates Bid Item Revision 7-6-17

**PROPOSAL**

**TVWD Meter 'A'**

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	9,122.00	9,122.00
2	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	350	13.79	4,826.50
3	2" Master Meter & Fittings per Detail 2	EA	1	3,245.00	3,245.00
4	Yardney 1816-2 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 3	EA	1	12,230.20	12,230.20
5	Wilkins 500 HLR Pressure Reducing Valve & Fittings per Detail 6	EA	1	1,285.00	1,285.00
6	1" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	1,015.31	1,015.31
7	2" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	1,297.91	1,297.91
8	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	1,229.51	1,229.51
9	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	1,591.31	1,591.31
10	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	1	734.20	734.20
11	Connection to Existing Potable Pressure Supply Line & Fittings	EA	1	212.00	212.00
12	Misc. Fittings / Joint Restraints	LS	1	2,340.00	2,340.00
13	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	8,500.40	8,500.40
14	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	1	212.00	212.00
15	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 25)	LS	1	2,982.14	2,982.14
16	Valve Box Lid Tag w/ Purple (Approximately 100)	LS	1	568.65	568.65
17	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 100)	LS	1	739.68	739.68
18	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	192.32	192.32
19	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	83.81	83.81
20	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	41.88	41.88
21	6" Concrete Header per Detail A	LS	1	5,623.27	5,623.27
22	Recycled Water Signage per Detail B	LS	1	951.00	951.00

SUBTOTAL: Fifty nine thousand twenty four dollars and nine cents \$ 59,024.09

ITEMS 1-22 "WORDS"

**TVWD Meter 'B'**

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
23	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	9,122.00	9,122.00
24	2" Master Meter & Fittings per Detail 2	EA	1	3,445.00	3,445.00
25	Yardney 1816-2 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 3	EA	1	12,426.40	12,426.40
26	Barrett Booster Pump Assembly, Concrete Pad, Fittings and All Conduit / Electrical Components per Detail 5	EA	1	43,443.60	43,443.60
27	1" Griswold 2250 E Master Valve, Conduit, Wiring, Pull Box & Fittings Per Detail 7 & 21	EA	1	1,401.95	1,401.95
28	2" Griswold 2250 E Master Valve, Conduit, Wiring, Pull Box & Fittings Per Detail 7 & 21	EA	1	1,684.55	1,684.55
29	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring, Pull Box & Fittings Per Detail 8 & 21	EA	1	1,616.15	1,616.15
30	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring, Pull Box & Fittings Per Detail 8 & 21	EA	1	1,977.95	1,977.95
31	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	3	734.20	2,202.60
32	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	2,075	5.72	11,869.00
33	Stabized Decomposed Granite Trail Removal / Replacement	LF	1,800	6.11	10,998.00
34	2" Leemco LMV Gate Valve & Fittings per Detail 9	EA	1	692.80	692.80
35	2.5" PVC CL 200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	EA	200	5.48	1,096.00
36	2" Val-Matic Air / Vacuum Relief Valve & Fittings per Detail 11	EA	1	988.00	988.00
37	Connection to Existing Potable Pressure Supply Line & Fittings	EA	2	212.00	424.00
38	Misc. Fittings / Joint Restraints	LS	1	2,250.00	2,250.00
39	Street Crossing / Sleeving @ Larkspur Court (Saw Cut and Patch) Per Detail 12 & 19	EA	1	12,344.00	12,344.00
40	Street Crossing / Sleeving @ Augusta Drive (Saw Cut and Patch) Per Detail 12 & 19	EA	1	5,560.00	5,560.00
41	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	8,500.40	8,500.40
42	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	2	177.00	354.00
43	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 75)	LS	1	8,946.43	8,946.43
44	Valve Box Lid Tag w/ Purple (Approximately 250)	LS	1	1,421.63	1,421.63
45	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 250)	LS	1	1,849.20	1,849.20
46	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	525.65	525.65
47	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	83.81	83.81
48	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	41.88	41.88
49	6" Concrete Header per Detail A	LS	1	6,478.99	6,478.99
50	Recycled Water Signage per Detail B	LS	1	1,107.40	1,107.40

SUBTOTAL: \_\_\_\_\_ One hundred fifty two thousand eight hundred fifty one dollars and thirty nine cents \_\_\_\_\_ \$ 152,851.39

ITEMS 23-50 "WORDS"

## TVWD Meter 'C'

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
51	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	9,122.00	9,122.00
52	2" Master Meter & Fittings per Detail 2	EA	1	3,245.00	3,245.00
53	Yardney 1816-3 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 4	EA	1	18,449.40	18,449.40
54	Barrett Booster Pump Assembly, Concrete Pad, Fittings and All Conduit / Electrical Components per Detail 5	EA	1	52,284.36	52,284.36
55	Wilkins 500 HLR Pressure Reducing Valve & Fittings per Detail 6	EA	2	1,285.00	2,570.00
56	1" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	1,930.00	1,930.00
57	2" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	2,212.60	2,212.60
58	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	2,142.40	2,142.40
59	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	2,506.00	2,506.00
60	2.5" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	3	692.80	2,078.40
61	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	1	734.20	734.20
62	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	1,050	11.04	11,592.00
63	2.5" PVC CL 200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	1,150	10.29	11,833.50
64	2" PVC SCH 40 Purple Pipe - Glued & Fittings per Details 12 - 14	LF	1,850	9.61	17,778.50
65	2" Nibco T-113-K Gate Valve with Cross Handle & Fittings Per Detail 10	EA	3	321.57	964.71
66	2" Val-Matic Air / Vacuum Relief Valve & Fittings per Detail 11	EA	2	988.00	1,976.00
67	Stabized Decomposed Granite Trail Removal / Replacement	LF	1,200	7.67	9,204.00
68	Connection to Existing Potable Pressure Supply Line or HOA Sub Meter & Fittings	EA	6	212.00	1,272.00
69	Cut, Cap and 10' Separation of Existing Potable Pressure Supply Line	EA	2	247.00	494.00
70	Misc. Fittings / Joint Restraints	LS	1	4,680.00	4,680.00
71	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	8,500.40	8,500.40
72	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	1	212.00	212.00
73	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 50)	LS	1	5,964.29	5,964.29
74	Valve Box Lid Tag w/ Purple (Approximately 200)	LS	1	1,137.30	1,137.30
75	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 200)	LS	1	1,479.36	1,479.36
76	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	525.65	525.65
77	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	83.81	83.81
78	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	41.88	41.88
79	6" Concrete Header per Detail A	LS	1	6,967.97	6,967.97
80	Recycled Water Signage per Detail B	LS	1	1,582.00	1,582.00

