

U.S.A. NOTE
 IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO BE FAMILIAR WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL EXERCISE EXTREME CARE, AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR UTILITIES. THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OTHER SUB-CONTRACTORS FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE AGENCIES AND U.S.A. AT 1-800-642-2444 OR 1-800-221-2600 TO FIELD LOCATE ALL EXISTING UTILITIES.

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THESE DRAWINGS COMPLY WITH THE CRITERIA OF THE ORDINANCE. ORDINANCE REQUIREMENTS HAVE BEEN APPLIED FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN AND THE LANDSCAPE DESIGN PLAN.

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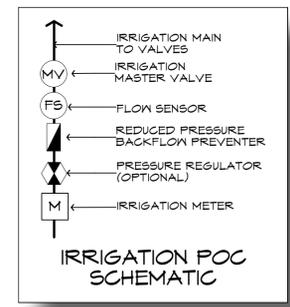
CONCEPT IRRIGATION PLAN
APARTMENTS

AVENUE 3111 STORAGE & APARTMENTS
 3111 SANTA ROSA AVENUE
 SANTA ROSA, CA

DATE: 10/11/21
 MLA JOB #: 2020-28
 SCALE: 1" = 20'
 DRAWN: DM

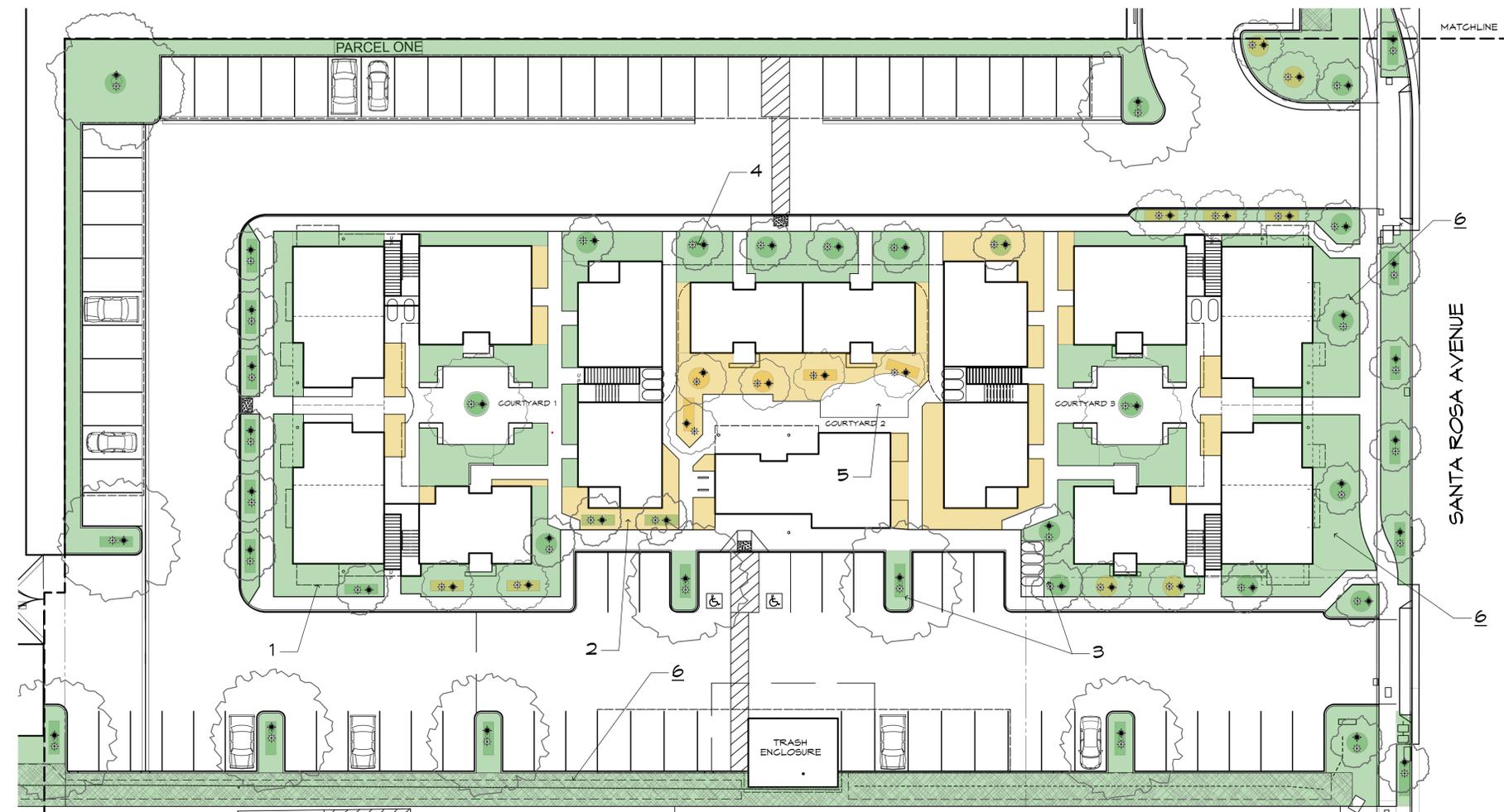
BIORETENTION AREAS
SUPPLEMENTAL TEMPORARY IRRIGATION

CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SUPPLEMENTAL IRRIGATION OF ALL BIO-RETENTION AREAS THROUGH THE SOD OR PLANT ESTABLISHMENT PERIOD. METHOD OF IRRIGATION APPLICATION IS DISCRETIONARY AND MAY INCLUDE HAND WATERING OR INSTALLATION OF A TEMPORARY, ABOVE GRADE OVERHEAD SPRAY CIRCUIT. ANY REPLACEMENT NECESSARY FOR LOSS OR DAMAGE TO SOD OR PLANTS DUE TO LACK OF WATER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT CONTRACTOR'S EXPENSE.



IRRIGATION NOTES

1. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE OF THE AREA TO BE IRRIGATED UNLESS OTHERWISE NOTED ON THE PLANS.
2. THE SPRINKLER SYSTEM DESIGN IS BASED ON THE MINIMUM STATIC PRESSURE OF 35 PSI AT THE VALVES AND THE MAXIMUM FLOW DEMAND SHOWN ON THE IRRIGATION DRAWINGS AT THE POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION OF THE IRRIGATION SYSTEM. IF THE WATER PRESSURE SHOWN ON THE DRAWINGS DIFFERS FROM THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
3. THE LOCATION OF THE CONTROLLER TO BE VERIFIED BY OWNER. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING ALL PROPOSED STATIONS TO THE CONTROLLER. CONTROLLER TO BE CONFIGURED TO OPERATE 4 STATIONS. CONTROLLER SHALL BE HUNTER IC-600-M WITH CM-600 EXPANSION MODULE.
4. ALL CONSTRUCTION IS TO BE PER THE LATEST EDITION OF THE UNIFORM BUILDING CODE.
5. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ROOT BARRIERS, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. INSTALL PIPING AND VALVES IN PLANTING AREAS WHERE POSSIBLE, AND LOCATE ELECTRIC CONTROL AND QUICK COUPLING VALVES IN GROUND COVER/SHRUB AREAS, 6" TO 12" AWAY FROM HARDSCAPE OR TURF AREA FOR EASY ACCESS.
6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND THROTTLING THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
7. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE THEMSELVES WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL EXERCISE EXTREME CARE, AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR UTILITIES. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE AGENCIES AND U.S.A. AT 1-800-642-2444 TO FIELD LOCATE ALL EXISTING UTILITIES.
8. FIELD ADJUSTMENTS MAY BE REQUIRED TO PROVIDE OPTIMUM OPERATING EFFICIENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LANDSCAPE ARCHITECT TO REVIEW FIELD ADJUSTMENTS PRIOR TO INSTALLATION. IN THE EVENT THAT NO CONTACT IS MADE WITH THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS.
9. SLEEVE ALL IRRIGATION PIPE AND CONTROL WIRES UNDER STREETS AND CONCRETE WALKWAYS WITH THE PROPER SIZE CLASS 200 PVC PIPE TO DEPTH AS SPECIFIED.
10. FOR ADDITIONAL INFORMATION, SEE PROJECT DETAILS AND SPECIFICATIONS.
11. ALL WORK SHALL CONFORM TO ALL APPLICABLE CITY OF SANTA ROSA CONSTRUCTION STANDARDS.
12. NO GALVANIZED IRON PIPE OR FITTINGS SHALL BE ALLOWED.
13. A BALL VALVE IN A SEPARATE ROUND VALVE BOX IS TO BE INSTALLED IMMEDIATELY UPSTREAM FROM EACH REMOTE CONTROL VALVE OR GROUP OF VALVES. VALVE SHALL BE SIZED TO MAINLINE SUPPLY AT THE RC VALVE. SEE DETAIL.
14. INSTALL 3" WIDE DETECTABLE TAPE (#5) DTP, AS MANUFACTURED BY T. CHRISITY. TAPE SHALL BE INSTALLED 6" ABOVE THE IRRIGATION MAIN.
15. INSTALL ALL LANDSCAPE DRIPLINE BENEATH MULCH. INSTALL ALL TUBING 3" BELOW GRADE, PARALLEL AT SPACINGS INDICATED. USE LANDSCAPE STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO SECURE TUBING TO GROUND.
16. A SIGNED CERTIFICATE OF COMPLETION IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF SANTA ROSA. IF THE INSTALLATION OF THE LANDSCAPE DOES MEET OR SUBSTANTIALLY COMPLY WITH THE APPROVED LANDSCAPE CONSTRUCTION DOCUMENTS, THE CERTIFICATE OF COMPLETION WILL NOT BE SIGNED OR APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.



