

APPENDIX 31

EXAMPLE WATER CONSERVATION CONCEPT STATEMENT



Marina Coast Water District

11 Reservation Road, Marina, Ca 93933

831-384-6131

Water Conservation Department

831-883-5905

Fax 831-384-0197

WATER CONSERVATION CONCEPT STATEMENT

This form is required as part of the Landscape Documentation Package submitted to the District for plan check procedures. Please attach worksheets showing required calculations.

Project Name: La Posada School **Number of Metered Sites:** 2

Please indicate with a check mark that the following additional documents that have been included in the Landscape Documentation Package submitted to the District.

- | | |
|---|--|
| <input checked="" type="checkbox"/> On-Site Recycled Water User Plan | <input checked="" type="checkbox"/> Irrigation System Map and Valve Site |
| <input checked="" type="checkbox"/> MCWD Landscape Site Data Sheet | Maps |
| <input checked="" type="checkbox"/> Effective Precipitation Statement | <input checked="" type="checkbox"/> Landscape & Irr. Maintenance Schedules |
| <input checked="" type="checkbox"/> ET-Based Irrigation Schedules | <input checked="" type="checkbox"/> Soil Analysis |
| <input checked="" type="checkbox"/> Landscape Design Plan | <input checked="" type="checkbox"/> Soil Amendment Recommendation |
| <input checked="" type="checkbox"/> Landscape Grading Plan | <input checked="" type="checkbox"/> Certificate of Substantial Completion |
| <input checked="" type="checkbox"/> Irrigation Plan | <input checked="" type="checkbox"/> Public Information Plan |

Description of Project

Please describe below the planning and design actions that are intended to achieve conservation and efficiency in water use.

Use of ET-based irrigation controller with soil moisture monitoring/shut-off device

Polymer soil amendment to increase the soil water holding capability of the sports field.

All planting beds to receive a heavy 3" layer of course mulch to reduce soil evaporation.

Use of low-angle spray nozzles and pressure compensating heads to reduce wind drift and run-off.

Project Name: La Posada School

Name of Metered Site # 1: Common Areas

Landscape Area Acres 5 Ft² 217,800

Estimated Applied Water Use Acre - Ft 8.2 Ft³ 357,192

+ * Water Expected From Effective Precipitation Acre - Ft 0.65 Ft³ 28,314

Estimated Total Water Use Acre - Ft 8.85 Ft³ 385,506

Does this meter serve any Recreational Turf Area? Acres 0 Ft² 0

If so, how much water, in addition to the Maximum Applied Water Allowance, is required for this Recreational Turf Area?

Acre - Ft 0 Ft³ 0

Name of Metered Site # 2: Sports Field

Landscape Area Acres 1.4 Ft² 60,984

Estimated Applied Water Use Acre - Ft 5.74 Ft³ 250,034

+ * Water Expected From Effective Precipitation Acre - Ft 0.18 Ft³ 7,841

Estimated Total Water Use Acre - Ft 5.92 Ft³ 257,875

Does this meter serve any Recreational Turf Area? Acres 1.4 Ft² 60,984

If so, how much water, in addition to the Maximum Applied Water Allowance, is required for this Recreational Turf Area?

Acre - Ft 0 Ft³ 0

Name of Metered Site # 3: _____

Landscape Area Acres _____ Ft² _____

Estimated Applied Water Use Acre - Ft _____ Ft³ _____

+ * Water Expected From Effective Precipitation Acre - Ft _____ Ft³ _____

Estimated Total Water Use Acre - Ft _____ Ft³ _____

Does this meter serve any Recreational Turf Area? Acres _____ Ft² _____

If so, how much water, in addition to the Maximum Applied Water Allowance, is required for this Recreational Turf Area?

Acre - Ft _____ Ft³ _____

Project Name: _____

Name of Metered Site # 4: _____

Landscape Area Acres _____ Ft² _____

Estimated Applied Water Use Acre - Ft _____ Ft³ _____

+ * Water Expected From Effective Precipitation Acre - Ft _____ Ft³ _____

Estimated Total Water Use Acre - Ft _____ Ft³ _____

Does this meter serve any Recreational Turf Area? Acres _____ Ft² _____

If so, how much water, in addition to the Maximum Applied Water Allowance, is required for this Recreational Turf Area?

Acre - Ft _____ Ft³ _____

Name of Metered Site # 5: _____

Landscape Area Acres _____ Ft² _____

Estimated Applied Water Use Acre - Ft _____ Ft³ _____

+ * Water Expected From Effective Precipitation Acre - Ft _____ Ft³ _____

Estimated Total Water Use Acre - Ft _____ Ft³ _____

Does this meter serve any Recreational Turf Area? Acres _____ Ft² _____

If so, how much water, in addition to the Maximum Applied Water Allowance, is required for this Recreational Turf Area?

Acre - Ft _____ Ft³ _____

Name of Metered Site # 6: _____

Landscape Area Acres _____ Ft² _____

Estimated Applied Water Use Acre - Ft _____ Ft³ _____

+ * Water Expected From Effective Precipitation Acre - Ft _____ Ft³ _____

Estimated Total Water Use Acre - Ft _____ Ft³ _____

Does this meter serve any Recreational Turf Area? Acres _____ Ft² _____

If so, how much water, in addition to the Maximum Applied Water Allowance, is required for this Recreational Turf Area?

Acre - Ft _____ Ft³ _____

Project's Total Landscape Area:

	Acres	<u>7.2</u>	Ft ²	<u>313,632</u>
1. Non-irrigated:	Acres	<u>0.8</u>	Ft ²	<u>34,848</u>
2. Irrigated:	Acres	<u>6.4</u>	Ft ²	<u>278,784</u>

Project's Recreational Turf Area

Total size of Recreational Turf Area	Acres	<u>1.4</u>	Ft ²	<u>60,984</u>
Estimated Total Water Use for this area	Acre - Ft	<u>5.92</u>	Ft ³	<u>257,875</u>

Project's Water Budget

Project's Maximum Applied Water Allowance	Acre - Ft	<u>15.12</u>	Ft ³	<u>658,627</u>
Additional water above Maximum Applied Water Allowance required for Recreational Turf Area				
	Acre - Ft	<u>0</u>	Ft ³	<u>0</u>
Water Budget Total	Acre - Ft	<u>15.12</u>	Ft ³	<u>658,627</u>

Project's Water Use

Project's Estimated Applied Water Use	Acre - Ft	<u>13.94</u>	Ft ³	<u>607,226</u>
Total Water Expected From Effective Precipitation	Acre - Ft	<u>0.83</u>	Ft ³	<u>36,155</u>
Estimated Total Water Use	Acre - Ft	<u>14.77</u>	Ft ³	<u>643,381</u>

Notes:

1. If you claim that a part of the Estimated Total Water Use will be provided by Effective Precipitation, an Effective Precipitation Disclosure Statement shall be completed and submitted. The Estimated Total Water Use for the project would then be the sum of the Estimated Applied Water Use and the amount of water expected as Effective Precipitation.
2. Upon completion of the landscape installation and prior to any request for occupancy, a Certificate of Substantial Completion must be completed and submitted to the district to verify compliance with District code.

Date: February, 3, 2007Prepared By: David SpoolTitle: Landscape ArchitectFirm: Spool and PartnersPhone # (316) 455-9898

Water Use Calculations La Posada School

Total Landscape Area:

- | | |
|--------------------------------------|-------------------------------|
| 1) Common Areas, single water meter, | 5.00 acres |
| 2) Sports Field, single water meter, | 1.40 acres |
| 3) Non-irrigated Landscape | <u>0.80 acres</u> |
| | 7.20 acres or 313,632 sq. ft. |

Maximum Applied Water Allowance

313,632 sq. ft X 36.2 " ET X 0.7 adj. factor X 0.62 conversion factor = 4,927,409 gallons or 15.12 ac. ft.

Effective Precipitation (EP)

Effective Precipitation Calculation												
Annual Rainfall, Castroville CA								14.89 Inches				
	January	February	March	April	May	June	July	August	September	October	November	December
Average Rainfall	3.64	3.40	2.48	1.08	0.44	0.00	0.00	0.00	0.00	0.52	1.52	2.56
Effective Precipitation = 10%	0.36	0.34	0.25	0.11	0.04	0.00	0.00	0.00	0.00	0.05	0.15	0.26
Total Inches Effective Precipitation Annually								1.56	Inches		0.13	Feet

Water Expected from Effective Precipitation

- 1) Common Areas
217,800 sq. ft. X 0.13 ' Effective Precipitation = 28314 cu. ft. or 0.65 ac. ft. water
- 2) Sports Field
60,984 sq. ft. X 0.13 ' Effective Precipitation = 7928 cu. ft. or 0.18 ac. ft. water

Estimated Applied Water Use (individual meters)

- 1) Common Areas
[217,800 sq. ft. X 0.4 Landscape Factor X (36.20" ET less Effective Precipitation of 1.56") X 0.62 conversion factor] / 0.70 irrigation efficiency = 2,672,941 gallons or 8.20 ac. ft.
- 2) Sports Field
[60,984 sq. ft. X 1.0 Landscape Factor X (36.20" ET less Effective Precipitation of 1.56") X 0.62 conversion factor] / 0.70 irrigation efficiency = 1,871,059 gallons or 5.74 ac. ft.

Estimated Applied Water Use (whole project)

8.20 ac. ft (Common Areas) + 5.74 ac. ft. (Sports Field) = 13.94 ac. ft.

Amount of Estimated Applied Water Use over the Maximum Applied Water Allowance

15.12 ac. ft. (Water Budget) – 13.94 ac. ft. (Applied Water) = 1.18 ac. ft water remains. There is no Applied Water Use beyond that allowed for the project.