SUBTOTAL: One hundred eighty three thousand five hundred sixty three dollars and seventy three cents \$ 183,563.73  
 ITEMS 51-80 "WORDS"

REVISED AS OF 07-06-17

Indicates Bid Item Revision 7-6-17

**PROPOSAL**

TVWD Meter 'A'

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	3,000.00	3,000.00
2	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	350	15.00	5,250.00
3	2" Master Meter & Fittings per Detail 2	EA	1	2,500.00	2,500.00
4	Yardney 1816-2 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 3	EA	1	9,000.00	9,000.00
5	Wilkins 500 HLR Pressure Reducing Valve & Fittings per Detail 6	EA	1	1,000.00	1,000.00
6	1" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	350.00	350.00
7	2" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	400.00	400.00
8	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	700.00	700.00
9	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	1,000.00	1,000.00
10	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	1	1,500.00	1,500.00
11	Connection to Existing Potable Pressure Supply Line & Fittings	EA	1	2,000.00	2,000.00
12	Misc. Fittings / Joint Restraints	LS	1	3,000.00	3,000.00
13	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	3,000.00	3,000.00
14	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	1	3,000.00	3,000.00
15	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 25)	LS	1	5,000.00	5,000.00
16	Valve Box Lid Tag w/ Purple (Approximately 100)	LS	1	2,500.00	2,500.00
17	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 100)	LS	1	2,500.00	2,500.00
18	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	3,750.00	3,750.00
19	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	3,750.00	3,750.00
20	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	3,750.00	3,750.00
21	6" Concrete Header per Detail A	LS	1	1,000.00	1,000.00
22	Recycled Water Signage per Detail B	LS	1	1,000.00	1,000.00

SUBTOTAL: Fifty Eight Thousand Nine Hundred Fifty Dollars and Zero Cents

\$58,950.00

ITEMS 1-22

"WORDS"



TVWD Meter 'B'

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
23	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	3,000.00	3,000.00
24	2" Master Meter & Fittings per Detail 2	EA	1	2,500.00	2,500.00
25	Yardney 1816-2 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 3	EA	1	9,000.00	9,000.00
26	Barrett Booster Pump Assembly, Concrete Pad, Fittings and All Conduit / Electrical Components per Detail 5	EA	1	32,000.00	32,000.00
27	1" Griswold 2250 E Master Valve, Conduit, Wiring, Pull Box & Fittings Per Detail 7 & 21	EA	1	350.00	350.00
28	2" Griswold 2250 E Master Valve, Conduit, Wiring, Pull Box & Fittings Per Detail 7 & 21	EA	1	400.00	400.00
29	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring, Pull Box & Fittings Per Detail 8 & 21	EA	1	700.00	700.00
30	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring, Pull Box & Fittings Per Detail 8 & 21	EA	1	1,000.00	1,000.00
31	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	3	1,500.00	4,500.00
32	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	2,075	15.00	31,125.00
33	Stabized Decomposed Granite Trail Removal / Replacement	LF	1,800	12.50	22,500.00
34	2" Leemco LMV Gate Valve & Fittings per Detail 9	EA	1	1,000.00	1,000.00
35	2.5" PVC CL 200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	EA	200	10.00	2,000.00
36	2" Val-Matic Air / Vacuum Relief Valve & Fittings per Detail 11	EA	1	1,000.00	1,000.00
37	Connection to Existing Potable Pressure Supply Line & Fittings	EA	2	1,500.00	3,000.00
38	Misc. Fittings / Joint Restraints	LS	1	5,000.00	5,000.00
39	Street Crossing / Sleeving @ Larkspur Court (Saw Cut and Patch) Per Detail 12 & 19	EA	1	10,000.00	10,000.00
40	Street Crossing / Sleeving @ Augusta Drive (Saw Cut and Patch) Per Detail 12 & 19	EA	1	10,000.00	10,000.00
41	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	3,000.00	3,000.00
42	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	2	3,000.00	6,000.00
43	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 75)	LS	1	15,000.00	15,000.00
44	Valve Box Lid Tag w/ Purple (Approximately 250)	LS	1	6,250.00	6,250.00
45	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 250)	LS	1	6,250.00	6,250.00
46	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	12,500.00	12,500.00
47	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	12,500.00	12,500.00
48	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	12,500.00	12,500.00
49	6" Concrete Header per Detail A	LS	1	1,000.00	1,000.00
50	Recycled Water Signage per Detail B	LS	1	1,400.00	1,400.00

SUBTOTAL: Two Hundred Twelve Thousand Four Hundred Seventy Five Dollars and Zero Cents \$212,475.00

ITEMS 23-50 "WORDS"

## TVWD Meter 'C'

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
51	8" x 4" Mueller Tapping Sleeve & 4" Resilient Wedge Tapping Valve & Fittings per Detail 1	EA	1	3,000.00	3,000.00
52	2" Master Meter & Fittings per Detail 2	EA	1	2,500.00	2,500.00
53	Yardney 1816-3 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 4	EA	1	11,000.00	11,000.00
54	Barrett Booster Pump Assembly, Concrete Pad, Fittings and All Conduit / Electrical Components per Detail 5	EA	1	38,000.00	38,000.00
55	Wilkins 500 HLR Pressure Reducing Valve & Fittings per Detail 6	EA	2	1,000.00	2,000.00
56	1" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	350.00	350.00
57	2" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	400.00	400.00
58	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	700.00	700.00
59	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	1,000.00	1,000.00
60	2.5" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	3	1,000.00	3,000.00
61	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	1	1,000.00	1,000.00
62	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	1,050	15.00	15,750.00
63	2.5" PVC CL 200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	1,150	12.00	13,800.00
64	2" PVC SCH 40 Purple Pipe - Glued & Fittings per Details 12 - 14	LF	1,850	12.00	22,200.00
65	2" Nibco T-113-K Gate Valve with Cross Handle & Fittings Per Detail 10	EA	3	500.00	1,500.00
66	2" Val-Matic Air / Vacuum Relief Valve & Fittings per Detail 11	EA	2	1,000.00	2,000.00
67	Stabized Decomposed Granite Trail Removal / Replacement	LF	1,200	12.50	15,000.00
68	Connection to Existing Potable Pressure Supply Line or HOA Sub Meter & Fittings	EA	6	2,000.00	12,000.00
69	Cut, Cap and 10' Separation of Existing Potable Pressure Supply Line	EA	2	2,000.00	4,000.00
70	Misc. Fittings / Joint Restraints	LS	1	8,000.00	8,000.00
71	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	3,000.00	3,000.00
72	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	1	3,000.00	3,000.00
73	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 50)	LS	1	10,000.00	10,000.00
74	Valve Box Lid Tag w/ Purple (Approximately 200)	LS	1	5,000.00	5,000.00
75	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 200)	LS	1	5,000.00	5,000.00
76	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	10,000.00	10,000.00
77	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	10,000.00	10,000.00
78	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	10,000.00	10,000.00
79	6" Concrete Header per Detail A	LS	1	1,000.00	1,000.00
80	Recycled Water Signage per Detail B	LS	1	2,000.00	2,000.00