TREE & BIORETENTION CONCEPT IRRIGATION PLAN

SCALE: 1" = 20'-0"



IRRIGATION LEGEND

SYMBOL	EQUIPMENT	MANUFACTURER	MODEL	REMARKS
☼	STREAM BUBBLER: 6" POP-UP	HUNTER	PROS-06-CV-R-PRS30-MSBN-25Q	TREE WELL BUBBLER, AIM AT ROOT BALL; 1 PER TREE
☼	ROOT WATERING SYSTEM	HUNTER	RZWS-18-25-CV	1 PER TREE
⊕	1" NORMALLY CLOSED MASTER VALVE	HUNTER	ICV-101G	INSTALL DOWNSTREAM FROM BACKFLOW PREVENTER
⊕	REMOTE CONTROL VALVE: TREE BUBBLER	HUNTER	ICV-101G-AS-ADJ	TREE BUBBLER CIRCUIT VALVE; SEE PLAN FOR SIZE
⊕	REMOTE CONTROL VALVE: DRIP CIRCUIT	HUNTER	ICZ-101-LF-25, ICZ-101-25	DRIP CIRCUIT VALVE
⊕	6 STATION BASE CONTROLLER (2 WIRE CONFIGURATION)	HUNTER	IC-600-SS	MOUNT ON PANEL AT EYE LEVEL
⊕	DUAL DECODER MODULE	HUNTER	DUAL -1, DUAL -2, DUAL -S	
⊕	DUAL SURGE ARRESTOR	HUNTER	DUAL -S	
⊕	DUAL DECODER OUTPUT MODULE	HUNTER	DUAL-48M	
☼	SOLAR SYNC SENSOR (WIRELESS)	HUNTER	WSS-SEN	MOUNT AT ROOF LINE ABOVE CONTROLLER LOCATION
⊕	R.P. BACKFLOW PREVENTER - 1"	FEBCO	860U	
⊕	BACK FLOW PREVENTER ENCLOSURE	LE MEUR	BF 18" X 30" X 30"	INSTALL PER MANUF. SPECS
⊕	QUICK COUPLER W/ COVER	CHAMPION	QCV-075V	SEE PLAN FOR SIZE
⊕	BALL VALVE IN VALVE BOX	WATTS	B640 SERIES	MATCH MAINLINE SIZE; REFER TO DETAIL
⊕	AUTOMATIC LINE FLUSH VALVE	HUNTER	AFV-T	INST. IN 6" VALVE BOX @ END OF CIRCUIT
⊕	AIR RELIEF VALVE	HUNTER	AVR-075	INST. IN 6" VALVE BOX @ HIGH POINT OF CIRCUIT
⊕	PIPE AND WIRE CHASE	PVC	CL 200	SEE PLAN FOR SIZE
⊕	SUB-SURFACE BIOSWALE IRRIGATION	HUNTER	ECO-MAT 17MM	INSTALL 4" BELOW GRADE ALL BIOSWALE AREAS
⊕	POLY TO PVC CONNECTOR W/ COMPRESSION FITTING		SEE DETAIL GL3	
⊕	LANDSCAPE DRIPLINE	RAINBIRD	XFS-06-12-XX	INSTALL 3" BELOW GRADE @ SPACING SHOWN
⊕	MAINLINE	PVC	SCH 40 (1-1/2" AND SMALLER)	
⊕	LATERAL	PVC	SCH 40	
⊕	FLOW SENSOR	CST	FSI-T10-000	INSTALL AT POINT OF CONNECTION
⊕	WATER METER			REFER TO CIVIL DRAWINGS
12.5	VALVE STATION AND SEQUENCE			
17	ELECTRIC CONTROL VALVE SIZE			
17	FLOW RATE IN GALLONS PER MINUTE			

IRRIGATION AND HYDROZONE KEYNOTES

1. GREEN AREA DENOTES LOW WATER USE HYDROZONES
2. YELLOW AREA DENOTES MODERATE WATER USE HYDROZONES
3. TREE AREA IS CALCULATED AT A WETTED DIAMETER OF 6 FT. OR EQUIVALENT AREA. THE SAME AREA IS REMOVED FROM THE HYDROZONE BELOW THE TREE AND THE HIGHER WATER USE IS APPLIED IN THE ETWU CALCULATION.
4. TREE BUBBLERS, TWO PER TREE, ONE ABOVE GRADE STREAM BUBBLER AND ONE SUB-SURFACE BUBBLER
5. LAWN AREAS WITH ECO-MAT, TYP.
6. BIORETENTION AREAS WITH ECO-MAT, TYP.

REFER TO SHEET L1.2 FOR IRRIGATION CALCULATIONS

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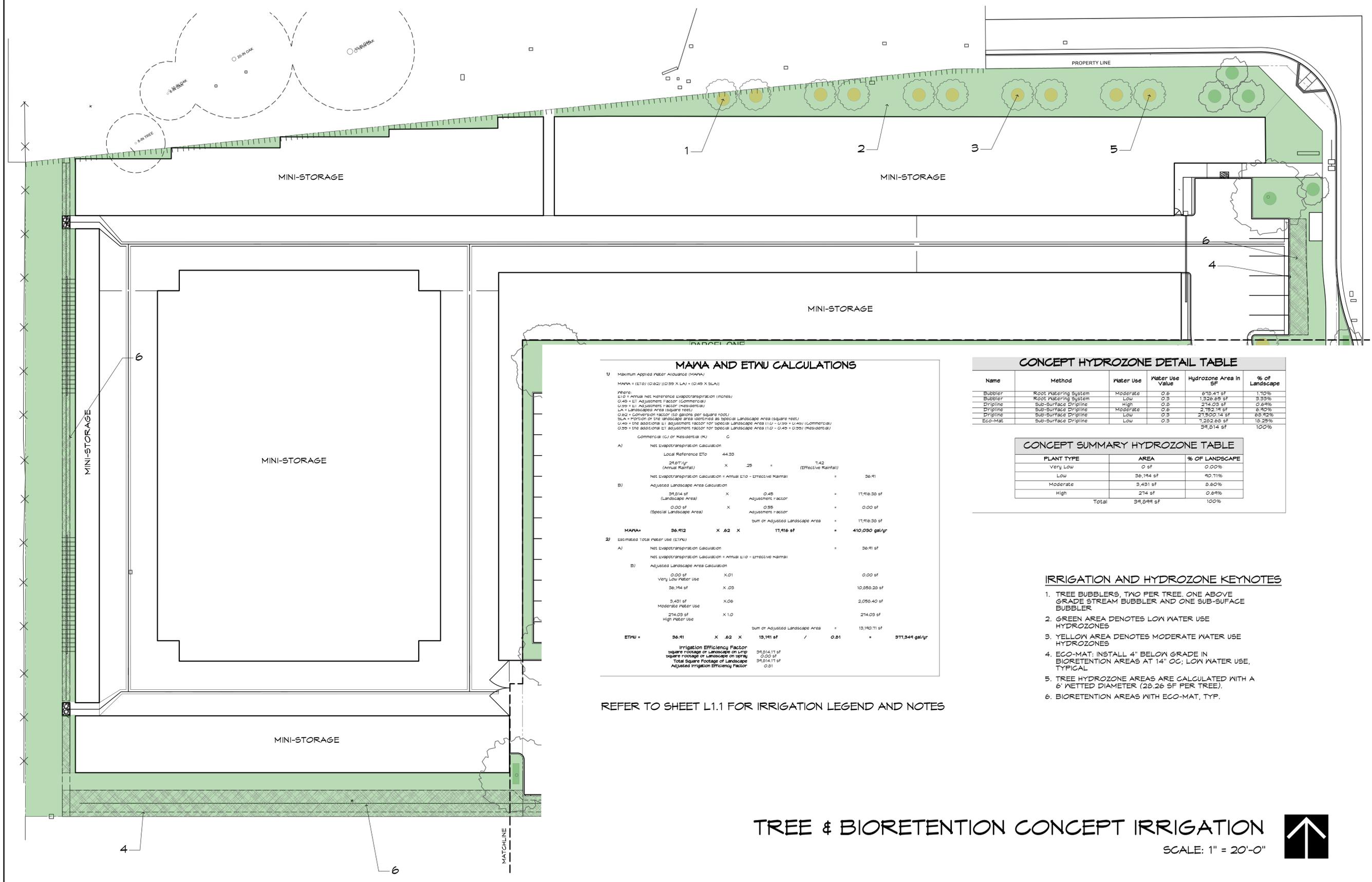


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CONCEPT IRRIGATION PLAN

AVENUE 3111 STORAGE & APARTMENTS
 3111 SANTA ROSA AVENUE
 SANTA ROSA, CA

DATE: 10/11/21
 MLA JOB #: 2020-28
 SCALE: 1" = 20'
 DRAWN: DM



MAWA AND ETWU CALCULATIONS

1) Maximum Applied Water Allowance (MAWA)
 MAWA = (E10) (0.62) (0.95 X LA) + (0.49 X SLA)

Where:
 E10 = Annual Net Reference Evapotranspiration (inches)
 0.49 = E1 Adjustment factor (Commercial)
 0.95 = E1 Adjustment factor (Residential)
 LA = Landscape Area (square feet)
 SLA = Special Landscape Area (square feet)
 0.62 = Conversion factor (10 gallons per square foot)
 0.49 = the additional E1 adjustment factor for special Landscape Area (1.0 - 0.95 + 0.49) (Commercial)
 0.95 = the additional E1 adjustment factor for special Landscape Area (1.0 - 0.49 + 0.95) (Residential)

Commercial (C) or Residential (R) C

A) Net Evapotranspiration Calculation
 Local Reference E10 44.33
 (Annual Rainfall) 28.67" yr
 X .25 = 11.42 (Effective Rainfall)
 Net Evapotranspiration Calculation = Annual E10 - Effective Rainfall = 36.41

B) Adjusted Landscape Area Calculation
 39,814 sf (Landscape Area) X 0.49 Adjustment factor = 17,116.38 sf
 0.00 sf (Special Landscape Area) X 0.95 Adjustment factor = 0.00 sf
 sum of Adjusted Landscape Area = 17,116.38 sf

MAWA = 36.412 X .62 X 17,116 sf = 410,090 gal/yr

2) Estimated Total Water Use (ETWU)
 A) Net Evapotranspiration Calculation = 36.41 sf
 Net Evapotranspiration Calculation = Annual E10 - Effective Rainfall

B) Adjusted Landscape Area Calculation
 0.00 sf Very Low Water Use X 0.01 = 0.00 sf
 36,194 sf X 0.05 = 1,809.70 sf
 9,491 sf X 0.06 = 569.46 sf
 274.09 sf X 1.0 = 274.09 sf
 sum of Adjusted Landscape Area = 18,144.11 sf

ETWU = 36.41 X .62 X 18,141 sf / 0.81 = 371,944 gal/yr

Irrigation Efficiency Factor
 Square Footage of Landscape on L1P 39,814.11 sf
 Square Footage of Landscape on L1P 0.00 sf
 Total Square Footage of Landscape 39,814.11 sf
 Adjusted Irrigation Efficiency Factor 0.81

CONCEPT HYDROZONE DETAIL TABLE

Name	Method	Water Use	Water Use Value	Hydrozone Area in SF	% of Landscape
Bubbler	Root Watering System	Moderate	0.6	618.41 sf	1.70%
Bubbler	Root Watering System	Low	0.3	1,926.85 sf	3.33%
Dripline	Sub-Surface Dripline	High	0.9	274.09 sf	0.69%
Dripline	Sub-Surface Dripline	Moderate	0.6	2,752.11 sf	6.90%
Dripline	Sub-Surface Dripline	Low	0.3	21,500.14 sf	53.92%
Eco-Mat	Sub-Surface Dripline	Low	0.3	1,282.68 sf	18.25%
				39,814 sf	100%

CONCEPT SUMMARY HYDROZONE TABLE

PLANT TYPE	AREA	% OF LANDSCAPE
Very Low	0 sf	0.00%
Low	36,194 sf	90.71%
Moderate	9,491 sf	23.82%
High	274 sf	0.69%
Total	39,814 sf	100%

IRRIGATION AND HYDROZONE KEYNOTES

- TREE BUBBLERS, TWO PER TREE, ONE ABOVE GRADE STREAM BUBBLER AND ONE SUB-SURFACE BUBBLER
- GREEN AREA DENOTES LOW WATER USE HYDROZONES
- YELLOW AREA DENOTES MODERATE WATER USE HYDROZONES
- ECO-MAT: INSTALL 4" BELOW GRADE IN BIORETENTION AREAS AT 14" OC; LOW WATER USE, TYPICAL
- TREE HYDROZONE AREAS ARE CALCULATED WITH A 6" NETTED DIAMETER (28.26 SF PER TREE).
- BIORETENTION AREAS WITH ECO-MAT, TYP.