APPENDIX 32

EXAMPLE LANDSCAPE SITE DATA FORM



Marina Coast Water District

11 Reservation Road, Marina, Ca 93933

831-384-6131

Water Conservation Department

831-883-5905

Fax 831-384-0197

LANDSCAPE SITE DATA FORM

The data on this form is a requirement as written in Section 700 of the District document entitled Procedures, Guidelines, and Design Requirements. This form is to be submitted to the District for plan check purposes.

Project Name: Hometown Cottages

Project Location: 1070 West Coast Drive, Marina CA

For the complete project site, each individual lot and individual landscape water meters, please provide the acreage and square footage for the following categories as indicated:

The data requested below may be shown on plans, but must be presented as a separate 8.5"x11" attached document. Alternative charts/tables are acceptable. Please use this form as a cover page.

Categories	Site	Typ. Lot	Meter
1) Area of entire project:	3.24 acres	0.06 acres	N/A
	141,134sq. ft.	2,617 sq. ft.	
2) Area of hardscape(roads, sidewalks)	1.3 acres	0.02 acres	N/A
	56,628 sq. ft.	870 sq. ft.	
3) Area of structures(buildings)	0.52 acres	0.03 acres	N/A
	22, 770 sq. ft.	1307 sq. ft.	
4) Total landscaped area(porous areas)	1.42 acres	0.03acres	0.13 acres
	62,855 sq. ft.	1,307 sq. ft.	5,726 sq. ft.
A) Non-irrigated landscape area	1.04 acres	0.02 acres	0 acres
	45,530 sq. ft.	870 sq. ft.	0 sq. ft.
B) Total irrigated landscape area	0.38 acres	.01 acres	0.13 acres
	16,591 sq. ft.	437 sq. ft.	5,726 sq. ft.
i) Irrigated turf area	0.03 acres	0 acres	0 acres
	1,426 sq. ft.	0 sq. ft.	0 sq. ft.
ii) Irrigated area other than turf	0.35 acres	.01 acres	0.13 acres
	15,165 sq. ft.	437 sq. ft.	5,726 sq. ft.

This data has been submitted by: Name; Mark Builder
Title: VP Home Town Developers, LLC.
Date: September 26, 2005
Phone #: (774) 567-8910

APPENDIX 33

EXAMPLE CALCULATION OF MAXIMUM APPLIED WATER ALLOWANCE

Hometown Cottages

Water Budget Worksheet

SITE:

Common Area Landscaping Only

Red = Input Data
Blue = Calculated Data

MAWA = Maximum Applied Water Allowance

= (Eto) (0.8) (LA) (0.62) Where:

Eto = 36" Reference Evapotranspiration for Marina, CA

0.7 = Eto Adjustment Factor

LA = Total Landscape area

0.62 = Conversion Factor to Gallons

PROJECT INPUT FACTORS:

Annual Reference Evapotranspiration for location (Eto)

Eto Adjustment Factor

Square footage (LA) of

Trees on Bubblers
Small shrubs on drip
Groundcover on Laserline
Mixed shrubs/Trees on Drip
none
none

Total Landscape Area (LA)

Conversion Factor to Gallons

36.0	inches/ yr
0.7	
544	square feet
1,257	square feet
539	square feet
3,386	square feet
0	square feet
0	square feet
5,726	square feet
0.62	

MAWA = 89,463 Gallons/Year
or 11,960 Cubic Ft /Year
or 119.6 Units/Year
or 0.27 Acre-ft / Year

APPENDIX 34

EXAMPLE CALCULATION OF ESTIMATED TOTAL WATER USE (BY HYDROZONE METHOD)

Estimated Total Water Use Worksheet, Page #2

ETWU = Sum of individual hydrozone EWU's

where:

Hydrozone EWU = (Eto) (Kl) (LA) (0.62) / IE

when:

Eto = Reference Evapotranspiration (for location in inches per year)

Kl = Landscape Coefficient - a product of:

- a) the water requirements of plant species (Ks)
- b) the density of planting (Kd)

IE = Irrigation Efficiency

LA = Landscape Planting area (in square feet)

0.62 = Conversion Factor to Gallons

Hydrozone # 4

Mixed shrubs/Trees on Drip

Reference Evapotranspiration for location (Eto)	36.2	inches/year
---	------	-------------

KI = a. (Ks) Species factor

b. (Kd) Density factor

c. (Kmc) Microclimate facto

Square Footage (LA) of plant material	3,386 square feet
---------------------------------------	-------------------

Irrigation efficiency of system	65%	%
---------------------------------	-----	---

EWU=	36.2	0.16	3,386	0.62	0.650
------	------	------	-------	------	-------

AWU= **18,707** Gallons/year or **2,501** Cubic Ft/Year or **25.0** Units/Year for
or **0.06** Acre-ft /Year **Mixed shrubs/Trees on Drip**

Hydrozone # 5

none

Reference Evapotranspiration for location (Eto)	36.2	inches/year
---	------	-------------

KI = a. (Ks) Species factor

b. (Kd) Density factor

c. (Kmc) Microclimate factor

Square Footage (LA) of plant material	0	square feet
---------------------------------------	---	-------------

Irrigation efficiency of system	65%	%
---------------------------------	------------	---

AWU=	36.2	1	0	0.62	0.650
------	------	---	---	------	-------

AWU= **0** gallons/year or **0** Cubic Ft/Year or **0.0** Units/Year for
or **0.00** Acre-ft /Year or **none**

Hydrozone # 6

none

Reference Evapotranspiration for location (Eto)	36.2	inches/year
---	------	-------------

KI = a. (Ks) Species factor

b. (Kd) Density factor

c. (Kmc) Microclimate factor

Square Footage (LA) of plant material	0	square feet
---------------------------------------	---	-------------

Irrigation efficiency of system	65%	%
---------------------------------	-----	---

AWU=	36.2	1	0	0.62	0.650
------	------	---	---	------	-------

AWU= **0** gallons/year or **0** Cubic Ft/Year or **0.0** Units/Year for
or **0.00** Acre-ft /Year or **none**

Estimated Total Water Use (EWU) equals

or

41.8 Units

Acre-Ft

APPENDIX 35

EFFECTIVE PRECIPITATION DISCLOSURE STATEMENT



Marina Coast Water District

11 Reservation Road, Marina, Ca 93933

831-384-6131

Water Conservation Department

831-883-5905

Fax 831-384-0197

EXAMPLE DETERMINATION OF EFFECTIVE PRECIPITATION

A somewhat low 10% Effective Precipitation rate is used due to the following factors:

1. Porous sandy soil with low water holding capacity of 0.08 H₂O/inch of soil depth.
2. Site has a high wind and South facing sun exposure.
3. Slope on majority of site exceeds 5%.
4. Periods of rainfall are relatively light, not often more than ½" per application, with drying periods shortly afterwards.
5. Dense plantings prevent contact with soil.

Effective Precipitation Calculation

Annual Rainfall, Castroville CA14.89Inches

	January	February	March	April	May	June	July	August	September	October	November	December
Average Rainfall	3.64	3.40	2.48	1.08	0.44	0.00	0.00	0.00	0.00	0.52	1.52	2.56
Effective Precipitation = 10%	0.36	0.34	0.25	0.11	0.04	0.00	0.00	0.00	0.00	0.05	0.15	0.26

Total Inches Effective Precipitation Annually1.56Inches0.13Feet

Sports Field = 60,984 square feet

0.13' Effective Precipitation x 60,984 square feet sports field = 7,927.92 ft³ water
Or 59,301 gallons water
Or 0.182 acre-feet of water

Common Landscaping = 217,800 square feet

0.13' Effective Precipitation x 217,800 square feet common landscaping = 28,314 ft³ water
Or 211,789 gallons water
Or 0.64 acre-feet of water

Total Effective Precipitation = 36241.92 ft³ or 0.832 acre-feet.

APPENDIX 36

EXAMPLE ET-BASED IRRIGATION SCHEDULE FOR THE ESTABLISHMENT PERIOD

Irrigation Station Data, Establishment Period

Monthly Reference ET In Inches (ET_o)

	1.44	1.71	2.96	4.19	4.63	4.81	4.03	3.81	2.98	2.63	1.62	1.39
Marina, Ca	1.44	1.71	2.96	4.19	4.63	4.81	4.03	3.81	2.98	2.63	1.62	1.39

- Station Number
- Station Flow Rate (gpm)
- Landscape Coefficient For Station
- Sprinkler Precipitation Rate (In/Hr)
- Irrigation Station Efficiency (%)
- Effective Root Zone Depth (Inches)
- Soil Moisture Holding Capacity (In/In)
- Management Allowed Depletion (%)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
8.0	3.0	4.0	4.5	3.0	6.0	5.0	7.5	5.0	6.0	5.6	3.8	5.3	0.0
0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.0	0.2	0.2	1.0	1.0	0.2	1.0
4.00	0.80	4.00	0.80	0.98	4.00	4.00	0.80	4.00	4.00	0.80	0.80	0.98	2.00
90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	65%
6	6	6	6	6	6	6	6	6	6	6	6	6	0
0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	50%

- Station Number
- Station Flow Rate (gpm)
- Landscape Coefficient For Station
- Sprinkler Precipitation Rate (In/Hr)
- Irrigation Station Efficiency (%)
- Effective Root Zone Depth (Inches)
- Soil Moisture Holding Capacity (In/In)
- Management Allowed Depletion (%)

15	16	17	18	19	20	21	22	23	24	25	26	27	28
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

- Station Number
- Station Flow Rate (gpm)
- Landscape Coefficient For Station
- Sprinkler Precipitation Rate (In/Hr)
- Irrigation Station Efficiency (%)
- Effective Root Zone Depth (Inches)
- Soil Moisture Holding Capacity (In/In)
- Management Allowed Depletion (%)