SUBTOTAL: Two Hundred Sixteen Thousand Two Hundred Dollars and Zero Cents \$216,200.00  
 ITEMS 51-80 "WORDS"

REVISED AS OF 07-06-17

Indicates Bid Item Revision 7-6-17

**PROPOSAL**

**TVWD Meter 'A'**

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	5,280.00	5,280.00
2	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	350	20.00	7,000.00
3	2" Master Meter & Fittings per Detail 2	EA	1	2,180.00	2,180.00
4	Yardney 1816-2 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 3	EA	1	13,340.00	13,340.00
5	Wilkins 500 HLR Pressure Reducing Valve & Fittings per Detail 6	EA	1	2,580.00	2,580.00
6	1" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	2,230.00	2,230.00
7	2" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	2,410.00	2,410.00
8	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	2,190.00	2,190.00
9	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	2,490.00	2,490.00
10	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	1	850.00	850.00
11	Connection to Existing Potable Pressure Supply Line & Fittings	EA	1	2,640.00	2,640.00
12	Misc. Fittings / Joint Restraints	LS	1	3,800.00	3,800.00
13	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	9,830.00	9,830.00
14	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	1	4,760.00	4,760.00
15	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 25)	LS	1	4,200.00	4,200.00
16	Valve Box Lid Tag w/ Purple (Approximately 100)	LS	1	1,800.00	1,800.00
17	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 100)	LS	1	1,600.00	1,600.00
18	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	4,000.00	4,000.00
19	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	570.00	570.00
20	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	3,200.00	3,200.00
21	6" Concrete Header per Detail A	LS	1	27,190.00	27,190.00
22	Recycled Water Signage per Detail B	LS	1	6,940.00	6,940.00

SUBTOTAL: One Hundred Eleven thousand and eighty dollars zero cents \$ 111,080.00

ITEMS 1-22 "WORDS"

TVWD Meter 'B'

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
23	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	5,500.00	5,500.00
24	2" Master Meter & Fittings per Detail 2	EA	1	2,000.00	2,000.00
25	Yardney 1816-2 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 3	EA	1	13,000.00	13,000.00
26	Barrett Booster Pump Assembly, Concrete Pad, Fittings and All Conduit / Electrical Components per Detail 5	EA	1	45,000.00	45,000.00
27	1" Griswold 2250 E Master Valve, Conduit, Wiring, Pull Box & Fittings Per Detail 7 & 21	EA	1	6,000.00	6,000.00
28	2" Griswold 2250 E Master Valve, Conduit, Wiring, Pull Box & Fittings Per Detail 7 & 21	EA	1	2,070.00	2,070.00
29	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring, Pull Box & Fittings Per Detail 8 & 21	EA	1	2,000.00	2,000.00
30	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring, Pull Box & Fittings Per Detail 8 & 21	EA	1	2,200.00	2,200.00
31	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	3	530.00	1,590.00
32	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	2,075	5.00	10,375.00
33	Stabized Decomposed Granite Trail Removal / Replacement	LF	1,800	2.00	36,000.00
34	2" Leemco LMV Gate Valve & Fittings per Detail 9	EA	1	350.00	350.00
35	2.5" PVC CL 200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	EA	200	10.00	2,000.00
36	2" Val-Matic Air / Vacuum Relief Valve & Fittings per Detail 11	EA	1	810.00	810.00
37	Connection to Existing Potable Pressure Supply Line & Fittings	EA	2	5,620.00	11,240.00
38	Misc. Fittings / Joint Restraints	LS	1	3,760.00	3,760.00
39	Street Crossing / Sleeving @ Larkspur Court (Saw Cut and Patch) Per Detail 12 & 19	EA	1	12,000.00	12,000.00
40	Street Crossing / Sleeving @ Augusta Drive (Saw Cut and Patch) Per Detail 12 & 19	EA	1	13,000.00	13,000.00
41	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	9,000.00	9,000.00
42	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	2	3,950.00	7,900.00
43	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 75)	LS	1	11,000.00	11,000.00
44	Valve Box Lid Tag w/ Purple (Approximately 250)	LS	1	4,000.00	4,000.00
45	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 250)	LS	1	3,500.00	3,500.00
46	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	500.00	500.00
47	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	570.00	570.00
48	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	3,200.00	3,200.00
49	6" Concrete Header per Detail A	LS	1	27,030.00	27,030.00
50	Recycled Water Signage per Detail B	LS	1	3,450.00	3,450.00

SUBTOTAL: Two Hundred six thousand six hundred and forty five dollars and zero cents \$ 206,645.00

ITEMS 23-50

"WORDS"

TVWD Meter 'C'