REFER TO SHEET L1.1 FOR IRRIGATION LEGEND AND NOTES

TREE & BIORETENTION CONCEPT IRRIGATION

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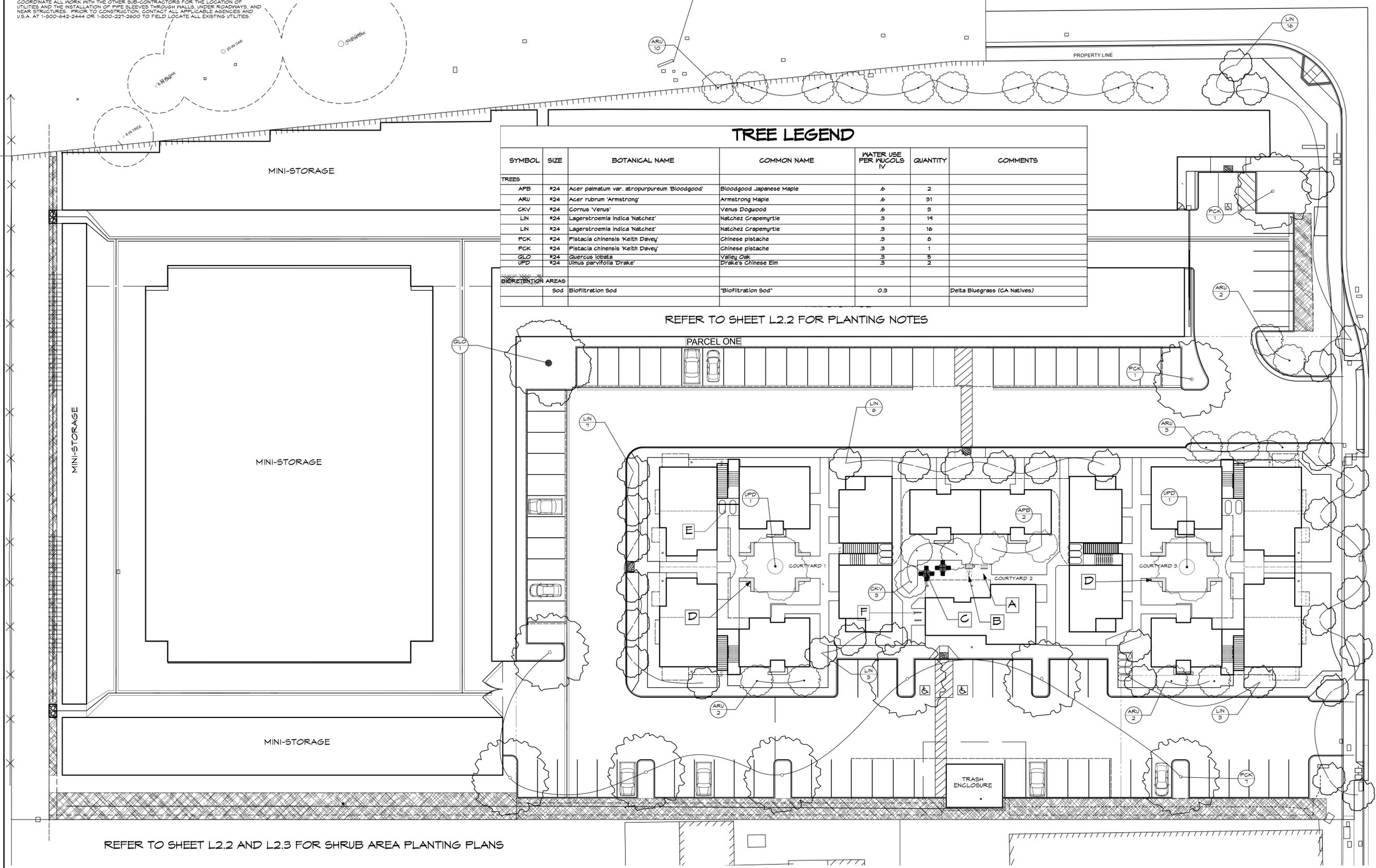


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 SANTA ROSA, CA
TREE & BIORETENTION PLANTING PLAN

TREE LEGEND						
SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	WATER USE PER WUCOLS IV	QUANTITY	COMMENTS
TREES						
APB	#24	<i>Acer palmatum</i> var. <i>atropurpureum</i> 'Bloodgood'	Bloodgood Japanese Maple	.6	2	
ARU	#24	<i>Acer rubrum</i> 'Armstrong'	Armstrong Maple	.6	31	
CKV	#24	<i>Cornus</i> 'Venus'	Venus Dogwood	.6	3	
LIN	#24	<i>Lagerstroemia indica</i> 'Natchez'	Natchez Crape Myrtle	.3	14	
LIN	#24	<i>Lagerstroemia indica</i> 'Natchez'	Natchez Crape Myrtle	.3	16	
PCK	#24	<i>Pistacia chinensis</i> 'Keith Davey'	Chinese pistache	.3	8	
PCK	#24	<i>Pistacia chinensis</i> 'Keith Davey'	Chinese pistache	.3	1	
QLO	#24	<i>Quercus lobata</i>	Valley Oak	.3	5	
UPD	#24	<i>Ulmus parvifolia</i> 'Drake'	Drake's Chinese Elm	.3	2	
BIORETENTION AREAS						
Sod		Biofiltration Sod	'Biofiltration Sod'	0.3		Delta Bluegrass (CA Natives)

REFER TO SHEET L2.2 FOR PLANTING NOTES



REFER TO SHEET L2.2 AND L2.3 FOR SHRUB AREA PLANTING PLANS

- SITE FURNISHING KEYNOTES**
- A PORTABLE BBQ
 - B ACCESSIBLE, PORTABLE BBQ
 - C PATIO TABLE AND CHAIRS
 - D 18" CONCRETE SEATWALL, TYPICAL
 - E BIKE LOCKERS, TYPICAL. REFER TO ARCH SITE PLAN
 - F BIKE RACKS, TYPICAL. REFER TO ARCH SITE PLAN

TREE & BIORETENTION PLANTING
 SCALE: 1" = 20'-0"



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**CITY REQUIREMENT OF DOCUMENT OF COMPLIANCE
 (ITEMS TO BE INCLUDED WITH CERTIFICATE OF COMPLETION)**

- A. PROJECT APPLICANT MUST SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY WITH CERTIFICATE OF COMPLETION
 B. THE CERTIFICATE OF COMPLETION MUST BE ACCOMPANIED BY AN IRRIGATION AUDIT THAT CONTAINS THE FOLLOWING:
- OPERATING PRESSURE OF THE IRRIGATION SYSTEM
 - DISTRIBUTION UNIFORMITY OF OVERHEAD IRRIGATION
 - PRECIPITATION RATE OF OVERHEAD IRRIGATION
 - REPORT OF ANY OVERSPRAY OR BROKEN IRRIGATION EQUIPMENT
 - IRRIGATION SCHEDULE INCLUDING:
 1. PLANT ESTABLISHMENT IRRIGATION SCHEDULE
 2. REGULAR IRRIGATION SCHEDULE BY MONTH (SEE ORDINANCE FOR DETAILS)
 3. VERIFICATION THAT A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES IS KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.
 - ALL LANDSCAPE IRRIGATION AUDITS MUST BE CONDUCTED BY A CITY CERTIFIED LANDSCAPE IRRIGATION AUDITOR OR A THIRD PARTY CERTIFIED LANDSCAPE IRRIGATION AUDITOR.
 - AN IRRIGATION MAINTENANCE SCHEDULE TIMELINE MUST BE ATTACHED TO THE CERTIFICATE OF COMPLETION (SEE ORDINANCE FOR DETAILS)
- C. IRRIGATION AUDIT: AN IN-DEPTH EVALUATION OF THE PERFORMANCE OF AN IRRIGATION SYSTEM CONDUCTED BY A CERTIFIED LANDSCAPE IRRIGATION AUDITOR (SEE ORDINANCE FOR DETAILS). THE AUDIT MUST BE CONDUCTED IN A MANNER CONSISTENT WITH THE IRRIGATION ASSOCIATION'S LANDSCAPE IRRIGATION AUDITOR CERTIFICATION PROGRAM OR OTHER U.S. EPA "WATERSENSE" LABELED AUDITING PROGRAM.