29	30	31	32	33	34	35	36	37	38	39	40	41	42
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

ET-Based Irrigation Schedule, Establishment Period

Stations # 1,3,6,7,9,10

Calculated Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Daily Reference ET (ET _d)	0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
• Root Zone Working Storage (Inches)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
• Monthly Plant Water Requirement (In)	0.32	0.38	0.65	0.92	1.02	1.06	0.89	0.84	0.66	0.58	0.36	0.31
• Monthly Irrigation Water Requirement (In)	0.35	0.42	0.72	1.02	1.13	1.18	0.99	0.93	0.73	0.64	0.40	0.34
• Effective Precipitation Rate (In/Hr)	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60

ET-Based Irrigation Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Irrigation Event Frequency (Days)	9	8	4	3	3	3	3	4	5	8	9	
• Irrigation Days Per 30 Day Period (est.)	3	4	7	10	11	11	9	9	7	6	4	3
• Skip Days (Days Between Irrigations)	8	7	3	2	2	2	2	3	4	7	8	
• Total Minutes Per Irrigation Day	2	2	1	2	2	2	1	1	1	2	2	2

Establishment Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Desired Irrigation Days Per Week (enter)	1	1	2	2	3	3	3	3	2	2	1	1
• Total Minutes Per Irrigation Day	2	2	1	2	2	2	1	1	1	1	2	2
• Net Irrigation Applied (Inches)	0.12	0.12	0.06	0.12	0.12	0.12	0.06	0.06	0.06	0.06	0.12	0.12

ET-Based Irrigation Schedule, Establishment Period

Stations # 2,4

Calculated Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Daily Reference ET (ET _d)	0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
• Root Zone Working Storage (Inches)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
• Monthly Plant Water Requirement (In)	0.26	0.31	0.53	0.75	0.83	0.87	0.73	0.69	0.54	0.47	0.29	0.25
• Monthly Irrigation Water Requirement (In)	0.29	0.34	0.59	0.84	0.93	0.96	0.81	0.76	0.60	0.53	0.32	0.28
• Effective Precipitation Rate (In/Hr)	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72

ET-Based Irrigation Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Irrigation Event Frequency (Days)	11	9	5	4	3	3	4	4	5	6	10	12
• Irrigation Days Per 30 Day Period (est.)	3	3	6	8	9	9	8	7	6	5	3	3
• Skip Days (Days Between Irrigations)	10	8	4	3	2	2	3	3	4	5	9	11
• Total Minutes Per Irrigation Day	8	8	7	6	7	7	8	8	7	8	8	8

Establishment Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Desired Irrigation Days Per Week (enter)	1	1	2	2	3	3	3	3	2	2	1	1
• Total Minutes Per Irrigation Day	5	6	5	7	5	5	5	5	5	5	6	5
• Net Irrigation Applied (Inches)	0.06	0.07	0.06	0.08	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06

ET-Based Irrigation Schedule, Establishment Period

Stations # 2,4

Calculated Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Daily Reference ET (ET _d)	0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
• Root Zone Working Storage (Inches)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
• Monthly Plant Water Requirement (In)	0.26	0.31	0.53	0.75	0.83	0.87	0.73	0.69	0.54	0.47	0.29	0.25
• Monthly Irrigation Water Requirement (In)	0.29	0.34	0.59	0.84	0.93	0.96	0.81	0.76	0.60	0.53	0.32	0.28
• Effective Precipitation Rate (In/Hr)	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72

ET-Based Irrigation Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Irrigation Event Frequency (Days)	11	9	5	4	3	3	4	4	5	6	10	12
• Irrigation Days Per 30 Day Period (est.)	3	3	6	8	9	9	8	7	6	5	3	3
• Skip Days (Days Between Irrigations)	10	8	4	3	2	2	3	3	4	5	9	11
• Total Minutes Per Irrigation Day	8	8	7	8	7	7	8	8	7	8	8	8

Establishment Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Desired Irrigation Days Per Week (enter)	1	1	2	2	3	3	3	3	2	2	1	1
• Total Minutes Per Irrigation Day	5	6	5	7	5	5	5	5	5	5	6	5
• Net Irrigation Applied (Inches)	0.06	0.07	0.06	0.08	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.06

ET-Based Irrigation Schedule, Establishment Period

Stations # 8,11,12

Calculated Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Daily Reference ET (ET _d)	0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
• Root Zone Working Storage (Inches)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
• Monthly Plant Water Requirement (In)	1.44	1.71	2.96	4.19	4.63	4.81	4.03	3.81	2.98	2.63	1.62	1.39
• Monthly Irrigation Water Requirement (In)	1.60	1.90	3.29	4.66	5.14	5.34	4.48	4.23	3.31	2.92	1.80	1.54
• Effective Precipitation Rate (In/Hr)	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72

ET-Based Irrigation Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Irrigation Event Frequency (Days)	2	2	1	1	1	1	1	1	1	1	2	2
• Irrigation Days Per 30 Day Period (est.)	15	18	31	44	48	50	42	40	31	27	17	14
• Skip Days (Days Between Irrigations)	1	1	0	0	0	0	0	0	0	0	1	1
• Total Minutes Per Irrigation Day	8	10	8	12	13	13	11	11	8	7	9	8

Establishment Schedule

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
• Desired Irrigation Days Per Week (enter)	1	1	2	2	3	3	3	3	2	2	1	1
• Total Minutes Per Irrigation Day	28	35	28	42	30	30	26	26	28	25	32	28
• Net Irrigation Applied (Inches)	0.34	0.42	0.34	0.50	0.36	0.36	0.31	0.31	0.34	0.30	0.38	0.34

APPENDIX 37

EXAMPLE ET-BASED IRRIGATION SCHEDULE FOR THE MATURE LANDSCAPE

Irrigation Station Data

- Monthly Reference ET In Inches (ET_o)

	1.44	1.71	2.96	4.19	4.63	4.81	4.03	3.81	2.98	2.63	1.62	1.39
Marina, Ca	1.44	1.71	2.96	4.19	4.63	4.81	4.03	3.81	2.98	2.63	1.62	1.39

- Station Number
- Station Flow Rate (gpm)
- Landscape Coefficient For Station
- Sprinkler Precipitation Rate (In/Hr)
- Irrigation Station Efficiency (%)
- Effective Root Zone Depth (Inches)
- Soil Moisture Holding Capacity (In/In)
- Management Allowed Depletion (%)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
8.0	3.0	4.0	4.5	3.0	6.0	5.0	7.5	5.0	6.0	5.6	3.8	5.3	0.0
0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.0	0.2	0.2	1.0	1.0	0.2	1.0
4.00	0.80	4.00	0.80	0.98	4.00	4.00	0.80	4.00	4.00	0.80	0.80	0.98	2.00
90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	65%
6	6	6	6	6	6	6	6	6	6	6	6	6	0
0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.00
50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

- Station Number
- Station Flow Rate (gpm)
- Landscape Coefficient For Station
- Sprinkler Precipitation Rate (In/Hr)
- Irrigation Station Efficiency (%)
- Effective Root Zone Depth (Inches)
- Soil Moisture Holding Capacity (In/In)
- Management Allowed Depletion (%)

15	16	17	18	19	20	21	22	23	24	25	26	27	28
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

- Station Number
- Station Flow Rate (gpm)
- Landscape Coefficient For Station
- Sprinkler Precipitation Rate (In/Hr)
- Irrigation Station Efficiency (%)
- Effective Root Zone Depth (Inches)
- Soil Moisture Holding Capacity (In/In)
- Management Allowed Depletion (%)

29	30	31	32	33	34	35	36	37	38	39	40	41	42
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%	65%
0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%

ET-Based Irrigation Schedule, Mature Landscape

Stations # 1,3,6,7,9,10

Calculated Data

- Daily Reference ET (ET_d)
- Root Zone Working Storage (Inches)
- Monthly Plant Water Requirement (In)
- Monthly Irrigation Water Requirement (In)
- Effective Precipitation Rate (In/Hr)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
0.32	0.38	0.65	0.92	1.02	1.06	0.89	0.84	0.66	0.58	0.36	0.31
0.35	0.42	0.72	1.02	1.13	1.18	0.99	0.93	0.73	0.64	0.40	0.34
3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60

ET-Based Irrigation Schedule

- Irrigation Event Frequency (Days)
- Irrigation Days Per 30 Day Period (est.)
- Skip Days (Days Between Irrigations)
- Total Minutes Per Irrigation Day

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
23	19	11	8	7	7	8	9	11	12	20	24
1	2	3	4	4	4	4	3	3	2	1	1
22	18	10	7	6	6	7	8	10	11	19	23
4	4	4	4	4	4	4	4	4	4	4	4

Establishment Schedule

- Desired Irrigation Days Per Week (enter)
- Total Minutes Per Irrigation Day
- Net Irrigation Applied (Inches)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	2	2	3	3	3	3	2	2	1	1
1	1	1	2	1	1	1	1	1	1	1	1
0.06	0.06	0.06	0.12	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06

ET-Based Irrigation Schedule, Mature Landscape

Stations # 2,4

Calculated Data

- Daily Reference ET (ET_d)
- Root Zone Working Storage (Inches)
- Monthly Plant Water Requirement (In)
- Monthly Irrigation Water Requirement (In)
- Effective Precipitation Rate (In/Hr)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
0.26	0.31	0.53	0.75	0.83	0.87	0.73	0.69	0.54	0.47	0.29	0.25
0.29	0.34	0.59	0.84	0.93	0.96	0.81	0.76	0.60	0.53	0.32	0.28
0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72

ET-Based Irrigation Schedule

- Irrigation Event Frequency (Days)
- Irrigation Days Per 30 Day Period (est.)
- Skip Days (Days Between Irrigations)
- Total Minutes Per Irrigation Day