ITEM No.	ITEM	UNIT	ESTIMATED QUANTITY	ITEM PRICE (IN FIGURES)	TOTAL (IN FIGURES)
51	8" x 4" Mueller Tapping Sleeve & 4" Resilent Wedge Tapping Valve & Fittings per Detail 1	EA	1	5,500.00	5,500.00
52	2" Master Meter & Fittings per Detail 2	EA	1	2,000.00	2,000.00
53	Yardney 1816-3 Sand Media Filter, Fittings, Backwash Piping and Concrete Pad per Detail 4	EA	1	15,000.00	15,000.00
54	Barrett Booster Pump Assembly, Concrete Pad, Fittings and All Conduit / Electrical Components per Detail 5	EA	1	44,000.00	44,000.00
55	Wilkins 500 HLR Pressure Reducing Valve & Fittings per Detail 6	EA	2	2,496.00	4,992.00
56	1" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	1,800.00	1,800.00
57	2" Griswold 2250 E Master Valve, Conduit, Wiring & Fittings Per Detail 7	EA	1	2,400.00	2,400.00
58	1" Calsense FM-1B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	2,300.00	2,300.00
59	2" Calsense FM-2B Brass Flow Sensor, Conduit, Wiring & Fittings Per Detail 8	EA	1	2,600.00	2,600.00
60	2.5" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	3	300.00	900.00
61	3" Leemco LMV Gate Valve & Fittings Per Detail 9	EA	1	500.00	500.00
62	3" PVC CL200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	1,050	8.00	8,400.00
63	2.5" PVC CL 200 Purple Pipe - Bell / Gasket & Fittings per Details 12 - 18	LF	1,150	6.00	6,900.00
64	2" PVC SCH 40 Purple Pipe - Glued & Fittings per Details 12 - 14	LF	1,850	5.00	9,250.00
65	2" Nibco T-113-K Gate Valve with Cross Handle & Fittings Per Detail 10	EA	3	364.00	1,092.00
66	2" Val-Matic Air / Vacuum Relief Valve & Fittings per Detail 11	EA	2	794.00	1,588.00
67	Stabized Decomposed Granite Trail Removal / Replacement	LF	1,200	2.00	2,400.00
68	Connection to Existing Potable Pressure Supply Line or HOA Sub Meter & Fittings	EA	6	3,800.00	22,800.00
69	Cut, Cap and 10' Separation of Existing Potable Pressure Supply Line	EA	2	26.00	52.00
70	Misc. Fittings / Joint Restraints	LS	1	828.00	828.00
71	Calsense 8 Station CS3000 Controller, Enclosure, Quick Pad and Elec. Connection Per Detail 20	EA	1	9,500.00	9,500.00
72	Blind Flange Existing Potable Connection (Remove Meter and Provide to TVWD, Remove Backflow)	EA	1	3,000.00	3,000.00
73	Quick Coupler Replacement (ALL) with Signature 7645 Acme (Assume total of 50)	LS	1	7,500.00	7,500.00
74	Valve Box Lid Tag w/ Purple (Approximately 200)	LS	1	3,000.00	3,000.00
75	Valve Tags w/ Purple (All existing electric control valves, gate valves and equipment) (Approximately 200)	LS	1	3,000.00	3,000.00
76	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Spray Heads	LS	1	500.00	500.00
77	Addition of Purple Stickers to all Spray Heads & Rotors on Riser	LS	1	570.00	570.00
78	Addition of Purple "Tag" (Paint) to all Exposed Pop-Up Rotors	LS	1	3,200.00	3,200.00
79	6" Concrete Header per Detail A	LS	1	27,030.00	27,030.00
80	Recycled Water Signage per Detail B	LS	1	2,540.00	2,540.00

SUBTOTAL: One hundred and ninety five thousand nine hundred and four two dollars and zero cents \$ 195,142.00  
 ITEMS 51-80 "WORDS"

# MEMORANDUM

DATE: November 16, 2017

TO: Board of Directors  
Temescal Valley Water District

FROM: General Manager

SUBJECT: CEQA Required Environmental Review for Water Reclamation Facility Expansion

## **BACKGROUND**

The District is required to complete the Environment Review process for the Water Reclamation Expansion Project. We believe that a CEQA Checklist will result in the preparation of a Mitigated Negative Declaration (MND). This process must be completed prior to construction and will also be used during our RWQCB Permit renewal. Please see the attached proposal from Dudek for preparation of the MND.

## **FISCAL IMPACT**


Not to Exceed \$40,0000 out of Sewer Infrastructure Fund  
Final cost reduced by Terramor CFD funding

## **RECOMMENDATION**

It is recommended that the Board of Directors:

1. Discuss and authorize execution of the Proposal.

Respectfully submitted,



Jeff Pape  
General Manager

## MEMORANDUM

**To:** Jeff Pape  
**From:** Wendy Worthey  
**Subject:** CEQA Services for the Temescal Valley Water Reclamation Facility Expansion  
**Date:** October 31, 2017  
**cc:** Spencer Hardy  
**Attachment(s):** NA; Cost Estimate Spreadsheet (available on request)

Dudek understands that the Temescal Valley Water Reclamation Facility (TVWRF) presently produces and discharges tertiary-treated wastewater primarily to recycled water customers. The current TVWRF design capacity is 1.575 million gallons per day (mgd) of tertiary treatment, and the facility is currently treating an average flow of 1.0 mgd (approximately 64% of capacity). Dudek understands that development within the TVWRF service area is driving the need to expand the facility to 2.25 mgd. The existing facility site is already disturbed and primarily developed. However, expansion of the facility is a discretionary action, and requires additional permitting and an assessment of any potential environmental impacts pursuant to the California Environmental Quality Act (CEQA).

Based upon our review of the National Pollution Discharge Elimination System Permit Renewal Application for the TVWRF dated June 29, 2017, Dudek is providing this scope and cost estimate to assist the Temescal Valley Water District (TVWD) with CEQA compliance. For the purposes of this scope and cost estimate, it is assumed that an Initial Study (IS)/Mitigated Negative Declaration (MND) would be the appropriate document to analyze any potential impacts associated with expanding the capacity of the TVWRF from 1.575 mgd to 2.25 mgd.

## Scope of Work

Our scope of work is comprised of three major tasks: (1) project initiation and management, (2) technical studies, where applicable, and (3) IS/MND document and process.

### Task 1 Project Initiation and Management

Project initiation will begin with a brief kickoff meeting between Dudek and TVWD project staff. The purpose of the kickoff meeting will be to finalize the project description, schedule, and review communication procedures. The kickoff meeting will also be used to verify the technical reports being prepared by Dudek as well as discuss any outstanding information needed from TVWD in order to prepare the IS/MND document. It is assumed that one kickoff meeting will be held immediately upon contract approval.

As part of Task 1, Dudek will coordinate with TVWD regarding the preferred template for the IS/MND. This task also includes email and telephone coordination, schedule updates, and action items. Based on the assumption that this project is relatively straightforward and that much of the information needed can be obtained internally through direct coordination with Jeff Pape (Dudek), this scope does not include any public hearings or additional meetings with TVWD, stakeholders, or agency staff.

## *Memorandum*

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### **Deliverables:**

- Project schedule with milestones, including updates during course of project
- Notes from kickoff meeting and other coordination efforts

## **Task 2 Technical Analysis**

Based on our review of the project, we have identified the need for an air quality assessment and a greenhouse gas emissions assessment. Also discussed briefly below is an optional task for an operational health risk assessment (HRA). No other technical studies are being proposed as part of this scope/cost estimate. However, should it be determined that additional technical studies are necessary, Dudek can provide them under a separate scope/cost estimate.

### **Task 2a Air Quality Assessment**

Dudek will prepare an assessment of the air quality impacts of the proposed project utilizing the significance thresholds in Appendix G of the CEQA Guidelines and the South Coast Air Quality Management District's (SCAQMD) emissions-based thresholds. Dudek will review all available materials, including the Permit Renewal Application for the proposed expansion project, and will work with the TVWD to identify all data needed to conduct the analysis. If precise information on a particular factor is not available, Dudek will make every effort to quantify these items using the best available information for comparable data sources.

The air quality section of the IS/MND will include a brief discussion of criteria air pollutants and the attainment status of the South Coast Air Basin. Federal, state, and local regulatory agencies responsible for air quality management will be identified and applicable federal, state, and local air quality policies, regulations, and standards will be summarized.