CITY REQUIRED NOTES

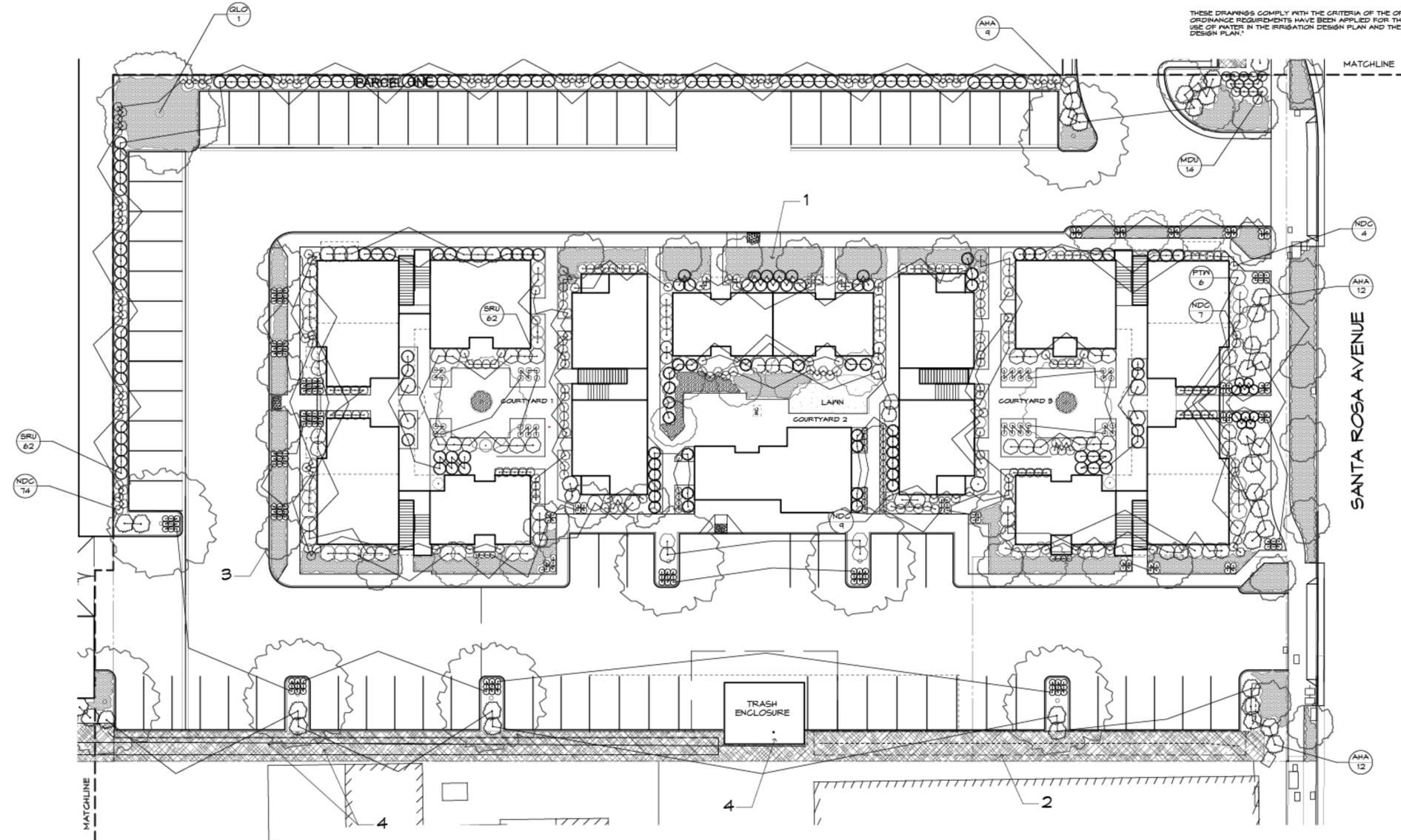
1. UPON COMPLETION OF INSTALLATION, CONTRACTOR SHALL SUBMIT TO THE ENGINEERING DEVELOPMENT SERVICES INSPECTOR A COMPLETED AND SIGNED "CERTIFICATE OF COMPLETION" STATING THE PROJECT HAS BEEN INSTALLED AS DESIGNED.
2. THE CERTIFICATE OF COMPLETION SHALL BE ACCOMPANIED BY AN IRRIGATION AUDIT, IRRIGATION SCHEDULE AND A MAINTENANCE SCHEDULE, AS DESCRIBED IN THE CITY ORDINANCE.
3. A FINAL CITY INSPECTION SHALL BE PERFORMED. THE INSTALLATION CONTRACTOR SHALL ATTEND THIS INSPECTION AND MAKE ALL REQUIRED REPAIRS AND ADJUSTMENTS TO ACHIEVE APPROVAL AND COMPLETION FROM THE CITY. TO SCHEDULE AN INSPECTION, CONTACT ENGINEERING DEVELOPMENT SERVICES AT (707) 543-4611.
4. A MINIMUM OF 8" OF NON-MECHANICALLY COMPACTED SOIL SHALL BE AVAILABLE FOR WATER ABSORPTION AND ROOT GROWTH IN PLANTED AREAS.
5. INCORPORATE COMPOST OR NATURAL FERTILIZER INTO THE SOIL TO A MINIMUM DEPTH OF 8" AT A MINIMUM RATE OF 8 CUBIC YARDS PER 1000 SQUARE FEET OR PER SPECIFIC AMENDMENT RECOMMENDATIONS FROM A SOILS LABORATORY REPORT.
6. A MINIMUM 3" LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT IN TURF AREAS, CREEPING OR ROOTING GROUNDCOVERS OR DIRECT SEEDING APPLICATIONS.

SOIL ANALYSIS REPORT

(REQUIRED BY CITY OF SANTA ROSA):

IN ORDER TO REDUCE RUNOFF AND ENCOURAGE HEALTHY PLANT GROWTH, A SOIL ANALYSIS REPORT SHALL BE COMPLETED BY THE PROJECT APPLICANT, OR THEIR DESIGNER, AS FOLLOWS:

- (1) SUBMIT SOIL SAMPLES TO A LABORATORY FOR ANALYSIS AND RECOMMENDATIONS.
 - (A) SOIL SAMPLING SHALL BE CONDUCTED IN ACCORDANCE WITH LABORATORY PROTOCOL, INCLUDING PROTOCOLS REGARDING ADEQUATE SAMPLING DEPTH FOR THE INTENDED PLANTS.
- (2) THE SOIL ANALYSIS SHALL INCLUDE:
 - (A) SOIL TEXTURE;
 - (B) INFILTRATION RATE DETERMINED BY LABORATORY TEST OR SOIL TEXTURE INFILTRATION RATE TABLE;
 - (C) PH;
 - (D) TOTAL SOLUBLE SALTS;
 - (E) SODIUM;
 - (F) PERCENT ORGANIC MATTER; AND
 - (G) RECOMMENDATIONS.
- (3) IN PROJECTS WITH MULTIPLE LANDSCAPE INSTALLATIONS (I.E. PRODUCTION HOME DEVELOPMENTS) A SOIL SAMPLING RATE OF 1 IN 7 LOTS OR APPROXIMATELY 15% WILL SATISFY THIS REQUIREMENT. LARGE LANDSCAPE PROJECTS SHALL SAMPLE AT A RATE EQUIVALENT TO 1 IN 7 LOTS.
- (4) THE SOIL ANALYSIS REPORT SHALL BE MADE AVAILABLE, IN A TIMELY MANNER, TO THE PROFESSIONALS PREPARING THE LANDSCAPE DESIGN PLANS AND IRRIGATION DESIGN PLANS TO MAKE ANY NECESSARY ADJUSTMENTS TO THE DESIGN PLANS.
- (5) IF A GRADING PERMIT IS REQUIRED, THE SOIL ANALYSIS REPORT SHALL BE SUBMITTED TO THE CITY WITH THE CERTIFICATE OF COMPLETION. IF A GRADING PERMIT IS NOT REQUIRED, THE SOIL ANALYSIS REPORT SHALL BE SUBMITTED TO THE CITY WITH THE LANDSCAPE DOCUMENTATION PACKAGE.
- (6) THE PROJECT APPLICANT, OR HIS/HER DESIGNER, SHALL SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY WITH CERTIFICATE OF COMPLETION.



SHRUB PLANTING PLAN

SCALE: 1" = 20'-0"

REFER TO SHEET L2.3 FOR PLANT LEGEND

PLANTING NOTES

1. ALL GROUND COVER TO BE SPACED IN A TRIANGULAR PATTERN. CONTRACTOR RESPONSIBLE FOR COMPLETE COVERAGE.
2. SUPPLY AGIFORM 21 GRAM TABLETS AS FOLLOWS: 9-15 GAL., 3-5 GAL., 1-1 GAL.
3. DIS PLANTING PITS 2 TIMES THE DIAMETER AND EQUAL THE HEIGHT OF ROOTBALL.
4. BACKFILL PITS WITH 2/3 EXISTING SOIL, 1/3 ORGANIC AMENDMENT
5. ALL PLANTS TO BE SPOTTED IN THE FIELD BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
6. WHEN LANDSCAPING IN EXISTING PLANTED AREAS, CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE OR DESTROY ANY EXISTING PLANT MATERIAL OR IRRIGATION. EXISTING PLANT MATERIAL AND IRRIGATION THAT IS DAMAGED SHALL BE REPLACED WITH LIKE, SIZE, QUALITY, ETC. BY THE CONTRACTOR AT HIS EXPENSE.
7. SPECIAL ATTENTION IS TO BE PAID TO THE PLANTING AREAS SURROUNDING THE BUILDINGS. COMPACTED SOIL IS TO BE SUFFICIENTLY EXCAVATED TO ALLOW FOR PROPER ROOT GROWTH AND DRAINAGE OF ALL AREAS. CHECK SOIL FOR PROPER DRAINAGE PRIOR TO PLANTING, AUGER THROUGH COMPACTED SOIL WHERE NECESSARY. DO NOT PLANT IN THE DRAINAGE SPIALES.
8. ALL CONSTRUCTION IS TO BE PER ALL APPLICABLE AND PREVAILING CITY OF SANTA ROSA CONSTRUCTION STANDARDS.
9. A SIGNED CERTIFICATE OF COMPLETION IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF SANTA ROSA. IF THE INSTALLATION OF THE LANDSCAPE DOES MEET OR SUBSTANTIALLY COMPLY WITH THE APPROVED LANDSCAPE CONSTRUCTION DOCUMENTS, THE CERTIFICATE OF COMPLETION WILL NOT BE SIGNED OR APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.

PLANTING KEYNOTES

1. 3" DEEP MULCH, ALL LANDSCAPE AREAS
2. BIO-FILTRATION SOD, TYPICAL
3. 24" DEEP ROOT BARRIER, REFER TO DETAIL SHEET L-3, TYPICAL
4. EXISTING TREES TO BE REMOVED

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**SHRUB PLANTING PLAN
 APARTMENTS**

**AVENUE 3111 STORAGE &
 APARTMENTS**
 3111 SANTA ROSA AVENUE
 SANTA ROSA, CA

DATE: 10/11/21
 MLA JOB #: 2020-28
 SCALE: 1" = 20'
 DRAWN: DM

U.S.A. NOTE
 IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO BE FAMILIAR WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL EXERCISE EXTREME CARE, AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR UTILITIES. THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OTHER SUB-CONTRACTORS FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE AGENCIES AND U.S.A. AT 1-800-642-2444 OR 1-800-221-2600 TO FIELD LOCATE ALL EXISTING UTILITIES.