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
28	23	14	10	9	8	10	10	13	15	25	29
1	1	2	3	3	4	3	3	2	2	1	1
27	22	13	9	8	7	9	9	12	14	24	28
20	20	21	21	21	19	20	19	19	20	20	20

Establishment Schedule

- Desired Irrigation Days Per Week (enter)
- Total Minutes Per Irrigation Day
- Net Irrigation Applied (Inches)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	2	2	3	3	3	3	2	2	1	1
5	6	5	7	5	6	5	4	5	5	6	5
0.06	0.07	0.06	0.08	0.06	0.07	0.06	0.05	0.06	0.06	0.07	0.06

ET-Based Irrigation Schedule, Mature Landscape

Stations # 5,13

Calculated Data

- Daily Reference ET (ET_d)
- Root Zone Working Storage (Inches)
- Monthly Plant Water Requirement (In)
- Monthly Irrigation Water Requirement (In)
- Effective Precipitation Rate (In/Hr)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
0.23	0.27	0.47	0.67	0.74	0.77	0.64	0.61	0.48	0.42	0.26	0.22
0.26	0.30	0.53	0.74	0.82	0.86	0.72	0.68	0.53	0.47	0.29	0.25
0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88

ET-Based Irrigation Schedule

- Irrigation Event Frequency (Days)
- Irrigation Days Per 30 Day Period (est.)
- Skip Days (Days Between Irrigations)
- Total Minutes Per Irrigation Day

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
31	26	15	11	10	9	11	12	15	17	28	32
1	1	2	3	3	3	3	3	2	2	1	1
30	25	14	10	9	8	10	11	14	16	27	31
16	16	16	17	17	16	16	17	16	16	16	16

Establishment Schedule

- Desired Irrigation Days Per Week (enter)
- Total Minutes Per Irrigation Day
- Net Irrigation Applied (Inches)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	2	2	3	3	3	3	2	2	1	1
4	4	4	5	4	4	3	3	4	3	4	4
0.06	0.06	0.06	0.07	0.06	0.06	0.04	0.04	0.06	0.04	0.06	0.06

ET-Based Irrigation Schedule, Mature Landscape

Stations # 8,11,12

Calculated Data

- Daily Reference ET (ET_d)
- Root Zone Working Storage (Inches)
- Monthly Plant Water Requirement (In)
- Monthly Irrigation Water Requirement (In)
- Effective Precipitation Rate (In/Hr)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.13	0.10	0.09	0.05	0.05
0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
1.44	1.71	2.96	4.19	4.63	4.81	4.03	3.81	2.98	2.63	1.62	1.39
1.60	1.90	3.29	4.66	5.14	5.34	4.48	4.23	3.31	2.92	1.80	1.54
0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72

ET-Based Irrigation Schedule

- Irrigation Event Frequency (Days)
- Irrigation Days Per 30 Day Period (est.)
- Skip Days (Days Between Irrigations)
- Total Minutes Per Irrigation Day

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5	4	2	2	2	1	2	2	2	3	4	5
6	7	12	17	19	20	17	16	12	11	7	6
4	3	1	1	1	0	1	1	1	2	3	4
20	19	16	23	26	13	22	21	17	22	18	19

Establishment Schedule

- Desired Irrigation Days Per Week (enter)
- Total Minutes Per Irrigation Day
- Net Irrigation Applied (Inches)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	2	2	3	3	3	3	2	2	1	1
28	33	28	40	30	30	26	25	30	26	32	27
0.34	0.40	0.34	0.48	0.36	0.36	0.31	0.30	0.36	0.31	0.38	0.32

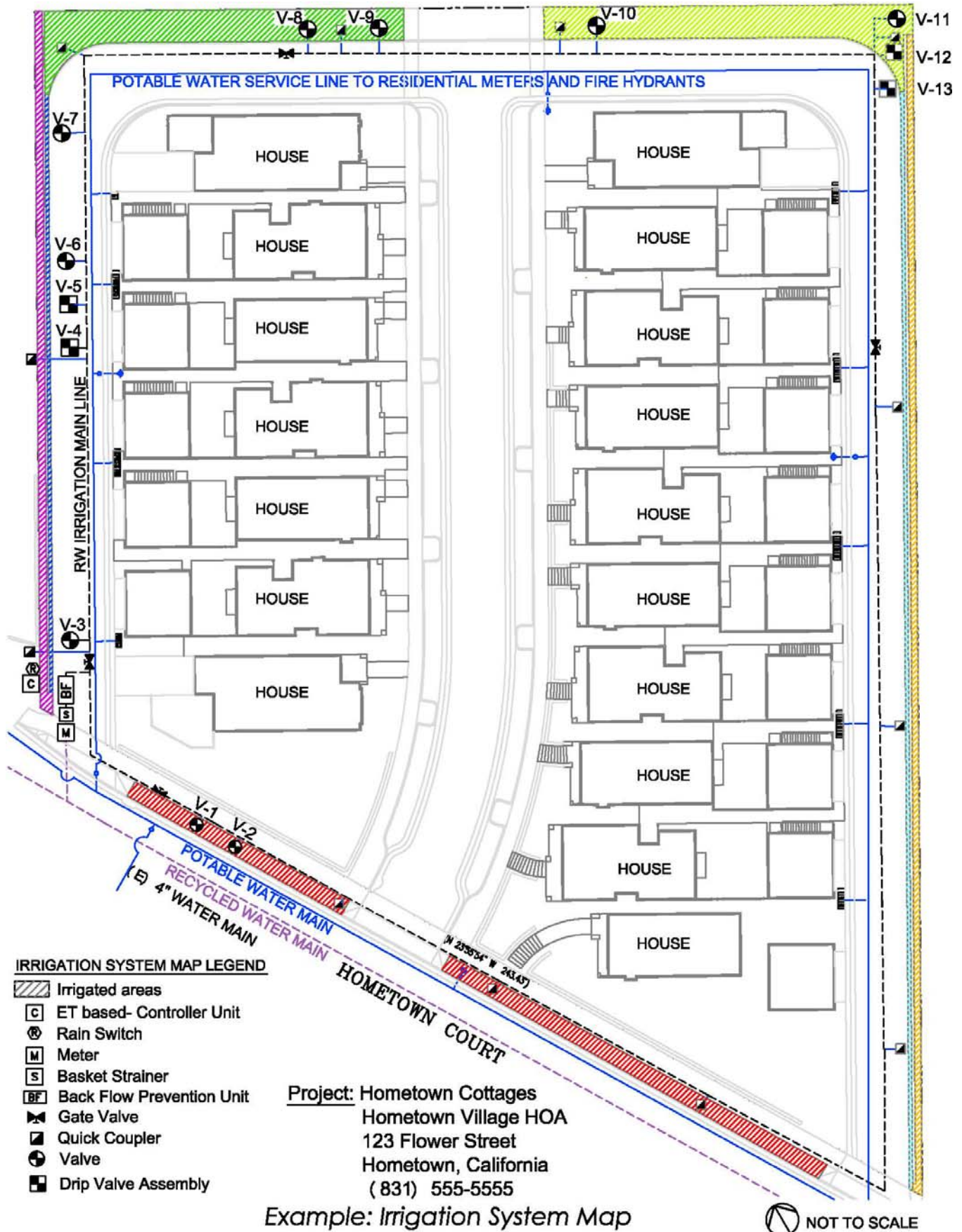
APPENDIX 38

EXAMPLE CALCULATION OF ESTIMATED APPLIED WATER USE (Derived from the irrigation schedule for the mature landscape)

Hometown Cottages, Common Area Landscaping													
Estimated Applied Water Use, Stations #1-13													
Monthly/Annual Totals Based on ET Adjusted Schedule, Mature Landscape													
Station #	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	42	50	87	123	136	141	118	112	87	77	48	41	
Annual Total in Gallons			1062	Annual Total in Cu-Ft.				142	Annual Total in Units				1.4
2	65	77	140	198	219	206	181	163	127	118	73	63	
Annual Total in Gallons			1629	Annual Total in Cu-Ft.				218	Annual Total in Units				2.2
3	21	25	43	61	68	71	59	56	44	39	24	20	
Annual Total in Gallons			531	Annual Total in Cu-Ft.				71	Annual Total in Units				0.7
4	97	115	210	297	328	308	272	244	191	178	109	94	
Annual Total in Gallons			2444	Annual Total in Cu-Ft.				327	Annual Total in Units				3.3
5	46	55	95	142	157	154	129	130	95	84	52	44	
Annual Total in Gallons			1184	Annual Total in Cu-Ft.				158	Annual Total in Units				1.6
6	32	38	65	92	102	106	89	84	66	58	36	31	
Annual Total in Gallons			796	Annual Total in Cu-Ft.				106	Annual Total in Units				1.1
7	26	31	54	77	85	88	74	70	55	48	30	25	
Annual Total in Gallons			664	Annual Total in Cu-Ft.				89	Annual Total in Units				0.9
8	900	1015	1480	3012	3762	1954	2771	2500	1583	1808	911	825	
Annual Total in Gallons			22522	Annual Total in Cu-Ft.				3011	Annual Total in Units				30.1
9	26	31	54	77	85	88	74	70	55	48	30	25	
Annual Total in Gallons			664	Annual Total in Cu-Ft.				89	Annual Total in Units				0.9
10	32	38	65	92	102	106	89	84	66	58	36	31	
Annual Total in Gallons			796	Annual Total in Cu-Ft.				106	Annual Total in Units				1.1
11	672	758	1105	2249	2809	1459	2069	1867	1182	1350	680	616	
Annual Total in Gallons			16816	Annual Total in Cu-Ft.				2248	Annual Total in Units				22.5
12	456	514	750	1526	1906	990	1404	1267	802	916	462	418	
Annual Total in Gallons			11411	Annual Total in Cu-Ft.				1526	Annual Total in Units				15.3
13	81	97	167	252	278	272	228	229	168	149	92	79	
Annual Total in Gallons			2091	Annual Total in Cu-Ft.				280	Annual Total in Units				2.8
Total Stations # 1-24			62610	Gallons	Total Stations # 1-24			8370	Cu-Ft.	Units			83.7