Dudek will estimate criteria air pollutant emissions associated with construction of the project using the California Emissions Estimator Model (CalEEMod). The analysis of short-term construction emissions will be based on scheduling information (e.g., overall construction duration, phasing and phase timing) and probable construction activities (e.g., construction equipment type and quantity, workers, and haul trucks) developed by TVWD and/or standardized approaches. Dudek will then evaluate the significance of the construction emissions based on the SCAQMD significance criteria.

Dudek will also assess the project's potential to cause or contribute to exceedances of ambient air quality standards at sensitive receptors near the proposed project activities using the SCAQMD's localized significance thresholds (LSTs). For projects with a total site area of 5 acres or less, the assessment may use a simple "lookup table" approach provided by the SCAQMD. For budgetary purposes, it is assumed that the maximum daily area of disturbance will not exceed 5 acres for each construction phase; therefore, the LST assessment will use the lookup table approach provided by the SCAQMD and the construction emission estimates from CalEEMod.<sup>1</sup>

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<sup>1</sup> The proposed project may result in a short-term increase in toxic air contaminants emissions related to construction, specifically diesel particulate matter. However, based on the short-term nature of the project, it is assumed a construction health risk assessment using a dispersion model is not required.



## *Memorandum*

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Regarding anticipated operational activities that would generate criteria air pollutant emissions, the project would include upgrades to the facility's emergency generator and potential additional worker and delivery truck trips to the site. The project would also include two new aerobic digesters and is anticipated to demand more electricity, which would generate greenhouse gas (GHG) emissions, but not criteria air pollutant emissions, as discussed under GHG, below. Per the Permit Renewal Application, the existing 350 kilowatt (kW) diesel engine generator is undersized and would be replaced with an 800 kW diesel engine generator. Dudek will estimate emissions associated with testing of the generator based on generator specifications, testing schedule, and peak load testing duration provided by TVWD, and appropriate emission factors for the generator provided in CalEEMod or other appropriate U.S. EPA, California Air Resources Board (CARB), or SCAQMD emission factors. Regarding a potential increase in mobile source emissions, Dudek assumes that the proposed expansion may require additional workers and delivery (vendor) truck trips. Emissions associated with additional trips will be estimated using CARB's mobile source emissions inventory model (EMFAC) emission factors, estimated trips provided by TVWD, and estimated average trip distance provided by TVWD or default values provided in CalEEMod. No other operational emissions sources (e.g., energy or area sources) are anticipated. Estimated maximum daily criteria air pollutant emissions will be compared to the SCAQMD operational thresholds to evaluate significance of project-generated emissions.

The proposed 800 kW diesel engine generator is a stationary source that would emit toxic air contaminants, primarily diesel particulate matter (DPM). The closest air quality sensitive land uses are residences located on approximately 800 feet west of the property line. Because sensitive land uses could be located within 1,000 feet of a source of toxic air contaminants (i.e., emergency generator), a health risk assessment is recommended. Dudek will use the SCAQMD Rule 1401 Risk Assessment Calculator as a screening tool to evaluate the potential cancer and chronic risk associated with the generator. If the diesel engine generator is estimated to exceed the SCAQMD risk thresholds using the Risk Assessment Calculator, then a refined health risk assessment using a dispersion model would be required, which is proposed as optional task AQ-1 (see below).

Dudek will evaluate whether traffic associated with the project could lead to potential exposure of sensitive receptors to substantial localized concentrations of air pollutant emissions, specifically carbon monoxide (CO) "hot spots." The qualitative assessment will be based on the anticipated traffic volumes associated with the project and applicable screening criteria recommended by the SCAQMD. For budgetary purposes, it is assumed that the study intersections would not exceed the applied screening criteria and a quantitative CO hotspots analysis would not be required. If the project is not anticipated to generate routine vehicle trips, we will provide a brief qualitative CO hotspot analysis.

Regarding odors, based on the Permit Renewal Application, there are existing odor controls at the facilities and additional odor controls would be installed, including an odor control scrubber slab and a biofilter odor control. Dudek will summarize the proposed odor controls at the facility based on the Permit Renewal Application and additional available information provided by TVWD, which are anticipated to adequately control odors and avoid potential odor impacts.

Additional Appendix G thresholds will also be evaluated, including the potential for the project to expose sensitive receptors to substantial pollutant concentrations or to impede attainment of the current SCAQMD Air Quality Management Plan. Details of the analysis (e.g., daily criteria air pollutant emission calculations) will be included in a technical appendix to the IS/MND.

### **Deliverables:**

- Emissions modeling output to be provided as an appendix to the IS/MND.

## *Memorandum*

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### **Task 2b Greenhouse Gas Emissions Assessment**

The GHG emissions section of the IS/MND will include a brief description of GHGs and a summary of applicable regulatory measures. Dudek will estimate the GHG emissions associated with construction of the project using CalEEMod based on the same construction scenario utilized in the air quality analysis.

Regarding operational GHG emissions, as discussed in the air quality scope, the project would include a new 800 kW diesel emergency generator and is anticipated to result in an increase in trips (worker and delivery truck) to the site. GHG emissions associated with the generator and mobile sources will be estimated using the same tools and sources of emission factors discussed under air quality. In addition, the expansion project is anticipated to generate an increase in electricity demand. Dudek assumes that the TVWD will provide an estimate of the net increase in annual electricity consumed (kilowatt or megawatt hours per year), which Dudek will use to estimate associated GHG emissions along with utility provider intensity factors included in CalEEMod. If the project would result in an increase in natural gas consumed, then Dudek similarly assumes that the TVWD will provide an estimate of the net increase in annual natural gas consumed (British thermal units per year), which Dudek will use to estimate associated GHG emissions based on natural gas factors included in CalEEMod. It is assumed that the project would result in a nominal increase in water use and solid waste generation and GHG emissions associated with water consumption and solid waste generation would not be included in the analysis. The project, however, would include two new aerobic digesters (in addition to three existing aerobic digesters). GHG emissions associated with aerobic wastewater treatment will be estimated based on estimated gallons of water per year treated provided by TVWD and emission factors (in tons per gallon) provided in CalEEMod. Details of the analysis (e.g., annual GHG emission calculations) will be included in a technical appendix to the IS/MND.

Dudek will assess the significance of the project with respect to the Appendix G thresholds; specifically, whether a project would (a) generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and (b) conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. The SCAQMD GHG CEQA Significance Threshold Working Group has proposed options lead agencies can select from to screen thresholds of significance for project-generated GHG emissions; however, no thresholds have been formally adopted. Consistent with the previous GHG analyses prepared for TVWD, Dudek proposes to apply the SCAQMD evaluated screening threshold of 3,000 metric tons of carbon dioxide equivalent (MT CO<sub>2</sub>E) per year for all land use types to evaluate the significance of project-generated emissions. We will work with TVWD staff to confirm application of the appropriate threshold for evaluating the project's GHG emissions under CEQA.