THESE DRAWINGS COMPLY WITH THE CRITERIA OF THE ORDINANCE. ORDINANCE REQUIREMENTS HAVE BEEN APPLIED FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN AND THE LANDSCAPE DESIGN PLAN.

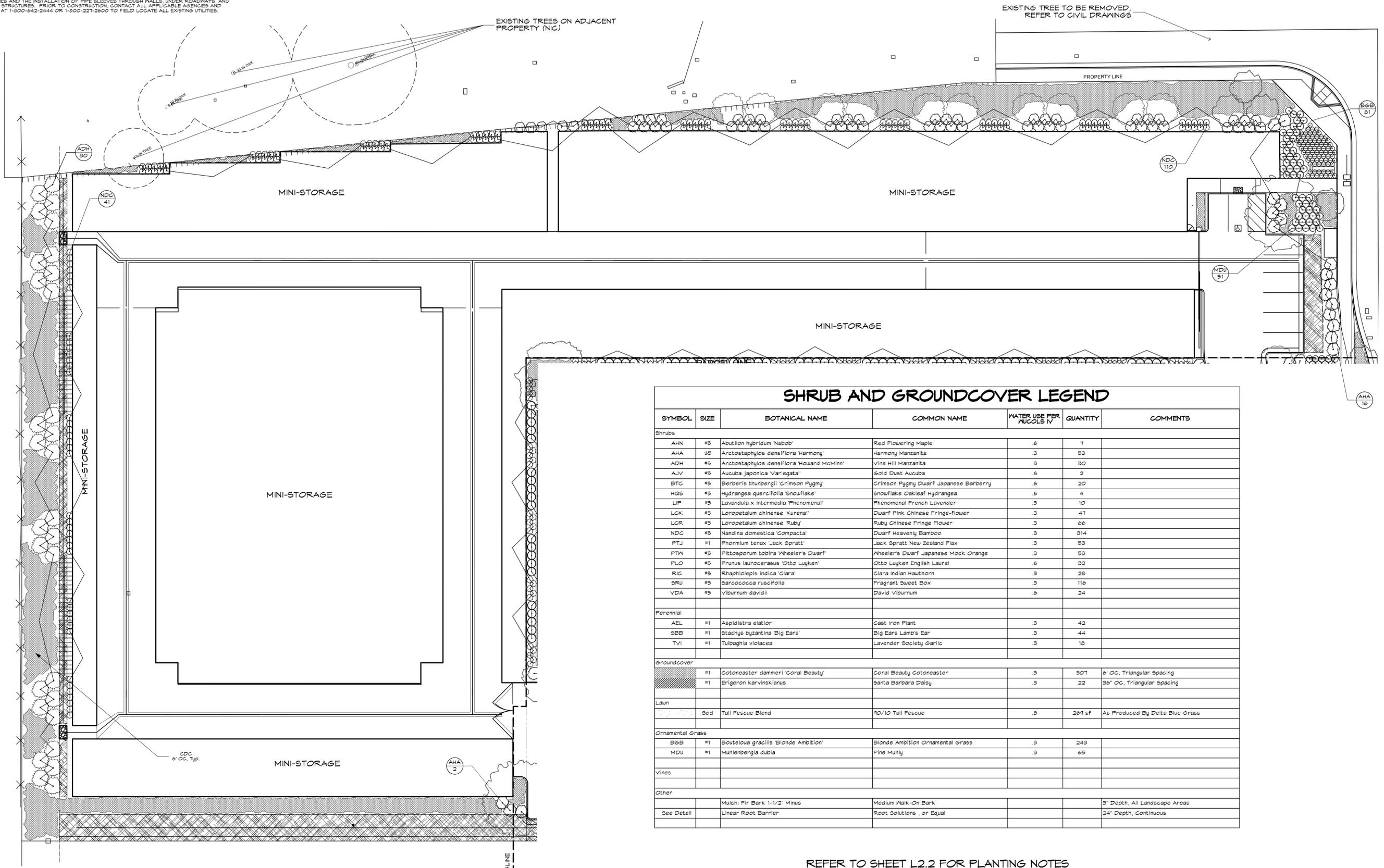
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**SHRUB PLANTING PLAN
 MINI-STORAGE**

**AVENUE 3111 STORAGE &
 APARTMENTS
 3111 SANTA ROSA AVENUE
 SANTA ROSA, CA**



SHRUB AND GROUNDCOVER LEGEND

SYMBOL	SIZE	BOTANICAL NAME	COMMON NAME	WATER USE PER MUCCOLS IV	QUANTITY	COMMENTS
Shrubs						
AHN	#5	Abutilon hybridum 'Naboo'	Red Flowering Maple	.6	7	
AHA	#5	Arctostaphylos densiflora 'Harmony'	Harmony Manzanita	.3	53	
ADH	#5	Arctostaphylos densiflora 'Howard McMini'	Vine Hill Manzanita	.3	30	
AJV	#5	Aucuba japonica 'Variegata'	Gold Dust Aucuba	.6	2	
BTC	#5	Berberis thunbergii 'Crimson Pygmy'	Crimson Pygmy Dwarf Japanese Barberry	.6	20	
HQS	#5	Hydrangea quercifolia 'Snowflake'	Snowflake Oakleaf Hydrangea	.6	4	
LIF	#5	Lavandula x intermedia 'Phenomenal'	Phenomenal French Lavender	.3	10	
LCK	#5	Loropetalum chinense 'Kurenai'	Dwarf Pink Chinese Fringe-Flower	.3	47	
LGR	#5	Loropetalum chinense 'Ruby'	Ruby Chinese Fringe Flower	.3	66	
NDC	#5	Nandina domestica 'Compacta'	Dwarf Heavenly Bamboo	.3	314	
PTJ	#1	Phormium tenax 'Jack Spratt'	Jack Spratt New Zealand Flax	.3	53	
PTW	#5	Pittosporum tobira 'Wheeler's Dwarf'	Wheeler's Dwarf Japanese Mock Orange	.3	53	
PLO	#5	Prunus laurocerasus 'Otto Luyken'	Otto Luyken English Laurel	.6	32	
RIC	#5	Raphiolepis indica 'Clara'	Clara Indian Hawthorn	.3	28	
SRU	#5	Sarcococca ruscifolia	Fragrant Sweet Box	.3	116	
VDA	#5	Viburnum davidii	David Viburnum	.6	24	
Perennial						
AEL	#1	Aspidistra elatior	Cast Iron Plant	.3	42	
SBB	#1	Stachys byzantina 'Big Ears'	Big Ears Lamb's Ear	.3	44	
TVI	#1	Tulbaghia violacea	Lavender Society Garlic	.3	10	
Groundcover						
	#1	Cotoneaster dammeri 'Coral Beauty'	Coral Beauty Cotoneaster	.3	307	6" OC, Triangular Spacing
	#1	Erigeron karvinskianus	Santa Barbara Daisy	.3	22	36" OC, Triangular Spacing
Lawn						
	Sod	Tall Fescue Blend	40/10 Tall Fescue	.3	269 sf	As Produced By Delta Blue Grass
Ornamental Grass						
	#1	Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition Ornamental Grass	.3	243	
	#1	Muhlenbergia dubia	Pine Muhly	.3	65	
Vines						
Other						
		Mulch: Fir Bark 1-1/2" Minus	Medium Walk-On Bark			3" Depth, All Landscape Areas
See Detail		Linear Root Barrier	Root Solutions, or Equal			24" Depth, Continuous

REFER TO SHEET L2.2 FOR PLANTING NOTES

SHRUB PLANTING PLAN - MINI-STORAGE

SCALE: 1" = 20'-0"



DATE: 10/11/21
 MLA JOB #: 2020-28
 SCALE: 1" = 20'
 DRAWN: DM

L-2.3
 SHEET L-2.3 OF 8

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TREE IMAGES/
SITE FURNISHINGS

AVENUE 3111 STORAGE &
APARTMENTS
3111 SANTA ROSA AVENUE
SANTA ROSA, CA

DATE: 10/11/21
MLA JOB #: 2020-28
SCALE: 1" = 20'
DRAWN: DM

L-2.4
SHEET L-2.4 OF 8



ACER PALMATUM
'BLOODGOOD'



ACER RUBRUM
'ARMSTRONG'



CORNUS 'VENUS'



LAGERSTROMIA INDICA
'NATCHEZ'



PISTACIA CHINENSIS
'KEITH DAVEY'



QUERCUS LOBATA



ULMUS PARVIFOLIA
'DRAKE'

SITE FURNISHINGS							
TAG ID	ITEM	MANUFACTURER	STYLE	MODEL #		DESCRIPTION	NOTES
A	BBQ	Lynx	Sedona	L600F-LP	1	36" Grill with Freestanding 3 Stainless Steel Burners	Or Approved Equal By Owner
B	BBQ	Lynx	Sedona	L600ADA-LP	1	36" Grill - ADA 36 Inch 1 Prosear Burner & 2 Stainless Steel Burners (freestanding)	Or Approved Equal By Owner
C	Picnic Table	Landscape Forms	Wellspring	WP568-01	2	48" Round Teak Table	Or Approved Equal By Owner
D	Picnic Table	Landscape Forms	Wellspring	WP569-01	8	Patio Chair	Or Approved Equal By Owner
E	Concrete Seat Wall	Poured in Place	Board Formed		8		