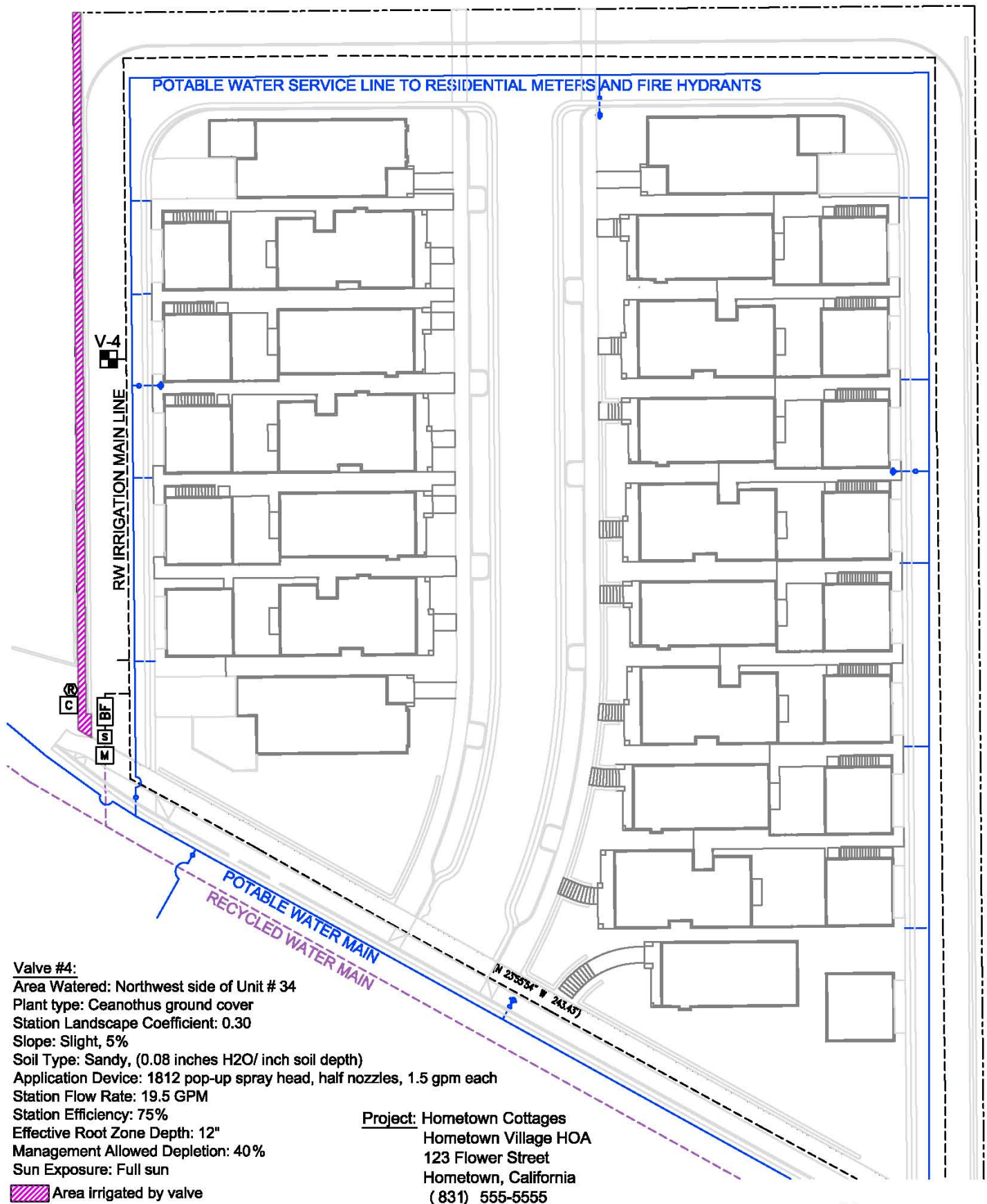
APPENDIX 39

EXAMPLE IRRIGATION SYSTEM MAP



APPENDIX 40

EXAMPLE VALVE SITE MAP



Example: Individual station map

NOT TO SCALE

APPENDIX 41

EXAMPLE LANDSCAPE AND IRRIGATION MAINTENANCE SCHEDULE

Hometown Cottages Home Owners Association

Landscape and Irrigation Maintenance Schedules

Landscape Maintenance:

Task	Bi-Weekly	Weekly	Quarterly	Bi-Annually	Annually	Every Five Years
Lawn Mowing	X					
Lawn Aeration/Dethatching				X		
Lawn Fertilization			X			
Native Lawn Mowing				X		
Native Lawn Fertilization				X		
Native Lawn Aeration/Dethatching					X	
Plant Trimming					X	
Plant Fertilization			X			
Clean Roadways/Walkways/Paths		X				
Plant Annual Flowers			X			
Maintain Annual Flowers	X					
Fertilize Annual Flowers			X			
Tree Trimming					X	
Tree Fertilization					X	

Lawn Areas:

- All lawn areas are to be mowed frequently or as needed to maintain a height of 3 1/2" to 4 1/2". Clippings are to be collected and borders neatly edged vertically. Grass blades around sprinkler heads and landscape lighting are to be mechanically trimmed only as needed to eliminate any blockage of sprinkler spray pattern. Grass is to be removed from around the base of trees creating a tree well 12" in radius. Trim around planters and along walkways.
- Maintain lawn areas in a weed-free condition. Chemically control broadleaf weeds on an as needed basis.
- Aerate all lawn areas annually between September 01 and October 15th of each year. Follow up immediately with de-thatching. Aeration shall be conducted by removing

½" by 4" cores at not more than 6" spacing. Cores shall be broken down during de-thatching and excess debris removed by hand. Notify the Association Manager when work is to take place.

- Fertilize at a rate of 1 lb. of Nitrogen per 1,000 square feet on the following schedule:
 - October: 16 – 4 – 8 Complete
 - January: 16 – 4 – 8
 - April: 40 – 6 – 00 (Urea)
 - July: 40 – 6 – 00 (Urea)
- A broad spectrum fungicide shall be applied to all turf areas, as necessary, at the preventative rate i.e.: Subdue 2%.
- Control pests, rodents and snails, as needed, to provide a healthy environment for plants and public.

Lawn Irrigation:

- To maintain proper growth rate and optimum appearance, water according to the Et-based irrigation schedule. Adjust the base schedule to apply water deeply throughout the complete soil profile, with at least one day between irrigation cycles. Spot check soil moisture with a soil sampling probe weekly.
- Maintain an irrigation log, recording all water usage on a weekly basis. A copy of these readings is to be given to the Association Manager on a weekly basis.

"Native" Fescue Areas:

- Native fescue will be dethatched and aerated annually in the fall.
- Native fescue will be cut and fertilized during the spring and late fall of each year. All trimmings are to be removed from the site.
- Seed heads will be knocked down on a continual basis as needed.
- Maintain native fescue areas in a weed-free condition. Chemically control broadleaf weeds on an as needed basis.
- Irrigate according to the Et-based irrigation schedule to maintain proper growth rate and optimum appearance. Adjust scheduling to apply water deeply throughout the complete soil profile, with at least five days between irrigation cycles. Spot check soil moisture weekly with a soil sampling probe.

Groundcover Areas:

- All weeds shall be removed as they appear. Additional weed control shall be initiated as necessary to maintain a weed-free condition.
- Ground covers shall be fertilized every (90) days. Application to be 1lb. of actual Nitrogen per 1,000 square feet using a 16-16-16 formula material.
- Trim and edge as necessary to restrict growth from encroaching on sidewalks, sprinkler heads, or other adjacent areas.
- Irrigate as necessary to maintain adequate growth and reasonable appearance.
- Spot check soil moisture with a soil sampling probe weekly.
- Control pests, including rodents and snails, to provide a healthy environment for plants and public.

Annual Flowers:

- Annual flowers will be planted and maintained in designated areas as needed but at least three times annually.
- Flower beds will be cultivated once a week to reduce weeds and improve water infiltration.
- An application of 3-12-21 fertilizer will be applied to all annuals on (90) day intervals.
- Annual beds will be maintained weekly.

Trees:

All trimming of trees on property is to be discussed with Association Management prior to commencement of work and may require guidance and/or skills of a certified arborist.

- Trim, shape and selectively prune to maintain a safe, reasonable appearance.
- Thinning and/or trimming of Cypress and Pine trees are to be completed during late January or February of each year.
- Control pest and diseases as needed. Report occurrences to the Association Manager.
- Tag and report pitch canker or bark beetle infestations to the Association Manager immediately. Removal of infested plant debris will be cleared with the Management.
- Tag and report any trees that show stress or weakness or trees that are in danger of uprooting patios or endangering buildings to the Association Manager as soon as they are detected.
- Remove all dead, diseased or damaged branches back to a side branch.
- Stake and support trees when necessary. Check all trees and remove unnecessary tree guy wires at least annually.
- All guys and ties shall be checked frequently to avoid girdling.
- Maintain watering basins on young trees through the second year of establishment.
- Fertilized trees each April with deep root feeding and a 3-4 month, soluble, 10-15-15 slow release fertilizer at recommended rates for the individual planting.
- Irrigate as required to maintain adequate growth and appearance.