There are no GHG emissions reduction plans or Climate Action Plans that would apply to the proposed improvements. Dudek will discuss how the proposed project complies with state regulations (Assembly Bill 32) and regional goals to the extent applicable. Dudek will also provide a qualitative post-2020 analysis that will evaluate whether or not the project-generated GHG emissions would impede the attainment of the 2030 and 2050 reduction goals identified in Senate Bill 32 and Executive Order S-3-05, respectively, which will focus on why the project would not be a long-term source of substantial GHG emissions. Because neither the SCAQMD nor TVWD have established a numeric post-2020 bright-line threshold or provided guidance for demonstrating that a project will not impede the implementation of State's post-2020 GHG reduction goals, a qualitative assessment is assumed to be sufficient.

## *Memorandum*

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### Optional Task 2c Operational HRA

As discussed previously, the proposed project may result in a long-term increase in toxic air contaminant emissions (i.e., diesel DPM emissions) related to operational testing of a new 800 kW diesel emergency generator. The dispersion of DPM will be modeled using the American Meteorological Society/EPA Regulatory Model (AERMOD), along with meteorological data provided by the SCAQMD for the project area. Cancer risk and chronic hazard index will be estimated using CARB's Hot Spots Analysis and Reporting Program Version 2 (HARP2) in accordance with the Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. The maximum health impacts at the appropriate receptor locations will be compared to the SCAQMD thresholds for impacts resulting from toxic air contaminant emissions. The methodology and results of the health risk assessment will be summarized in the air quality analysis and detailed in an appendix to the IS/MND. Should TVWD determine Optional Task 2c is necessary, Dudek will provide a separate cost for this effort.

### Task 3 IS/MND Process

Dudek will prepare an IS/MND for TVWD to receive environmental clearance for the project. The IS/MND will address all of the environmental factors identified in Appendix G of the CEQA Guidelines, identify potentially significant impacts, and propose appropriate measures to mitigate significant impacts.

Supporting technical analyses will be prepared as described in Tasks 2a and 2b above, as well as Optional Task 2c should it be determined necessary. For air quality, emissions will be estimated for the construction phase only and the analysis presented directly in the IS/MND.

#### Task 3a Draft IS/MND

Dudek will prepare an IS for the proposed project in accordance with the requirements of the CEQA Guidelines and TVWD's standard format. Dudek will provide TVWD with a Screencheck IS/MND, including analysis supporting each checklist answer, as well as applicable references and up to ten (10) exhibits, as necessary. The IS will include a detailed explanation of environmental responses, a complete project description, and a significance determination. The following provides a brief description of notable environmental issues to be analyzed in the IS/MND, and Dudek's preliminary assumptions:

**Aesthetics.** The proposed buildings would be less than 35 feet high and would be located on the existing developed facility site; few residential sensitive receptors have direct views of the site; and existing trees and buildings may shield views. In addition, the proposed expansion would result only in short-term construction effects. As such, we do not anticipate any significant impacts relative to aesthetics, and visual simulations are not included as part of this scope/cost estimate.

**Biology.** The proposed expansion would occur within the existing developed and disturbed TVWRF site. The undeveloped portions of the site have been previously graded, excavated and re-compacted, and disturbed by vehicular and pedestrian traffic. As such, it is assumed that biological resources are unlikely to occur at the site. Mitigation measures will be identified as appropriate.

**Cultural.** The site was previously excavated and re-compacted for all existing structures and those planned for future expansion, including the proposed project. Any new work associated with the proposed project would only entail laying footings for new structures. As such, cultural resources, including tribal resources are not anticipated to be an

## *Memorandum*

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issue of concern. Note that the proposed project is subject to compliance with Assembly Bill 52 (AB 52). AB 52 requires government-to-government consultation between the lead agency (TVWD) and California Native American Tribes as requested by one or more Tribes to identify any Tribal Cultural Resources present on or near the project area. Under this scope, Dudek can provide assistance to TVWD with AB 52 compliance, if needed.

**Noise.** The existing TVWRF and proposed expansion is approximately 1,000 feet from the nearest existing noise-sensitive land uses (residences). Furthermore, there are several large commercial/industrial buildings and the I-15 freeway located in between the project and the residences. Mitigation measures will be identified as appropriate.

**Traffic.** For the purposes of this scope, it is assumed that a Traffic Study is unnecessary. However, traffic estimates during construction will be qualified as part of the IS/MND analysis and also included relative to the air quality analysis. Furthermore, because the proposed project is an expansion of existing facility, it is assumed that operational traffic can be estimated and analyzed using current conditions. Mitigation measures will be identified as appropriate.

**Water Quality and Hydrology.** The site has been previously excavated and re-compacted, and it is assumed that the project would not cause any permanent impacts to the on-site or surrounding hydrology or water quality. As such, hydrology and water quality are not anticipated to be an issue of concern. Additionally, TVWD is currently applying to renew their NPDES permit (NPDES Order No. R8-2012-0028, NPDES No. CA8000100). Mitigation measures will be identified as appropriate.

**Other Environmental Effects.** Information will be provided to support conclusions relative to the absence of significant effects related to other environmental topics (i.e., land use and planning, mineral resources, utilities and service systems, public services, and recreation). Cumulative effects will also be assessed as part of IS/MND preparation.

**Documentation.** Dudek will prepare up to two (2) electronic screencheck drafts of the IS/MND for review by TVWD staff. Upon final acceptance of the 2nd screencheck, Dudek will make final revisions and prepare a public review IS/MND for the proposed project. Two (2) CDs of the public review IS/MND will be provided to TVWD. It is assumed for this scope of work that Dudek will distribute the Notice of Intent (NOI) to adopt the MND to up to 30 recipients on a mailing list generated by Dudek and approved by TVWD. Dudek will utilize certified mail for distribution of the NOI only. No hard copies or CDs of the MND will be mailed to the distribution list recipients. Instead, the NOI will direct the recipient to the IS/MND posted on the TVWD website. Alternatively, the NOI will direct the recipients to the TVWD and/or the nearest library to view a hardcopy of the IS/MND (sent to them by Dudek). Dudek will also post a notice in a local newspaper and with the County Clerk<sup>2</sup>.

In addition to preparing and circulating the IS/MND for public review, Dudek will prepare the Notice of Completion (NOC), which will accompany the public review documents to the State Clearinghouse. Fifteen (15) CDs containing the IS/MND will be provided by Dudek for routing to the State Clearinghouse.