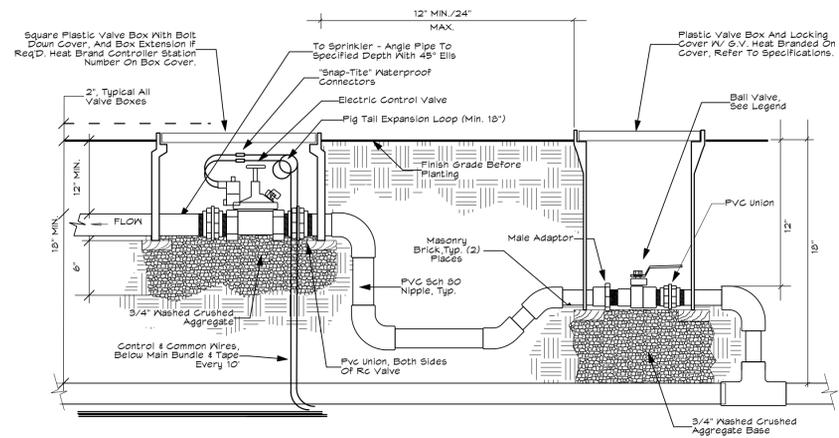
A PORTABLE BBQ



B PORTABLE BBQ ADA COMPLIANT

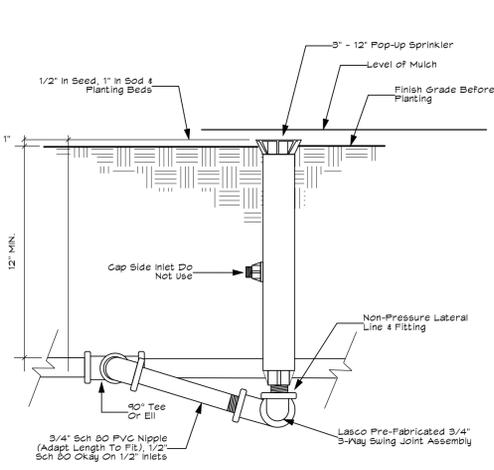


C/D PICNIC TABLE AND CHAIRS



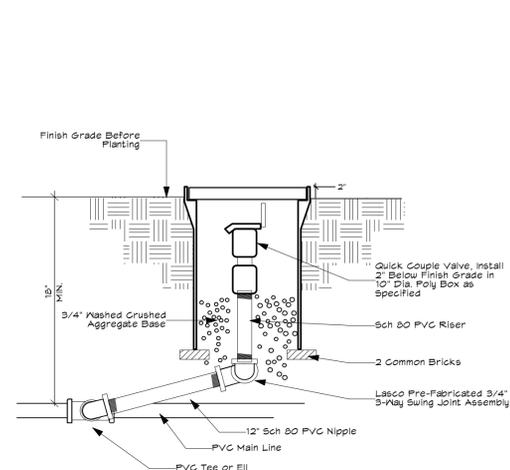
- NOTES:
- 1) INSTALL CONTROL VALVES A MINIMUM OF 10' FROM STRUCTURES OR HARDSCAPING.
 - 2) INSTALL VALVES IN PLANT BEDS WHEREVER POSSIBLE.
 - 3) PLACE VALVE BOX AT RIGHT ANGLES TO STRUCTURES OR HARDSCAPING.
 - 4) INSTALL VALVE BOX SO THAT TOP OF BOX IS FLUSH WITH ADJACENT HARDSCAPING.
 - 5) PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.
 - 6) INSTALL VALVE BOXES SO THAT TOP OF BOX IS FLUSH WITH ADJACENT HARDSCAPE.
 - 7) INSTALL ONE BALL VALVE IN BOX IMMEDIATELY UPSTREAM FROM EACH REMOTE CONTROL VALVE.

A ELECTRIC CONTROL VALVE WITH SHUT OFF
L3 NTS



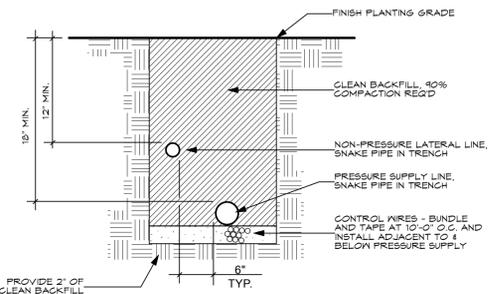
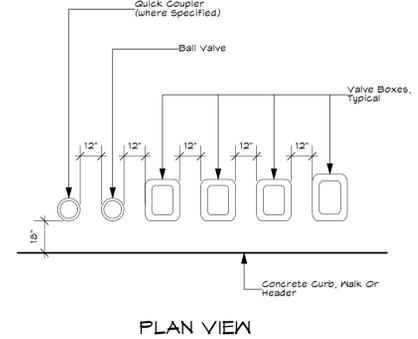
- NOTES:
- 1) LOCATE HEAD 6" FROM ALL EDGES IN LAWN AREAS. LOCATE HEAD 12" FROM ALL EDGES IN SHRUB AREAS.
 - 2) LOCATE STREAM SPRAY AND BUBBLERS HEADS 6" FROM ALL EDGES.
 - 3) USE TEFLON PASTE ON ALL MALE THREADS.

B POP-UP SPRINKLER DETAIL
L3 INCLUDES 4", 6" AND 12" NTS



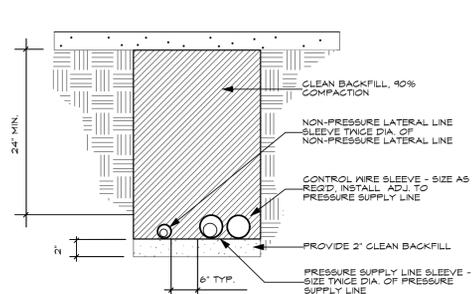
- NOTES:
- 1) CENTER VALVE BOX OVER VALVE ASSEMBLY.
 - 2) LOCATE VALVE BOXES IN GROUND COVER/SHRUB AREAS WHEN POSSIBLE.
 - 3) SET VALVE BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.

C QUICK COUPLER DETAIL
L3 NTS



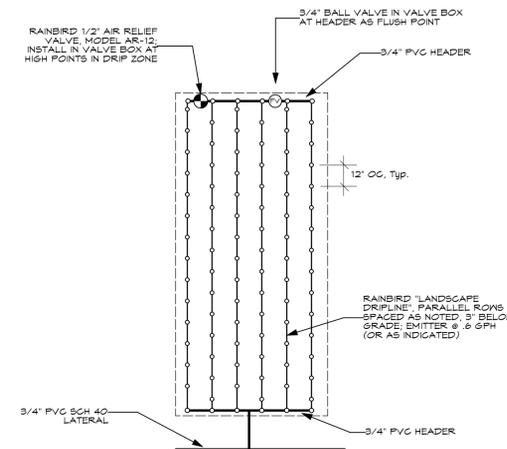
- NOTE:
- 1) PIGTAIL AND LOOP CONTROL WIRE AT ALL CHANGES IN DIRECTION.
 - 2) PROVIDE 10' EXPANSION LOOP AT ALL 90° ANGLES, AND EVERY 100' OF STRAIGHT CURVE RUN.

E PIPE INSTALLATION
L3 IN PLANTED AREA NTS

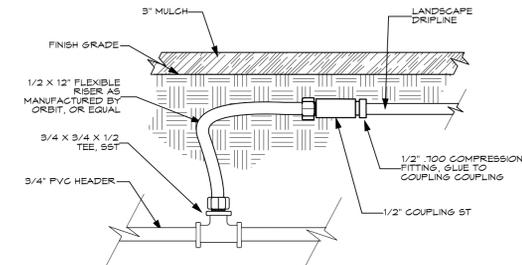


- NOTES:
- 1) ALL SLEEVES TO BE SCH 40 PVC.
 - 2) EXTEND ALL SLEEVES 12" BEYOND EDGE OF HARDSCAPING AT BOTH ENDS.

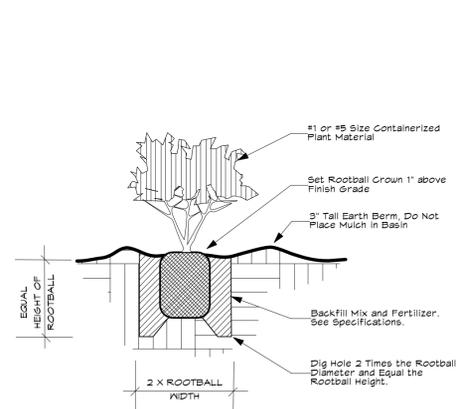
F PIPE INSTALLATION
L3 UNDER PAVING NTS



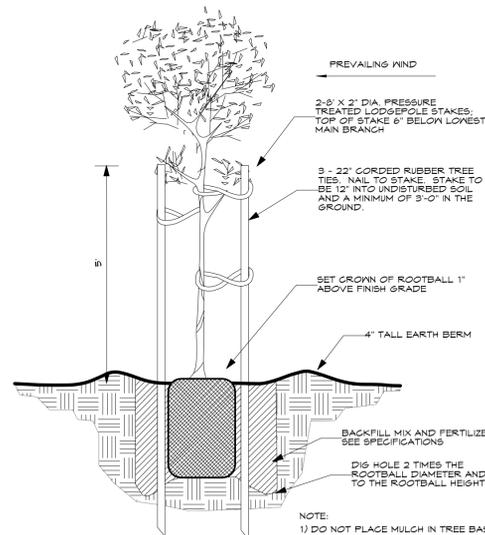
G DRIP CIRCUIT LAYOUT
L3 NTS



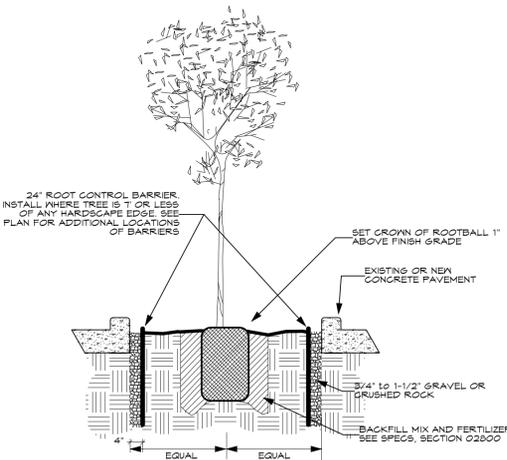
H POLY TO PVC COMPRESSION
L3 FITTING DETAIL NTS



I SHRUB PLANTING DETAIL
L3 NTS



J TREE PLANTING DETAIL
L3 NTS



- NOTE:
- 1) DO NOT PLACE MULCH IN TREE BASIN.
 - 2) PLANTING HOLE TO BE TESTED FOR DRAINAGE PRIOR TO PLANTING. IF HOLES DO NOT DRAIN WITHIN 4 HOURS CONTACT LANDSCAPE ARCHITECT.
 - 3) INSTALL ROOT BARRIER ON ALL FOUR SIDES OF PLANTER.

K TREE WELL WITH
L3 ROOT BARRIER NTS

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AVENUE 3111 STORAGE & APARTMENTS
3111 SANTA ROSA AVENUE
SANTA ROSA, CA



LANDSCAPE SPECIFICATIONS

3111 STORAGE & APARTMENTS
3111 SANTA ROSA AVENUE
SANTA ROSA, CA

DATE: 10/11/21
MLA JOB #: 2020-28
SCALE: N/A
DRAWN: DM

L-4
SHEET L-4 OF 8

SECTION 2 SITE WORK
DICTION 0270

UNDERGROUND IRRIGATION SYSTEM

PART 1 GENERAL

1.01 SCOPE

A. Work Included: perform all work necessary and required for the construction of the project as indicated. Such work includes but is not limited to the following:

- 1. Furnish and install complete irrigation system.
- 2. Trenching and backfilling.
- 3. Sleeves for irrigation piping and remote control valve wiring under pavements and walls as noted.