Shrubs:

- Thin, shape, and head back all shrubs only as needed, yet at least annually.
- All shrubs with leaf size exceeding 2 inches shall be selectively pruned with hand clippers.
- Maximize plant size. Encourage shrubs to completely fill planting beds. Shrubs shall have a natural branching habit and form at all times.
- Maintain shrubs at entrances to a height that will ensure safe vehicular access and view.
- Prune at proper time of year for each species to promote new growth and flowering.

Roadways, Patios, Walkways, and Paths:

- All roadways and roadside drainage culverts are to be cleaned of sand, weeds, and debris weekly.
- Patios and walkways are to be cleaned of debris each Friday. Spot stains are to be reported to the Association Manager immediately.

- Garden paths are to be raked of debris weekly. Preventative weed control shall be applied as needed and at least annually.
- Damaged roadside lighting and pathway light standards shall be reported to the Association Manager immediately.

Irrigation System Maintenance:

Task	Bi-Weekly	Weekly	Monthly	Bi-Annually	Annually	Every Five Years
Irrigation System Audit						X
Recycled Water Users Plan Review					X	
Backflow Device Testing					X	
Drought Planning Report					X	
Irrigation Timers/Rain Sensors Checked			X			
Recycled Water Signage Check			X			
Irrigation System Check			X		X	
Pressure Reading			X			
Meter Reading		X				
Clean Basket Strainers		X				

It is the responsibility of the landscaping crew to maintain the complete sprinkler and irrigation systems in an operable condition at all times. This includes, but is not limited to, pressure regulators, basket strainers, backflow devices, pump systems, main pressure lines, lateral lines, clocks, valves, drip emitters, and sprinkler heads.

- Annually, during the month of February, a complete Irrigation System Audit shall be performed. Upon completion of any irrigation system upgrade or installation, an irrigation audit of those zones modified shall be performed. Performance results of all Irrigation System Audits shall to be submitted to the Association Manager. Every five years, the results of the Irrigation System Audit shall be provided to the Marina Coast Water District, Water Conservation Department. Irrigation audits must to be performed and submitted to the water district by March 1st, every 5 years. The next scheduled Irrigation System Audit is due March 1st, 2008.
- At the same time as the Irrigation System Audit, a detailed Irrigation System Check shall be performed. A report on all necessary and suggested repairs shall be submitted to the HOA Manager by March 1st.

- All systems are to be operationally checked monthly by running each zone a minimum of two minutes. The results will be recorded in an irrigation log to be maintained in the Association office.
- Keep valves in adjustment to prevent excessive flow velocity, slow or rapid closure, excessive pressure, and water hammer.
- Check and record the water supply static pressure monthly. Differences in the sprinkler systems design operating pressure and actual available water pressure can affect operation and efficiency.
- Annual backflow device certification tests for all devices shall be completed in February of each year, and the results submitted to the HOA manager by March 1st. Monthly, the devices shall be visually checked for failure, and results submitted to the HOA Manager.
- Water meter readings are to be taken weekly and recorded in a water usage log be maintained in the HOA office. Leak detection shall be a part of this procedure. A record of monthly units through the common irrigation meter shall be kept to summarize water units at the end of the year. A comparison from actual water usage to water budget shall be performed monthly. Any leaks detected through the common meter shall be reported to the HOA manager immediately.
- Check all irrigation control clocks after power outages and reset as necessary. In addition, check all clocks once a month to ensure that timers are still programmed correctly and are receiving ET data. Adjust water application settings of timers only if automatic ET irrigation controller shows error. Verify appropriate operation duration and frequency and start-time. Irrigate only at night between 6pm and 6 am. Reprogram the ET-based automatic controllers two months after the establishment period and of any new planting installations. Refer to the Mature Landscape Irrigation Schedule.
- Monthly, make sure a rain sensor is still properly installed, set at one-fourth of an inch or less, and not sheltered by walls, shrubs or other plants. All irrigation systems must be turned off during periods of rain.
- Repair and adjust all sprinkler heads to maintain proper coverage on an as needed and ongoing basis. Adjust irrigation system components whenever irrigation water falls or runs onto hard surfaces such as sidewalks, streets or driveways.
- General plant health, due to under or over watering and vandalism to irrigation materials shall be reported monthly.
- Verify that sprinkler coverage is properly adjusted. Check the nozzle, arc, radius, level and attitude with respect to slope. Make sure all heads pop-up completely and fully retract when the water is turned off. Check for sprinklers blocked by grass, plants or other obstacles. If the spray is blocked, remove the obstacle or move the sprinkler head. Make sure sprinklers are vertical and flush with the soil grade.
- Check drip zone emitters for debris and assure proper operation.
- Clean out Y-filters of drip valve assemblies and flush drip lines, if excessive dirt or mineral deposits are noticed.
- Identify pipeline and valve leaks, and low head drainage problems. Make repairs immediately. Signs of leakage include green and soggy areas, often around spray heads and hose bibs.
- Repair or replace broken hardware and pipes with matching, original equipment. Refer to pipe size in irrigation plan, to maintain correct design pressure after repairs. Test all repairs.

- Winterize sprinkler systems if freezing is to be expected by removing all the water from the irrigation system in order to prevent cracked pipes, broken heads and other problems.
- Identify your priorities during water-limited situations such as various stages of drought. These priorities shall be summarized and reported to the Association Manager annually.

Additional Irrigation System Maintenance for Irrigation Systems Using Recycled Water:

- The Recycled Water Management Plan, supplied by the Association, shall be reviewed annually by each staff member, and suggested edits submitted to the Association Manager. At all times, the Recycled Water Management Plan shall be posted in the Maintenance Facilities Shop and available to all landscape maintenance personnel.
- Ensure that proper recycled water warning site signage and individual component warning tags are in place monthly.
- A basket strainer must be installed downstream from the irrigation water meter. The filter shall be checked weekly and cleaned at least monthly to remove debris. Any puddles of standing recycled water caused from flushing filter units, irrigation lines or irrigation leaks shall be removed or monitored until infiltration into the soil has occurred.
- Ensure proper valve box labeling and verify that all purple valve box covers are bolted down.
- All site inspection reports outlined in the Recycled Water Management Plan must be prepared and submitted to the Association Manager by March 1st each year.

APPENDIX 42

SOIL ANALYSIS AND SOIL AMENDMENT RECOMMENDATION

SOIL ANALYSIS AND SOIL AMENDMENT RECOMMENDATION

Hometown Cottages Home Owners Association

The sample received was described as representing site soil to 6 inches in depth from an area scheduled for landscaping with trees and shrubs.

ANALYSIS RESULTS

Particle size data show a loam classification by USDA standards. No significant problems are suggested by the distribution of particle sizes. Organic content is very low and the estimated infiltration rate is 0.29 inch per hour. Loosening the soil and improving the organic content will help improve porosity.

The reaction value is slightly alkaline and suitable for most plants though slightly acidic is preferred. Lime content is favorably absent indicating the pH will adjust readily to a more appropriate range. Salinity, sodium and boron are safely low and the SAR value shows soluble sodium adequately balanced by calcium and magnesium.

Nutritional data reveal low nitrogen, phosphorous, potassium and sulfate. Calcium is sufficient with magnesium ample.

RECOMMENDATIONS

AMENDING SOILS

To improve drainage of the root zone, first loosen any undisturbed or compacted area to a 10-inch depth. The following material should then be evenly spread and thoroughly incorporated with 6-inches of soil to form a homogeneously blended layer:

Amount / 1000 Square Feet

6 cubic yards	Nitrogen Stabilized Organic Amendment
20 pounds	6-20-20 Commercial Fertilizer
5 pounds	Potassium Sulfate (0-0-50)
10 pounds	Soil Sulfur

The above organic amendment rate is based on an organic content of 270 pounds per cubic yard and may be adjusted based on the amendment selected.

To prepare backfill:

- Excavate planting pits at least twice as wide as the diameter of the rootball.
- Soil immediately below the root ball should be left undisturbed to provide support but the sides and the bottom around the sides should be cultivated to improve porosity.
- The top of the rootball should be at or slightly above final grade.
- The top 12-inches of backfill around the sides of the rootball of trees and shrubs may consist of the above amended soil or may be prepared as follows:

3 parts	Pulverized Site Soil
1 part	Nitrogen Stabilized Organic Amendment

Blended with 1 pound 6-20-20, 1/4 pound potassium sulfate, and 1/2 pound soil sulfur per cubic yard backfill.

- Backfill below 12 inches required for 24-inch box or larger material **should not contain** the organic matter and should *replace* the 1/2 pound soil sulfur with 1 pound iron sulfate* per cubic yard backfill.

MULCHING

Ideally a weed and turf free zone should be maintained just beyond the diameter of the planting hole. A 3-4 inch deep layer of coarse mulch can be placed around the tree or shrub. **Mulch should be kept a minimum 4 inches from the trunk.**

IRRIGATION

Irrigation of new plantings should take into consideration the differing texture of the root ball substrate and surrounding soil matrix to maintain adequate moisture during this critical period of establishment.

**Apply the iron sulfate cautiously* avoiding contact with moist concrete since staining can result.

MAINTENANCE

General maintenance fertilization for new plantings may rely on nitrogen fertilization complemented by a complete fertilizer in the spring and fall. During the winter, plants in need of nitrogen to maintain suitable color may respond best to calcium nitrate (15.5-0-0) applied at a rate of 6 pounds per 1000 square feet. A spring application of 16-6-8 at a 6-pound rate and a fall application of 21-7-14 at a 5-pound rate should insure continuing adequate phosphorous and potassium supply. During the summer, ammonium sulfate (21-0-0) is a good source of nitrogen and should be applied at a 5-pound rate. **Larger tree plantings will require a less aggressive fertilizer regime and applications at half the given rate will be sufficient.** The first application of calcium nitrate should be made 30 days after planting is complete with retreatment scheduled at 45 to 60 day intervals. Once the plants have established, the frequency of fertilization may be decreased depending on color and rate of growth desired.

Additional mulch should be applied annually replacing any mulch lost through decomposition. Maintaining a mulch level of 3-4 inches depth will aid erosion control, reduce unwanted weed growth and prevent water loss through evaporation from the soil surface.

Shrub areas should receive treatment with granular pre-emergent herbicide to reduce weed growth.

LANDSCAPE PREPLANT

COMPREHENSIVE SOIL ANALYSIS
(AO5-1, AO5-2 or AO5-3)

Sam ple #	Half Sat%/ TEC	pH/ Qual Lime	ECe	-----Parts Per Million Parts Dry Soil-----										Organic % dry wt.	Sample Description & Log Number
				NO3 N	NH4 N	PO4 P	K	Ca	Mg	Cu	Zn	Mn	Fe		
1	18	7.5	0.4	3	6	5	60	2340	986					0.2	
	201	None		0.2		0.2	0.3	0.9	2.8						

Sam ple #	-----Saturation Extract Values-----							---Gravel---		Percent of Sample Passing 2 mm Screen					USDA Soil Classification
	Ca me/l	Mg me/l	Na me/l	K me/l	B ppm	SO4 me/l	SAR	Coarse 5-12	Fine 2-5	Very Coarse 1-2	Med. to Coarse 0.5-1	V. Fine 0.05-.5	Silt .002-.05	Clay 0-.002	
1	1.6	1.4	1.5	0.1	0.03	0.6	1.2	0.3	2.7	5.1	9.3	37.4	32.1	16.1	Loam

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed.
SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m), Boron(B), Sulfate(SO4), Sodium(Na) and SAR. TEC(listed below Half Sat) = Est.Total Exchangeable Cations(meq/kg). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters.

APPENDIX 43

CERTIFICATE OF SUBSTANTIAL COMPLETION FOR LANDSCAPE



Marina Coast Water District

11 Reservation Road, Marina, Ca 93933

831-384-6131

Water Conservation Department

831-883-5905

Fax 831-384-0197

Certificate of Substantial Completion

Project Name: _____

Post-Installation Inspection: (Check indicating substantial completion)

- | | |
|--|---|
| <input type="checkbox"/> A. Plants installed as specified | <input type="checkbox"/> B. Irrigation system installed as designed |
| <input type="checkbox"/> C. Irrigation controller adjusted | <input type="checkbox"/> D. Irrigation system operation checked |
| <input type="checkbox"/> E. A copy of this certification has been provided to the Project's owner/manager. | |

Please note below or on an attached sheet any deviations from the approved plans.

I/we certify that work has been installed in accordance with the contract documents.

_____ Contractor Printed Name	_____ State License Number	_____ Date	_____ Signature
_____ Address			_____ Phone Number

I/we certify that based upon periodic site observations, the landscape planting and irrigation installation work has been substantially completed and that work conforms to the MCWD approved plans and specifications.

_____ Landscape Architect Printed Name	_____ State License Number	_____ Date	_____ Signature
_____ Address			_____ Phone Number

I certify that I have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents. I understand that if there is a requirement to provide public information on water conservation, I must provide that information to the new residents. I agree to comply with the MCWD Water Conservation Ordinance and understand that water use at this site is to be managed below the Maximum Applied Water Allowance (Water Budget) defined for the project.

_____ Owner/Developer Printed Name	_____ Date	_____ Signature
_____ Address		_____ Phone Number

APPENDIX 44

EXAMPLE WATER CONSERVATION PUBLIC INFORMATION PLAN

HOME TOWN DEVELOPERS, L.L.C. 123 Hometown Blvd., Hometown, CA 93933

Martina Coast Water District

11 Reservation Road

Marina, CA 93933

RE.: Actions taken to provide public information on water conservation.

To Whom It May Concern:

Following actions will be taken to provide public information on water conservation:

- The home on flag lot number 8 will demonstrate a model water-wise landscape installation.
- All common and residential lot irrigation systems feature ET-irrigation controllers and automatic rain shutoff devices. Manufacturer owner's manual and brochures describing how these units conserve water are included in the new homeowner's welcoming Package. The first year subscription fee required for wireless access to the daily weather data will be paid for by Home Town Developer, L.L.C. for each residence and the common landscaped area.
- The new homeowner's welcoming package includes a cover letter from Home Town developers, L.L.C. to the new home owner (see example letter attached), the Water-wise Landscape Design and Planting Guide, the Marina Coast Water District, Garden Watering Schedule, the Monterey County brochure: Plant Choices for the Central Coast and the Homeowners Guide to Efficient Water Use.
- Home Town Developers, L.L.C. donated \$5,000 dollars to design and build an interpretive sign about native drought tolerant plant material installed for the Hometown's library water-wise demonstration garden.

Please find attached a sample of the letter we are including in the New Homeowner's Welcoming Package.

We are looking to work with you in the future.

Best regards,



Mark Builder - Vice President Home Town Developers, LLC

HOME TOWN DEVELOPERS, L.L.C. 123 Hometown Blvd., Hometown, CA 93933

Dear Home Owner:

The landscape of your new home was designed to conserve water. A carefully selected arrangement of low maintenance, colorful, yet drought tolerant plant material replaces a typical thirsty front lawn. A three inch layer of mulch covers your newly installed landscape. The mulch keeps unwanted weed seeds from germinating and helps to retain moisture in the soil. Mulch will break down and it is recommended that you add additional mulch annually, until the anticipated density of mature plant material is reached.

Your front yard is drip irrigated, which conserves large amount of water because it irrigates only the root zone of the plants, eliminates unnecessary run-off and watering of unwanted weeds. There is little or no loss of water due to evaporation or overspray onto pavement.

Drip irrigation will keep your water bill low, but does require some maintenance over the years. Drippers may clog up and need to be replaced. You are advised to check your system about every three months. Look for obvious leaks and check the overall health of the plant material. Replace clogged up drippers, if necessary.

Your irrigation controller is equipped with a rain shut-off device, which will automatically shut off irrigation during the rainy season and save you approximately 20% on your annual water bill. This device is mounted to your roof and needs an annual check to make sure it is still mounted properly and free of obstruction.

Your irrigation schedule is automatically calculated by a state of the art ET controller (see additional information in this package). These controllers conserve approximately another 20% on your annual water bill and are virtually maintenance free. The ET controller automatically considers establishing periods and maturity level of plant material and climate changes of the seasons for you. Watering times are changed accordingly via program, which results in healthier plant material, because the plants will not get under or over watered. There is

an additional station on the controller available to be programmed to irrigate your backyard. Enclosed with this package you find the owner's manual for your ET irrigation controller and all necessary information you need to program the additional station to irrigate the backyard when you are ready. The customer service for the manufacturer of your controller can also help you if you have additional questions. The number can be found in the owner's manual.

Enclosed are the following publications to aid you in designing your own water-wise, private, backyard garden space:

- Water-wise Landscape Design and Planting Guide
- Marina Coast Water District, Garden Watering Schedule
- Plant Choices for the Central Coast
- Homeowners Guide to Efficient Water Use

By maintaining your "un-thirsty" landscape, you help conserve our most valuable, non-renewable resource of water, while keeping your water bill low.

Hometown Cottages subdivision also provides a model home that has a water-wise demonstration landscape installed. You are invited to visit the model home and get inspired to design your own backyard with water conservation in mind. Other water-wise installations to visit are nearby at Hometown Park and in front of the public library.

For further assistance on conserving water, you may contact the Marina Coast Water District (831) 384-6131 www.mcwd.org, the Water Awareness Committee of Monterey County (831) 646-4656 www.waterawareness.org, or the Monterey Bay Green Gardener Association www.green-gardener.org.

We hope you will enjoy your new home and landscape.

Best regards,



Mark Builder - Vice President Home Town Developers, LLC

APPENDIX 45

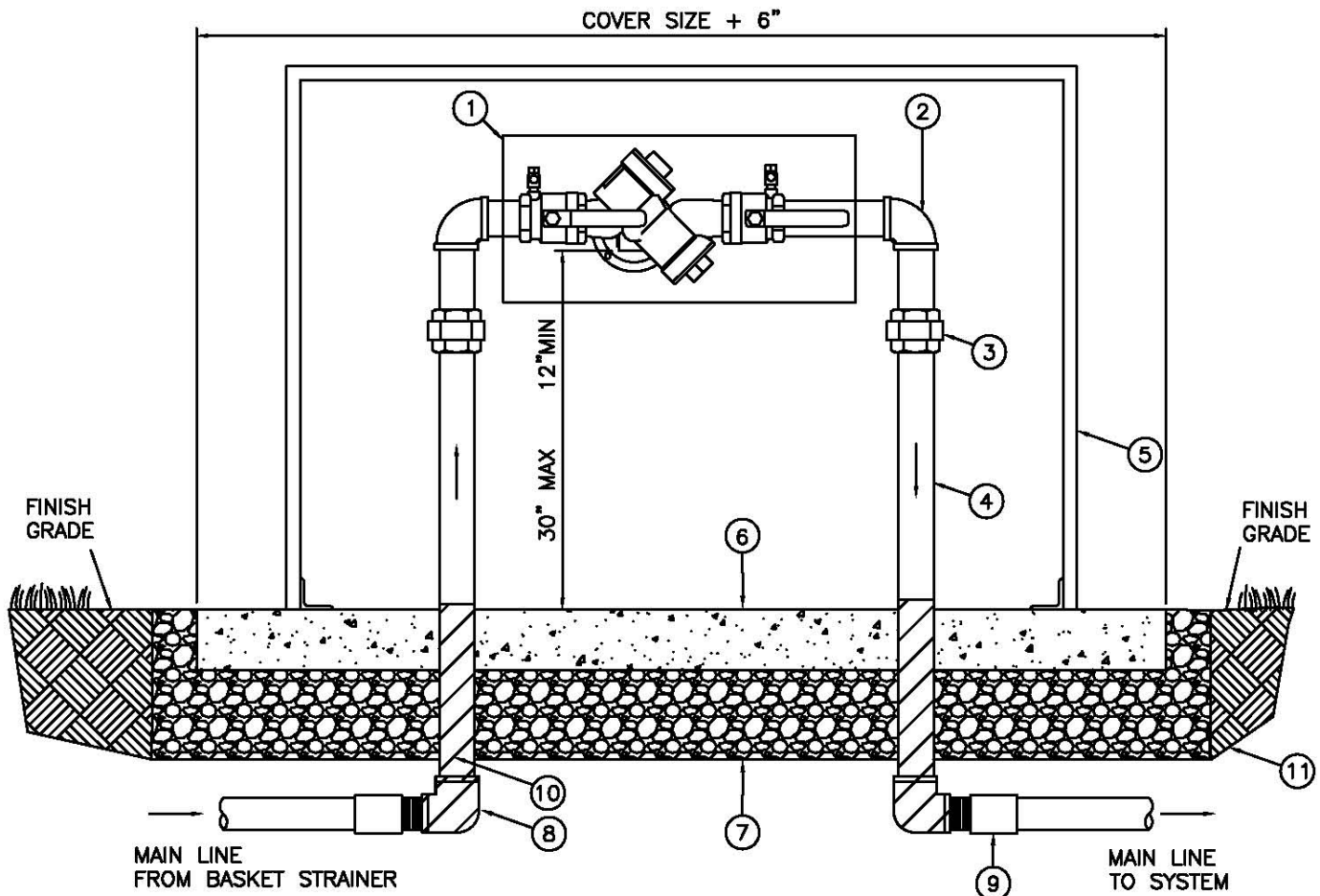
EXAMPLE BACK FLOW PREVENTION UNIT

MATERIALS

- ① APPROVED BACKFLOW PREVENTION UNIT, PER SECTION 15112, MCWD STANDARD SPECIFICATIONS
- ② BRASS ELLS—TYP.
- ③ BRASS UNIONS AT EACH SIDE
- ④ BRASS PIPE
- ⑤ LOCKING BACK FLOW COVER
- ⑥ CONCRETE SPLASH BLOCK 4" THICK
- ⑦ GRAVEL 6" THICK
- ⑧ BRASS FEMALE THREADED ELBOW
- ⑨ SCH 80 MALE ADAPTER
- ⑩ WRAP BRASS PIPING BELOW GRADE WITH UPC 10 MIL. PIPE WRAP
- ⑪ UNDISTURBED OR COMPACTED SUBGRADE.

NOTES

1. BACK FLOW DEVICE SHALL BE TESTED ANNUALLY BY CERTIFIED PERSONNEL.
2. APPROVED BACK FLOW DEVICE SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE BASKET STRAINER, METER AND POINT OF CONNECTION.
3. EXAMPLE SHOWN MEETS M.C.W.D. AND C.H.D.S. REQUIREMENTS. ACTUAL LAYOUT SHALL BE BY LANDSCAPE DESIGNER.



APPROVED BY
DISTRICT
ENGINEER

DATE
10/07



MARINA COAST WATER DISTRICT

EXAMPLE
BACK FLOW PREVENTION UNIT

EXAMPLE

L-3

SHEET 1 OF 1

APPENDIX 46

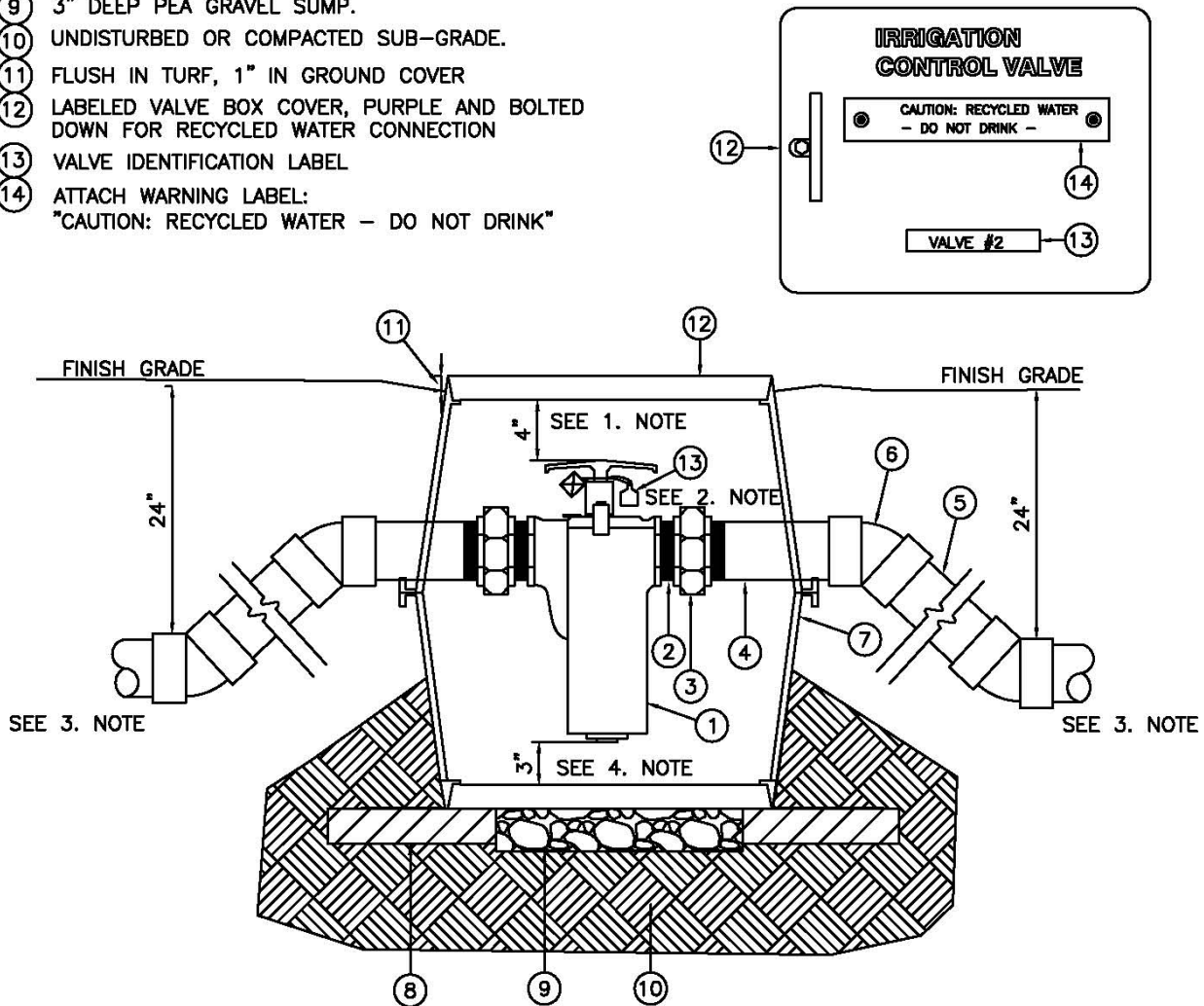
EXAMPLE BASKET STRAINER

MATERIALS

- ① BASKET STRAINER
- ② PVC SCH 80 OR BRASS NIPPLE
- ③ PVC SCH 80 OR BRASS UNION-TYP. WITH REDUCTION BUSHINGS AS REQUIRED
- ④ PVC SCH 80 NIPPLE
- ⑤ PVC SCH 40 OR PVC CLASS 315 MAINLINE AS REQUIRED-TYP.
- ⑥ PVC SCH 80 45 DEGREE ELLIS-TYP. 4 PLACES
- ⑦ JUMBO VALVE BOX-26"X20" STACKED BACK TO BACK TO PROVIDE ADEQUATE ROOM TO SERVICE EQUIPMENT
- ⑧ BRICK SUPPORT- 1 EA CORNER
- ⑨ 3" DEEP PEA GRAVEL SUMP.
- ⑩ UNDISTURBED OR COMPACTED SUB-GRADE.
- ⑪ FLUSH IN TURF, 1" IN GROUND COVER
- ⑫ LABELED VALVE BOX COVER, PURPLE AND BOLTED DOWN FOR RECYCLED WATER CONNECTION
- ⑬ VALVE IDENTIFICATION LABEL
- ⑭ ATTACH WARNING LABEL: "CAUTION: RECYCLED WATER - DO NOT DRINK"

NOTES

1. 4-45 DEGREE PVC SCH 80 ELBOW FITTINGS SHALL BE USED TO RAISE VALVE HANDLE TO WITHIN 4" OF FINISH GRADE.
2. ATTACH PURPLE RECYCLED WATER IDENTIFICATION TAGS AS REQUIRED ON RECLAIMED SYSTEMS.
3. PLACE PURPLE "CAUTION RECYCLED WATER BELOW" IDENTIFICATION TAPE ABOVE RECLAIMED WATER PIPING.
4. INSTALL WITHIN 2 JUMBO RECTANGULAR PLASTIC VALVE BOXES AS SHOWN TO PROVIDE CLEARANCES AS SHOWN.



APPROVED BY
DISTRICT
ENGINEER

DATE
10/07



MARINA COAST WATER DISTRICT

EXAMPLE
BASKET STRAINER

EXAMPLE

L-2

SHEET 1 OF 1