### **Deliverables:**

- One (1) electronic copy of 1st and 2nd Screencheck IS/MND to TVWD Staff
- Two (2) CDs containing the Public Review IS/MND to TVWD Staff
- NOI hardcopies of the Public Review IS/MND, not to exceed 30 copies, sent via certified mail
- Fifteen (15) CDs of the Public Review IS/MND to State Clearinghouse along with NOC for public review period

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<sup>2</sup> All posting and filing fees will be paid by TVWD.

## Memorandum

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### Assumptions:

- Dudek will respond to one (1) round of comments from TVWD on each of the 1<sup>st</sup> and 2<sup>nd</sup> Screencheck IS/MND versions.
- This scope does not include responses to comments relative to legal review.

### Task 3b Final MND and MMRP

Following the 30-day IS/MND review period, Dudek will:

- Compile all comment letters and comments received by TVWD and prepare responses to comments received (this scope of work and cost estimate assumes responses to a maximum of 25 individual comments between all letters received<sup>3</sup>);
- Prepare a Screencheck Final MND and draft Mitigation Monitoring Reporting Program (MMRP), if needed for TVWD review;
- Revise the Screencheck Final MND and MMRP per comments received from TVWD;
- Prepare a 2nd Screencheck Final MND and revised MMRP for TVWD review;
- Revise the 2nd Screencheck Final MND and MMRP, per comments received from TVWD;
- Copies of the Final MND and MMRP for adoption by TVWD; and
- Dudek will file the Notice of Determination with the County Clerk<sup>4</sup>

### Deliverables:

- One (1) electronic copy of 1st and 2nd Screencheck Final MND and MMRP
- Two (2) hardcopies and two CDs of the Final MND and MMRP for adoption by TVWD

### Assumptions:

- Dudek will respond to one (1) round of comments from TVWD on each of the 1st and 2nd Screencheck Final MND and MMRP versions.
- This scope does not include responses to comments relative to legal review.

## Schedule

Project Kick-off/Initiation	November 1, 2017
Air Quality / GHG Modeling	November 2 - 21, 2017
Initial Study / Mitigated Negative Declaration	November 2, 2017 – April 2018
<ul style="list-style-type: none"><li>• Prepare 1st SC Draft IS/MND</li></ul>	November 2 - December 8, 2017
<ul style="list-style-type: none"><li>• TVWD review of 1st SC Draft IS/MND</li></ul>	December 11, 2017 - January 3, 2018
<ul style="list-style-type: none"><li>• Dudek addresses TVWD comments on 1st SC IS/MND</li></ul>	January 4 - 12, 2018
<ul style="list-style-type: none"><li>• TVWD review of 2nd SC Draft IS/MND</li></ul>	January 15 - 23, 2018

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<sup>3</sup> Note that each comment letter may contain multiple comments.

<sup>4</sup> All posting and filing fees will be paid by TVWD.

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• Dudek addresses TVWD comments on 2nd SC IS/MND	January 24 - February 2, 2018
• 30-day Public Review of Draft IS/MND	February 5 - March 7, 2018
• Address Public Comments	March 8 - March 15, 2018
• Prepare 1st Screencheck Final MND and MMRP	March 16 - March 28, 2018
• Dudek addresses TVWD comments on 1st SC FMND and MMRP	March 29 - April 5, 2018
• Prepare a 2nd Screencheck Final MND	April 6 - April 13, 2018
• Dudek addresses TVWD comments on 2nd SC FMND and MMRP	April 16 - April 23, 2018
• TVWD to Adopt Final IS/MND	April 24, 2018
• File Notice of Determination	Within 5 days after adoption of MND

## Cost Summary

TVWD will be billed on a time-and-material basis in accordance with the Dudek 2017 Standard Schedule of Charges, not to exceed **\$39,691**. Dudek would be able to commence work on the Initial Study and associated technical analysis immediately upon authorization to proceed. Any services requested but not included within the scope of this contract shall be processed through an "Add Services Proposal."

Thank you for the opportunity to propose on this project, and we hope that Dudek will serve your needs for this effort. If you have any questions regarding this proposal, please feel free to contact me at 619.890.2762, or at [WWorthey@Dudek.com](mailto:WWorthey@Dudek.com).

November 25, 2017

Board of Directors  
Temescal Valley Water District

Re: Water and Sewer Operations – November 2017

Dear Board Members:

Temescal Valley Water District operations personnel perform the following tasks on a regular and routine basis:

- Managed 299.24 acre-feet of water through system.
- Collected monthly potable water samples. We are now collecting four samples per week as required by the State Water Resources Control Board, Division of Drinking Water.
- Submitted monthly report to the Regional Water Quality Control Board for:
  - Temescal Valley Wastewater Reclamation Facility
- Submitted monthly report to the State Water Resources Control Board, Division of Drinking Water for TVWD distribution system monitoring.
- Read 5295 water meters.
- Maintained aesthetic appearance of all District facilities.
- 15 shut-offs.
- Responded 115 service calls.
- Installed 8 meters for the various developers
- Responded to 38 USA Dig Alerts to mark District underground utilities.

In addition to the above regular and routine tasks we also performed the following operational tasks.

- Installed new valve on non-potable line at Temescal Canyon rd. and Leroy to facilitate pressure testing of line. Also adds flexibility in isolating line in the future.
- Digester #2 aerator failed, has been removed for repair.
- Experienced leak on non-potable water line on Temescal Canyon rd. just north of Dawson Canyon rd. That line has been repaired and is back in service.
- High pressure protection rupture disk ruptured at reach "F." Water lost through rupture disk was not included in our Western bill.
- Monitoring construction of new sewer lift station in Terramor. All pumps have been test run.
- Submitted October report to the State Water Resources Control Board via CWIQS.