B. Related Work in Other Sections: The following items of associated work are included in other sections of these specifications:

- 1. Landscaping, Section 02800

C. By Others: The following items of work will be performed by others and are not included in the contract.

- 1. Electrical shut-out for irrigation controller.
- 2. Irrigation water meter.
- 3. Water stub-outs for irrigation system.

1.02 INSPECTION OF CONDITIONS: Examine related work and surfaces before starting work of this section. Report to the landscape architect in writing, conditions which will prevent the proper provision of this work. Beginning the work of this section without reporting unsuitable conditions to the landscape architect constitutes acceptance of conditions by the contractor. Any required removal, repair, or replacement of work caused by unsuitable conditions to be done at no additional cost to the owner.

1.03 CODES, RULES AND SAFETY ORDERS

A. All work and materials to be in full accordance with the latest rules and regulations of safety orders of Division of Industrial Safety, the Uniform Plumbing Code published by the Western Plumbing Officials' Association, and other applicable laws or regulations, including the prevailing local plumbing code. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes. Should the construction documents, not in accordance with the aforementioned rules and regulations, notify the landscape architect and get instructions before proceeding with the work affected.

B. Furnish and maintain all warning signs, shoring, barricades, red lanterns, etc., as required by the Safety Orders of the Division of Industrial Safety and local ordinances.

C. Contact U.S.A. for location of underground utilities.

1.04 STANDARDS: American Society of Testing and Materials (ASTM).

1.05 PERMITS AND FEES: Obtain all permits and pay required fees to any governmental agency having jurisdiction over the work. Arrange inspections required by local agencies and ordinances during the course of construction as required.

1.06 APPROVAL: Whenever the terms "approve", "approval", or "approved" are used in the specifications, they mean approval of landscape architect in writing.

1.07 WORK SCHEDULE: Submit a proposed work schedule to landscape architect at least 5 days prior to start of work under this Section. After approval, no modification shall be made to this schedule without written authorization by the landscape architect.

1.08 OBSERVATION SCHEDULE

A. Observations with the landscape architect at least 5 days before beginning work under this Section. All requests for observation must be made 72 hours in advance.

B. Job start meeting

The purpose of this conference is to review questions the contractor may have regarding the work, administrative procedures during construction and project work schedule.

B. Irrigation installation and hydrostatic tests

Observation of installation and hydrostatic test results to be made by the landscape architect prior to backfilling of trenches.

C. Pre-maintenance

When all work has been completed a pre-maintenance walk-through will be conducted. If approved, the 90 calendar day maintenance period will begin.

D. Final Observation

Final Observation will be after the 90 calendar day maintenance period and all required work is completed. Please give 1 week notice to the landscape architect.

1.09 SUBSTITUTIONS

A. Specific reference to manufacturer's names and products specified in this Section are used as standards, but this implies no right to substitute other material or methods without written approval of the landscape architect.

B. Installation of any approved substitution is contractor's responsibility. Any changes required for installation of any approved substitution must be made to the satisfaction of the landscape architect and without additional cost to the owner.

1.10 PROTECTION OF EXISTING CONDITIONS

A. Contractor shall acquaint themselves with all site conditions. Should utilities or other work not shown on the plans be found during excavations, contractor shall promptly notify landscape architect for instructions as to further action. Failure to do so will make contractor liable for any and all damage thereto arising from their operations subsequent to discovery of such utilities not shown on plans.

1.11 COORDINATION: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.

1.12 PRODUCT HANDLING: Protect work and materials under this Section from damage during construction and storage. Protect polyvinyl chloride (PVC) pipe and fittings from direct sunlight. Bids on which PVC is stored must be full length of pipe. Do not use any pipe or fitting that has been damaged or dented.

1.13 SAMPLES: Landscape architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request by the landscape architect. Rejected material shall be removed from the site immediately and replaced at the contractor's expense. Cost of testing materials not meeting specifications shall be paid by contractor.

1.14 HYDROSTATIC TESTS

A. Make hydrostatic tests on welded PVC joints have cured at least 24 hours. Apply continuous static water pressure of 100 psi as follows:

- 1. All piping on the pressure side of control valves shall be tested for two hours.
- 2. All completion of hydrostatic test, mainline shall be opened at farthest most point from the location of the pump to verify continuity of the mainline.

B. Leaks resulting from tests shall be repaired and tests repeated until system passes tests.

1.15 "AS-BUILT" IRRIGATION DRAWINGS: Contractor shall furnish Record Drawings of the complete irrigation system. Procedure from the landscape architect full sized sheets of Contract Drawings. Construction drawings shall be on the construction site at all times while the irrigation system is being installed. Actual location of valves and all irrigation and drainage piping shall be shown on the prints by dimensions from easily identified permanent features, such as buildings, curbs, fences, walks or property lines. Drawings shall show approved substitutions, if any, of material including manufacturer's name and catalog number. The drawings shall be at scale and all indications shall be neat. All information noted on the print shall be transferred to the prints by contractor and all indications shall be recorded in a neat, orderly way. The record drawings shall be turned over to the landscape architect at or before the Final Acceptance of the project.

1.16 CONTROLLER CHARTS

1. As-built drawings shall be approved by the landscape architect before charts are prepared.

2. Provide one controller chart for each controller supplied.

3. The chart shall show the area controlled by automatic controller and shall be the maximum size controller door will allow.

4. The chart is to be reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when drawn.

5. Chart shall be black line print and a different color shall be used to show area of coverage for each station.

6. The chart shall be mounted using Velcro, or an approved equal.

7. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 20 mils. thick.

8. These charts shall be completed and approved prior to final inspection of the irrigation system.

1.17 MATERIALS TO BE FURNISHED

A. Prior to final inspection the contractor shall furnish the following materials to the owner:

- 1. Two wrenches for disassembling and adjusting each type of sprinkler head supplied.
- 2. Two keys for each automatic controller.
- 3. Four keys for loose key hose bibs and/or hose bibs.
- 4. Twelve 12 inch pop-up sprinkler bodies.

1.18 CLEAN-UP: Keep all areas of work clean, neat and orderly at all times. Keep paved areas clean prior to installation. Clean up and remove all debris from the entire work area during Final Acceptance to satisfaction of landscape architect.

1.19 FINAL ACCEPTANCE: Work under this Section will be accepted by landscape architect upon satisfactory completion of all work. Upon Final Acceptance, owner will assume responsibility for maintenance of the work. Said assumption does not relieve contractor of obligations under Warranty.

1.20 WARRANTY: In addition to manufacturer's warranties or warranties, all work shall be warranted for one year from the date of Final Acceptance against defects in material, equipment and workmanship by contractor. Warranty shall also cover repair of damage to any part of the premises resulting from leaks or other defects in materials, equipment and workmanship to the satisfaction of the owner.

PART 2 MATERIALS

2.01 GENERAL: Materials throughout the system shall be new and in perfect condition. At least 14 days prior to beginning work, submit for approval 2 copies of manufacturer's catalog cuts, specifications, and operating instructions of the complete list of materials and assemblies to be installed. Quantities of materials and equipment need not be included. No deviations from the specifications shall be allowed. The decision of the landscape architect shall be final in the determination of the quality of materials and equipment.

2.02 WATER METERS: Shall be provided by others.

2.03 PIPE

A. Mainline piping on pressure side of irrigation control valves:

- 1. 2" size and greater to be Polyvinyl Chloride (P.V.C.) 1120-1220, Class 315 and shall conform to ASTM D 2241-73 and D 2672-73.
- 2. Up to and including 1-1/2" size to be Polyvinyl Chloride (P.V.C.) 1120-1220, Schedule 40 and shall conform to ASTM D 1785-73.
- 3. Galvanized Steel, Standard wall, Schedule 40, capable of working pressure up to 600 psi shall run from the point of connection to back flow prevention device.
- 4. Piping from the point of connection to the back flow prevention device shall be as approved by local code.

B. Lateral line piping on non-pressure side of irrigation control valves:

- 1. 2" size and greater to be Polyvinyl Chloride (P.V.C.) 1120-1220, Class 315 and shall conform to ASTM D 2241-73 and D 2672-73.
- 2. Up to and including 1-1/2" size to be Polyvinyl Chloride (P.V.C.) 1120-1220, Schedule 40 and shall conform to ASTM D 1785-73.

2.04 FITTINGS

A. PVC Fittings: Schedule 40, Polyvinyl Chloride, high impact weight, as manufactured by Sloane, Lasco, medium or approved equal.

B. Fittings for Galvanized Steel Pipe: Schedule 40, standard weight as manufactured by Grinnell, or approved equal.

C. Connections between main and valves shall be PVC Schedule 80 nipples and fittings.

2.05 SLEEVE MATERIALS

A. For Control Wires: PVC 1120-1220, Class 200 pipe or heavy wall galvanized steel conduit.

B. For Water Lines: PVC 1120-1220, Class 200 pipe or heavy wall galvanized steel conduit.

2.06 IRRIGATION CONTROLLERS

A. Controller to be as shown on plans and is to be installed as per detail and manufacturer's specifications.

2.07 IRRIGATION CONTROL VALVES

A. Remote Control Valves: Valves to be as shown on plans and installed per details and manufacturer's specifications.

2.08 CONTROL WIRE

A. Wire: Solid copper wire, U.L. approved for direct burial in ground. Minimum gauge: #14. Common ground wire shall be white.

B. Splicing Materials: Wire connectors shall be Pentite or snip connectors.

C. All wires shall be labeled with the valve number at the controller and valve.

D. 120 wiring shall be as required by local code and installed by an electrician. It shall not be on a switched circuit.

E. Common wire shall be white. Control wires shall be other than white. Use a different color control wire for each controller.

2.09 VALVE BOXES

A. Remote Control Valves: To be Brooks, Green or approved equal, one per valve.

B. Gate Valves and Control Wire Stub-out Locations: To be Brooks, Green or approved equal, one per valve and Water Stub-out location.

2.10 QUICK-COUPLING VALVES

A. Quick coupling valves to be as per plans and details.

B. Furnish 2 valve keys fitted with hose valve assembly.

C. All valve boxes shall be purple in color or clearly labeled by the manufacturer to designate reclaimed water.

2.11 LANDSCAPE DRIP-LINE: Tubing as shown in legend and drawings.

A. Install in parallel and consistent rows at spacing indicated in all specified areas.

B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95% density under pavements, 85% under planted areas.