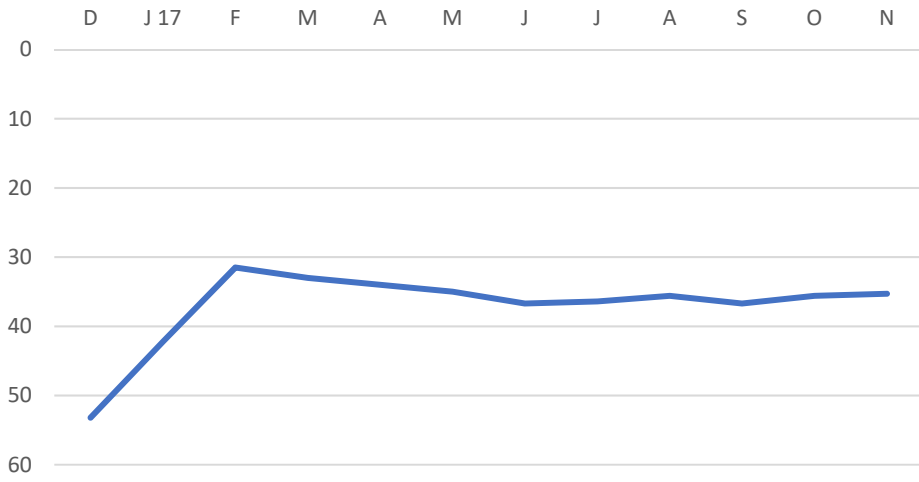
Sincerely,

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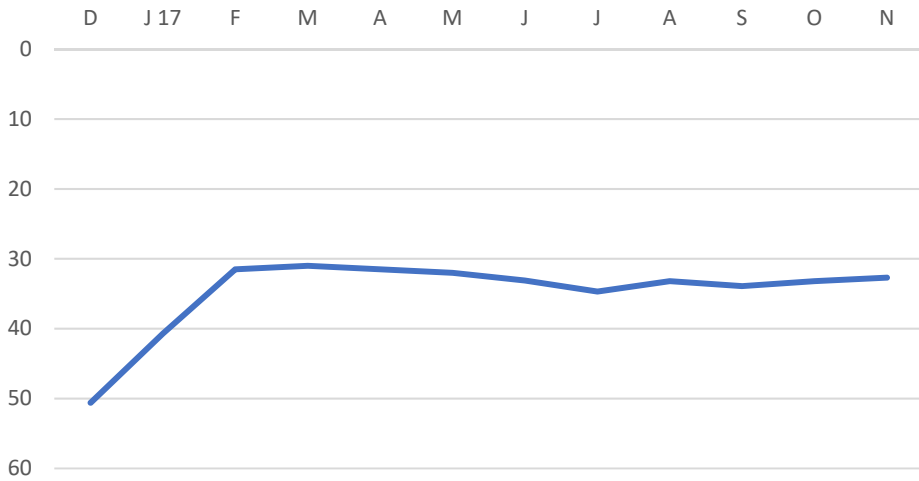
Kenneth R. Caldwell, Operations Superintendent



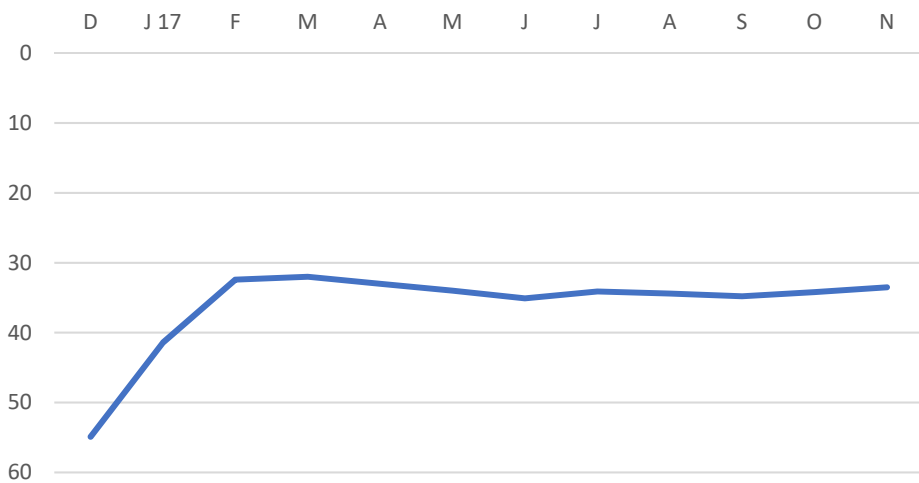
Well #1



Well #1A



Well #4



**TEMESCAL VALLEY WATER DISTRICT  
ENGINEERING DEPARTMENT**

**DISTRICT ENGINEER'S MONTHLY REPORT**

**Date:** November 22, 2017  
**To:** Jeff Pape, General Manager  
**From:** Justin Scheidel, District Engineer  
**Subject:** Engineering Activities Update for the Month of November 2017

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Following is a summary of the status of current engineering projects:

**PLAN CHECKING & DEVELOPER RELATED PROJECTS**

*Terramor Water, Sewer, & RW Improvements In-Tract Laterals* (10476, 10477 and 10478) – Engineering review previously completed, currently under construction.

*Terramor Regional Sewer LS* (8957) – Engineering review completed, currently under construction.

*Terramor Reservoirs Project* (1401.1610) – Reviewed the 100% design submittal from Dexter Wilson. Minor edits required to complete design and start construction.

*TVWD Water Reclamation Facility Expansion* (9830) – Reviewed and provided comments on the 60% design submittal for the treatment plant expansion, waiting for 90% re-submittal.

*Temescal – Leroy Sewer Improvements* (10555 Phase 1) – Engineering review completed and mylars are signed for construction.

*Temescal Valley Commerce Center* (10555 Phase 2) – Reviewed and provided comments on the final design for the onsite and offsite sewer and the offsite waterline extension. Signed mylars for the potable water pipeline connection and the offsite sewer project which should be constructed soon.

**CAPITAL IMPROVEMENT PROJECTS**

*1320 Reservoir Preliminary Design Report* (1401.1608): Submitted Draft Preliminary Engineering Report to the General Manager for review. Currently waiting for comments.

*Knabe Road Non-Potable Waterline* (1401.1708): Began design of the pipeline extension which included requesting utility information, selecting an appropriate alignment and starting to develop the plan and profile sheets. We expect to have drawings to the General Manager for review by the end of the month.

*LLWRF Percolation Pond Improvements* (1401.1707): Submitted first round of preliminary drawings to the General Manager for review. We are currently incorporating his comments and working to complete a 75% design level submittal by the end of the month.

**AS-NEEDED ENGINEERING SERVICES**

***General Engineering Initiated During FY 2017/18***

- Project 1401.1701: Potable Water Related Services for FY 2017/18. Prepare District Engineer's report. Oversight of design of the 1320 reservoir preliminary design. Provided utility request information to developers and other agencies. Organized catalog of as-builts to facilitate utility requests.
- Project 1401.1702: Non-Potable Water Related Services for FY 2017/18. Provided utility request information to developers and other agencies. Organized catalog of as-builts to facilitate utility requests.
- Project 1401.1703: Wastewater Related Services for FY 2017/18. Provided utility request information to developers and other agencies. Organized catalog of as-builts to facilitate utility requests.
- Project 1401.1704/5/6: Potable/Recycled/Wastewater Mapping Updates for FY 2017/18. Integration of new facilities into District GIS for records and development of new District maps. Development of GIS mapping facilitating export for utility map requests.