2.12 SPRINKLER HEADS

A. Heads as shown in legend and drawings.

2.13 BACK-FLOW PREVENTION ASSEMBLIES

A. Back-flow prevention device as shown in legend and drawings.

PART 3 EXECUTION

3.01 LAYOUT

A. Layout work as accurately as possible to drawings. Drawings are diagrammatic to the extent that swing joints, offsets and all fittings are not shown.

B. Full and complete coverage is required. Contractor shall make any necessary minor adjustments to layout required to achieve full coverage of irrigated areas at no additional cost to owner.

END OF SECTION 02750

SECTION 02800
LANDSCAPING

PART 1 GENERAL

1.01 SCOPE

A. Work Included: Perform all work necessary and required for the construction of the project as indicated. Such work includes but is not limited to the following:

- 1. Site preparation including weed and rubble removal.
- 2. Laboratory soil analysis.
- 3. Fumishing and spreading topsoil.
- 4. Finishing grading of planted areas.
- 5. Soil amendment.
- 6. Planting.

B. Related Work: The following items of associated work are included in other sections of these specifications:

- 1. Section 02750: Underground Irrigation System.

C. Dig trenches wide enough to allow a minimum of 6 in. between parallel pipe lines. Trenches shall be of sufficient depth to provide minimum cover from finish grade as follows:

1. Over PVC pipe on pressure side of irrigation control valve, concrete thrust blocks for quick coupling valves: 18 inches.

2. Over pipe on non-pressure side of irrigation control valve: 12 inches.

3.03 BACK FLOW PREVENTION DEVICE INSTALLATION

A. Install according to local code and manufacturer's instructions.

3.04 SLEEVING

A. Where pipes or wires must be installed under paving place them in sleeves with a 24" minimum depth and sufficient size to accommodate irrigation lines and/or wires.

B. Lack of pipe chase coordination does not relieve the contractor from installing the pipes and control wire shown on the drawing. In the event pipe chases were not installed prior to paving the contractor shall bore under the paving to accommodate pipes and wires.

C. All control wire shall be in Schedule 40 conduit from trench to controller. When valves are grouped together allow 12" between valve boxes, each valve in a separate box, (not to be placed in drainage swales, but kept in ground cover areas.)

3.05 PIPE LINE ASSEMBLY

A. Install pipe in accordance with manufacturer's instructions.

B. Solvent weld all PVC pipe and fittings using solvents (including primer) and methods as recommended by the manufacturer, except where screw connections are required. Clean pipe and fittings of dirt and moisture before assembly. PVC pipe may be assembled on ground surface beside trench. Snake pipe from side to side of trench following instructions of the complete list of materials and assemblies to be installed. Quantities of materials and equipment need not be included. No deviations from the specifications shall be allowed. The decision of the landscape architect shall be final in the determination of the quality of materials and equipment.

C. Use Teflon tape on all threaded fittings.

D. Thrust blocks shall be installed where the irrigation main changes direction as at ellis tees and where the irrigation main terminates. Pressure tests shall not be made for a period of 36-48 hours following the completion of pouring of the thrust blocks. Concrete thrust blocks for supply mains shall be sized and placed in strict accordance with the pipe manufacturer's specifications and shall be of an adequate size and so placed as to take all thrust created by the maximum internal B. Related Work: The following items of associated work are included in other sections of these specifications:

3.06 IRRIGATION CONTROL VALVES:

A. Install control valves in valve boxes where shown and group together where practical. Place no closer than 18 in. to walk edges, buildings and walls and other valves. Valve boxes shall be placed in relation to finish grade as follows:

- 1. 1" above grade when no mulch is used
- 2. 1/2" below grade when mulch is used
- 3. 1 1/2" with soil lawn
- 4. 2" with plant beds

B. The contractor shall paint on the cover of each valve box in 2" white stenciled letters with the valve number as designated on the plan.

C. Clearance between the highest part of the valve and the bottom of the valve box lid shall be 2" minimum and 4" maximum. (Lid must not rest on any part of valve and valves must not be buried too deep for convenient access.)

D. Clearance between the top of the piping and the bottom of the valve box and/or the valve box knock out, shall be a minimum of 2". (The box must not rest on the piping.)

E. Clearance between the valve and the sides of the valve box shall be a minimum of 3".

3.07 SPRINKLER HEADS

A. Install heads as per details.

B. Nozzles may be changed to control precipitation rate and G.P.M. with approval from the landscape architect.

3.08 QUICK COUPLING VALVES: Quick coupling valves to be installed as per detail.

3.09 AUTOMATIC CONTROLLER

A. Install per local code and manufacturer's instructions.

B. Grounding of irrigation controller shall be as per manufacturer's recommendations and as per local code.

3.10 CONTROL WIRING

A. Install control wires with sprinkler mains and laterals in common trenches wherever possible. Lay to the side of pipe line. Provide looped slack at valves of 18" and snake wires in trench to allow for contraction of wires. The wires in bundles at 10 ft. intervals. Provide expansion loop at all 90 degree angles, and every 100' of straight wire run.

B. Control wire splices at all remote control valves to be crimped and sealed with specified splicing materials. Line splices will be allowed only on runs of more than 500 ft. All line splices to be in separate valve box.

C. Install one continuous ground wire and one extra wire to all valves.

3.11 CLOSING OF PIPE AND FLUSHING OF LINES

A. Thoroughly flush out all water lines before installing heads, valves and other hydrants.

B. Test as specified.

3.12 PRESSURE TESTS

A. The contractor shall partially backfill, leaving all fittings exposed before testing.

B. Cap all valve openings and test the mainline pipe at full line working pressure and visually check all fittings.

3.13 BACKFILL AND COMPACTING

A. After system is operating and required tests and inspections have been made, backfill excavations and trenches with clean soil, free of rubbish. All pipe shall have a bedding of 2" under and 4" over of select, rock free backfill.

B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95% density under pavements, 85% under planted areas.

C. Compact trenches in areas to be planted by thoroughly flooding the backfill. Trenching process may be used in those areas.

D. Dress off all areas to finish grades.

E. Any setting more than 1" which may occur during the guarantee period shall be brought to finish grade by the contractor at his expense.

END OF SECTION 02750

1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work and provide for all inspections and permits required by federal, state, and local authorities in furnishing, transporting and installing materials.

B. Certificates of inspection required by law for transportation shall accompany the invoice for each shipment of plants. File copies of certificates with landscape architect after acceptance of material.

C. Any delay in completion of planting operations which extends the planting period shall extend the Maintenance and Warranty Periods correspondingly.

1.03 SELECTION, TAGGING AND ORDERING OF PLANT MATERIAL

A. Submit documentation to landscape architect at least 7 days prior to start of work under this section that all plant material has been ordered. Arrange procedure for observation with landscape architect at time of submission.

B. Plants shall be subject to observation and approval by landscape architect at place of growth or upon delivery for conformity to specifications. Such approval shall not impair the right of observation and rejection during progress of the work. Subsequent replacement of plant material at place of growth to landscape architect. Written request shall state the place of growth and the quantity and variety of plants to be observed. Landscape architect reserves the right to release observation at this time if, in his judgment, a sufficient number of plants are not available for observation or not in the landscape architect's control.

C. Substitution of plant material will not be permitted unless authorized in writing by landscape architect. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of contract price.

1.04 COORDINATION: Contractor shall coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.

1.05 INSPECTION OF SITE: Contractor shall visit site and inspect conditions as they exist prior to submitting bid. Site dimensions, water pressure and general conditions shall be verified prior to beginning of any work at the planting site.

1.06 INTENT OF DRAWINGS AND SPECIFICATIONS: It is the intent of the drawings and specifications to provide planting plans in writing, ready for owner's use. Any items not specifically shown in the drawings or called for in the specifications, but normally required to conform with such intent, as to be considered as part of the work. Written dimensions take precedence over scale dimensions.

1.07 APPROVAL: Whenever the terms "approve", "approval" or "approved" are used herein, they mean approval of landscape architect in writing.

1.08 PRODUCT HANDLING

A. Furnish standard products in manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.

B. Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.

1.09 PROTECTION OF EXISTING PLANTS TO REMAIN

A. Do not store materials or equipment, permit burning, or operate or park equipment within designated plant protection zones as specified on the plans.

B. Notify landscape architect in any case where contractor feels grading or other construction called for by Contract Documents may damage existing plants to remain. Do not proceed with such work until directed by landscape architect.

C. If existing plants are damaged during construction, contractor shall replace such plants of the same species and size as those damaged at no cost to owner. Determination of extent of damage and value of damaged plant shall rest solely with landscape architect.

1.10 GRADING

A. Prior to planting grading will be brought to within 10" +/- foot of finish grade with soil suitable for planting by the landscape contractor. It is the responsibility of the landscape contractor to verify that no conflict exists with the grading plan. Fine finish grading will be done by the landscape contractor.

2.03 PREPARATION OF LANDSCAPE AREA PLANTING SOILS

A. Prior to any work in planting areas all construction debris shall be removed.

B. Planting Soil (excluding trees):

D. Structural fill and/or compacted engineered fill and/or any other soil deemed unsuitable for horticultural use as defined by Sections 2.2-A, 2.2-B and 2.2-C. Imported landscape area planting soils shall be tested by an approved soil laboratory for horticultural suitability and verified to be capable of sustaining healthy plant life. Landscape area planting soils may be obtained through stockpiling of existing topsoil or imported soil of equal texture and quality as determined by approved soil laboratory analysis.

E. Lime Treated Soil: If lime is used for soil compaction in landscape areas, all lime treated soil shall be removed to a depth equal or more to the depth of the treated soil. Soil shall be replaced with import soil as described in the landscape specifications.

F. Existing Soil: Existing soil shall be tested by an approved soil laboratory analysis. Soil shall be analyzed for salinity and landscape area soils shall be treated with inorganic fertilizer amendments prior to planting.

G. Soil Fertility: Adequate amounts of nitrogen, potassium, phosphorus, calcium, and magnesium shall be available to support healthy plant growth. Soil shall be analyzed for salinity and landscape area soils shall be treated with inorganic fertilizer amendments prior to planting.

H. Lime Treated Soil: If lime is used for soil compaction in landscape areas, all lime treated soil shall be removed to a depth equal or more to the depth of the treated soil. Soil shall be replaced with import soil as described in the landscape specifications.

I. Soil Chemistry: All planting soils shall meet the following soil chemistry parameters: