DESIGN INTENT

THE LANDSCAPE IS DESIGNED TO COMPLY WITH THE PRESCRIPTIVE COMPLIANCE OPTION OF THE LOCALLY ADOPTED STATE OF CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE ("WELO"). COMPLIANCE WITH MANDATORY ELEMENTS OF WELO MUST BE DOCUMENTED ON LANDSCAPE PLANS.

THE PLANS ARE DESIGNED TO DEMONSTRATE FIRE SAFER LANDSCAPING APPROACHES WITH LOWER. LESS WOODY PLANTS CLOSE TO BUILDINGS, AND TREES POSITIONED TO ALLOW MAINTENANCE OF BRANCHES 10' AWAY FROM BUILDINGS.

LOW IMPACT DEVELOPMENT ("LID") ELEMENTS SUCH AS PERMEABLE PAVING, AND DOWNSPOUTS DISCONNECTED FROM STORM SEWERS AND DRAINING TO RAINGARDENS OR LANDSCAPE STRIPS, ARE PROVIDED TO INFILTRATE MORE STORMWATER RUN-OFF ON SITE, INCREASE GROUNDWATER RECHARGE AND IMPROVE THE AMOUNT OF SOIL MOISTURE AVAILABLE TO PLANTS THEREBY REDUCING IRRIGATION NEEDS.

LANDSCAPE DESIGN REQUIREMENTS

THE PLANTINGS ARE DESIGNED TO COMPLY WITH THE APPENDIX D "PRESCRIPTIVE COMPLIANCE" OPTION OF WELO:

- 1. MEDIUM WATER USE PLANTINGS DO NOT EXCEED 25 PERCENT OF THE TOTAL PLANTED AND IRRIGATED AREA.
- 2. LOW WATER USE OR CLIMATE-ADAPTED SPECIES THAT REQUIRE LITTLE OR NO SUMMER WATER ARE SELECTED FOR AT LEAST 75 PERCENT OF THE PLANTED AND IRRIGATED AREA
- 3. PERMITTED LANDSCAPE AREA MUST BE SMALLER THAN 2500 SF OF PLANTED AND IRRIGATED AREA 4. PLANS ARE INTENDED FOR USE ON SITES WITH LESS THAN 8% SLOPES.

- ADDITIONAL GUIDELINES FOR THE PLANTINGS:
- A. FIRE SAFER PLANTINGS ARE INDICATED ON PLANT LISTS AND USED WITHIN 5' OF HOMES.
- B. CONVENTIONAL TURF IS NOT PROVIDED DUE TO HIGH WATER USE.
- C. TREES ARE LOCATED FOR SHADE ON GARDEN AREAS AND TO PROVIDE SOLAR ACCESS FOR SOLAR PANELS ON ROOFS. TREES ARE LOCATED AWAY FROM BUILDING STRUCTURES SO THAT BRANCHES CAN BE MAINTAINED 10' FROM ROOFS AND CHIMNEYS.
- D. PLANTS ARE PLACED IN APPROPRIATE MICROCLIMATES BY EVALUATING THE DIRECTION THE FRONT YARD IS FACING AND NORTH ARROWS ARE INDICATED ON PLANS.
- E. PLANTS ARE GROUPED IN IRRIGATION ZONES ("HYDROZONES") BASED ON SIMILAR WATER NEEDS AS DEFINED BY THE STATE WATER USE CLASSIFICATIONS OF LANDSCAPE SPECIES IV ("WUCOLS IV") **REGION 1 LIST**
- F. RAINWATER AND STORMWATER ELEMENTS SHOULD BE REVIEWED WITH SITE DESIGN TEAM AND GENERAL CONTRACTOR PRIOR TO SITE GRADING
- G. PERVIOUS PAVING OPTIONS SHOULD BE REVIEWED WITH SITE DESIGN TEAM AND GENERAL CONTRACTOR
- H. SEE SONOMA- MARIN SAVING WATER PARTNERSHIP WEBSITE FOR FURTHER INFORMATION AND FAQ: http://www.savingwaterpartnership.org/landscape-design-templates/

IRRIGATION DESIGN REQUIREMENTS AND GUIDELINES

THE IRRIGATION SYSTEM IS DESIGNED TO COMPLY WITH THE PRESCRIPTIVE COMPLIANCE OPTION OF WELO:

- 1. INSTALL AN AUTOMATIC IRRIGATION CONTROLLER THAT DOES NOT LOSE PROGRAMMING DATA AFTER A POWER FAILURE (NON-VOLATILE MEMORY) AND UTILIZES EVAPOTRANSPIRATION OR SOIL MOISTURE SENSOR DATA.
- 2. INSTALL A RAIN SENSOR.

ADDITIONAL GUIDELINES FOR THE IRRIGATION SYSTEMS:

- 3. SYSTEM IS DESIGNED TO REDUCE WATER USE TO THE MINIMUM AMOUNT TO SUSTAIN HEALTHY PLANT GROWTH AND TO PREVENT RUNOFF.
- 4. A MANUAL SHUT-OFF VALVE IS INSTALLED AS CLOSE AS POSSIBLE TO THE POINT OF CONNECTION.
- 5. PRESSURE REGULATION IS PROVIDED TO ENSURE THE DYNAMIC PRESSURE OF THE SYSTEM IS WITHIN
- THE MANUFACTURERS RECOMMENDED PRESSURE RANGE FOR THE IRRIGATION COMPONENTS. 6. ALL IRRIGATION EMISSION DEVICES MUST MEET THE ANSI STANDARD, ASABE/ICC 802-2014 LANDSCAPE IRRIGATION SPRINKLER AND EMITTER STANDARD. SPRINKLER HEADS MUST DOCUMENT A DISTRIBUTION
- UNIFORMITY LOW QUARTER OF 0.65 OR HIGHER. 7. ALL AREAS UTILIZE DRIP IRRIGATION ASSEMBLIES TO ENABLE THE SCALING OF PLANS. 8. SPRAY IRRIGATION NOT ALLOWED.

TREE IRRIGATION:

9. ALLOW DEEP ROOT WATERING OF THE ENTIRE TREE ROOT SYSTEM WHICH EXTENDS WELL BEYOND THE DRIPLINE OF THE TREE CANOPY.

10. ALLOW FOR MOVING THE TREE IRRIGATION DISTRIBUTION LINES AWAY FROM TREE TRUNK AFTER

- ESTABLISHMENT AND EXPANDING THE LINE OUTWARD WITH ROOT DEVELOPMENT.
- 11. PROVIDE SEPARATE TREE VALVES SO THE TREE VALVE CAN BE LEFT ON DURING PERIODS OF DROUGHT.

SOIL MANAGEMENT REQUIREMENTS

SOIL MANAGEMENT IS DESIGNED TO COMPLY WITH THE PRESCRIPTIVE COMPLIANCE OPTION OF WELO: 1. INCORPORATE COMPOST AT A RATE OF AT LEAST FOUR CUBIC YARDS PER 1,000 SQUARE FEET TO A DEPTH OF SIX INCHES INTO THE LANDSCAPE AREA.

2. AFTER PLANTING. A MINIMUM THREE INCH LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS.

3. MULCH CAN BE REDUCED FOR NATIVE GRASS AND/OR WILDFLOWER AREAS.

STEP 5

I HAVE COM WATER EFI

STE	<u>EP (</u>
YES	NO

SYMBO

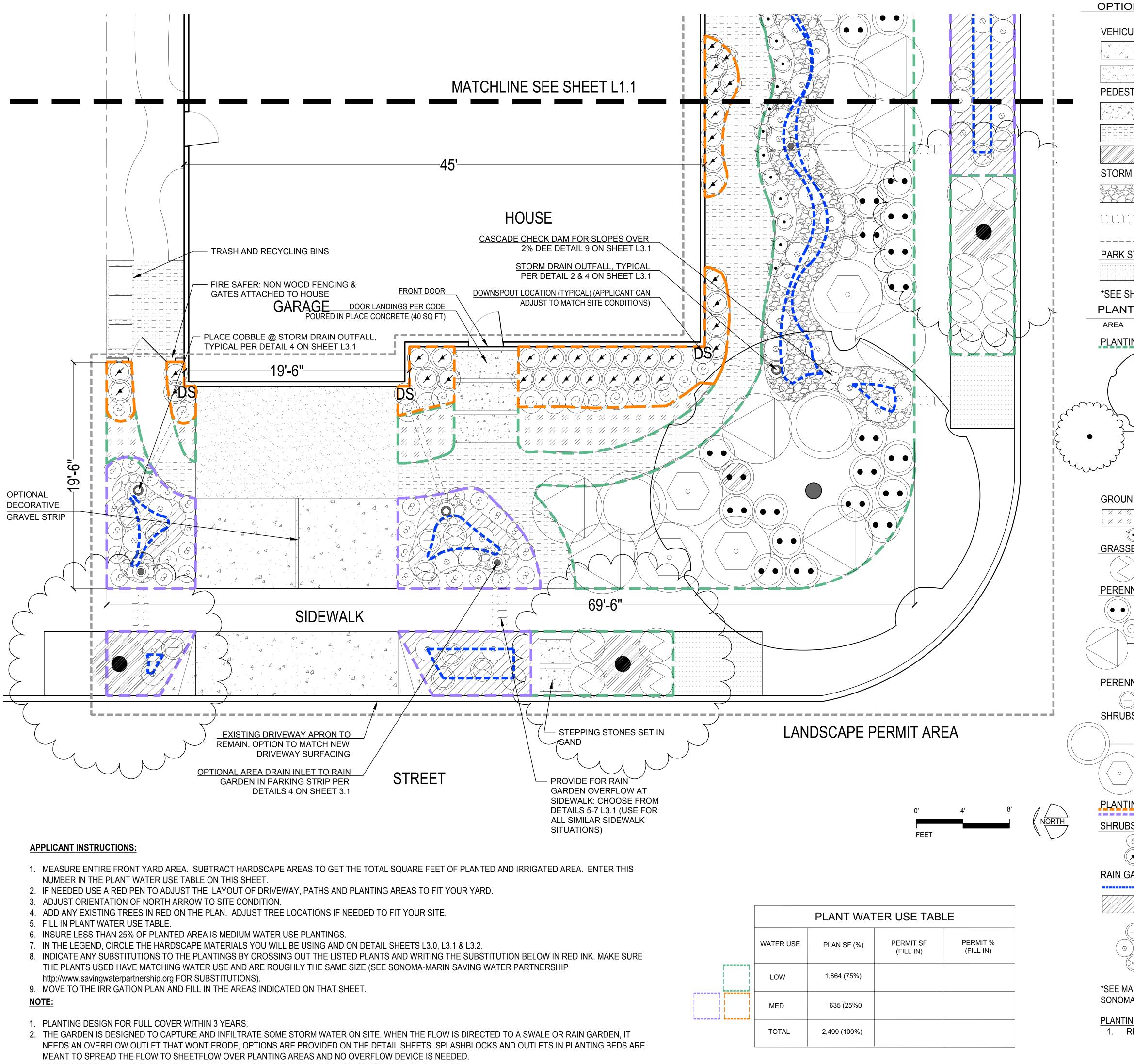
REFER

490.1 (c) & 491 DEFINI D (b) (A-H) D (b) (H): L D (b) (5): IR D (b) (2) & D(c) MWEL **SECTION 4** (a)(1)(B) IRF

8. TURF: 9. TURF OCCA

POST-CONSTRUCTION REQUIREMENTS	PRE CONSTRUCTION - PERMIT APPLICATION BY OWNER - FILL IN AREAS BELOW	
STEP 5: POST-CONSTRUCTION CERTIFICATION	CONFIRM APPLICABILITY	
TO BE SIGNED BY APPLICANT	THIS PLAN SHEET IS FOR USE FOR: 1) FRONT YARD LANDSCAPES UP TO 2,500 SF WHICH THE LOCAL JURISDICTION PERMIT AGENCY ALLOWS TO COMPLY WITH PRESCRIPTIVE COMPLIANCE MEASURES. SEE APPENDIX D OF MWELO.	
WATER EFFICIENT LANDSCAPE ORDINANCE	STEP 1: PROJECT INFORMATION	ABLA
APPLICANT NAME (PLEASE PRINT)	TO BE FILLED OUT BY APPLICANT	ANN BAKER LANDSCAPE ARCHITECTUR 625 2ND ST., STE 110
	DATE:	PETALUMA, CA 94952 TEL.: (707) 772-5062 EMAIL: landarches@gmail.com
	PROJECT APPLICANT (NAME):	daily acts
STEP 6: WELO FINAL INSPECTION CHECKLIST	PROJECT ADDRESS:	because every choice matters
YES NO NA <u>PLANTING</u>	TOTAL PROJECT LANDSCAPE AREA <u></u> <i>K</i> 2500 SF):(SF)	Hore Site
1. ALL PLANTS INSTALLED ARE LISTED ON PLANS OR ON APPROVED PLANT SUBSTITUTION LIST	MEDIUM WATER USE PLANT MATERIAL AREA <u>≮</u> 25%):(SF)	digital mapping solutions
 2. 75% OR MORE OF THE PLANTS ARE LOW WATER USE PER WUCOLS REGION 1 3. NO STANDARD HIGH WATER USE TURF HAS BEEN INSTALLED 	LOW TO VERY LOW NON-TURF PLANT MATERIAL AREA <u>≹</u> 75%):(SF)	- Equinox
	PROJECT TYPE: NEW RESIDENTIAL	
	WATER SUPPLY TYPE :	
	LOCAL WATER PURVEYOR:	SHERWOOD DESIGN ENGINEERS
	STEP 2: SIGN PRE-CONSTRUCTION AGREEMENT	P D G
	TO BY SIGNED BY APPLICANT	PANORAMIC DESIGN GROUP
	I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE PRESCRIPTIVE COMPLIANCE OPTION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE	
SPECIFICATIONS 4. RAINSENSOR AND WEATHER SENSOR (IF REQUIRED FOR WEATHER DATA) INSTALLED PER MANUFACTUERS		
SPECIFICATION AND IS FUNCTIONING	APPLICANT NAME (PLEASE PRINT)	
		BLA
	APPLICANT SIGNATURE DATE STEP 3: PROVIDE PERMIT AGENCY REQUIRED PLANS	
DAYS PER WEEK, START TIME, AND RUN TIMES 9. IRRIGATION SYSTEM SHUT OFF VALVE INSTALLED	PLANS TO BE PROVIDED BY APPLICANT: OPTIONAL PLANS	DESIGN TEMPLATE
 IRRIGATION SYSTEM SHUT OFF VALVE LOCATION IS AS SHOWN ON PLAN OR ON AS-BUILT II. DRIP IRRIGATION CONTROL ZONE ASSEMBLIES ARE INSTALLED AND FUNCTIONING II. DRIP IRRIGATION LINES ARE INSTALLED AS SHOWN ON PLAN & DETAILS II. DRIP FLUSHOUTS ARE INSTALLED LOWEST POINT OF EACH ZONE AND ARE FUNCTIONING II. SYSTEM OPERATES WITHOUT LEAKS, BREAKS OR RUNOFF II. DRIP FLUSHOUTS ARE INSTALLED IN ADDROVED INDICATION FOUNDMENT LIST. OR FOUND 	 L-0.0 PERMIT COVER SHEET L-1.0 LANDSCAPE DESIGN PLAN L-1.1 LANDSCAPE DESIGN PLAN L-2.0 IRRIGATION DESIGN PLAN L-2.1 IRRIGATION DESIGN PLAN L-2.2 IRRIGATION DETAIL SHEET L-3.0 PAVING DETAILS L-3.1 L.I.D. DETAILS L-3.2 PLANTING DETAILS 	LANDSCAPE N SAVING WA artnership.org
Image:	STEP 4: SIGN DISCLAIMER	TIAL MARII waterpa
1. CHANGES ARE NOTED ON AS-BUILT PLAN AND IS PROVIDED AT TIME OF INSPECTION	TO BE SIGNED BY APPLICANT	IDEN oma-I saving E: ADDR
 SYMBOLS & DEFINITIONS CLIMATE ADAPTIVE: NON-NATIVE PLANTS WHICH ARE ADAPTED TO LOCAL MICROCLIMATES. INVASIVE PLANTS: CALIFORNIA INVASIVE PLANT COUNCIL ("CaI-IPC") DEFINES INVASIVE PLANTS AS: PLANTS THAT ARE NOT NATIVE TO AN ENVIRONMENT, AND ONCE INTRODUCED, THEY ESTABLISH, QUICKLY REPRODUCE AND SPREAD, AND CAUSE HARM TO THE ENVIRONMENT, ECONOMY, OR HUMAN HEALTH. HYDROZONE: AN AREA OF THE LANDSCAPE HAVING PLANTS WITH SIMILAR WATER NEEDS AND ROOTING DEPTHS AND THE SAME MICRO-CLIMATE. IRRIGATION CONTROLLER: SMART CONTROLLERS ARE REQUIRED. THESE ADJUST AUTOMATICALLY USING WEATHER OR SOIL MOISTURE 	BY USING THESE PLANS, I AGREE TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS (SONOMA COUNTY WATER AGENCY, CITY OF SANTA ROSA, MARIN MUNICIPAL WATER DISTRICT, NORTH MARIN WATER DISTRICT, CITY OF ROHNERT PARK, CITY OF PETALUMA, CITY OF COTATI, CITY OF SONOMA, VALLEY OF THE MOON WATER DISTRICT AND TOWN OF WINDSOR) AND THEIR DIRECTORS, OFFICERS, AGENTS, EMPLOYEES AND LANDSCAPE DESIGN CONSULTANTS AGAINST ANY AND ALL LOSS, LIABILITY, EXPENSE, CLAIMS, SUITS AND DAMAGES, INCLUDING ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM THE USE OF THIS LANDSCAPE PLAN. I UNDERSTAND THAT IT IS MY RESPONSIBILITY AS THE PROJECT OWNER TO ENSURE THAT PLAN ELEMENTS ARE IMPLEMENTED SAFELY AND ACCORDING TO APPLICABLE STATUTES, RULES, REGULATIONS, ORDINANCES AND/OR CODES.	NAM WATER NAM
 DATA. MICROCLIMATE: THE CLIMATE WITHIN EACH DIFFERENT SUB-AREA OF THE LANDSCAPE WHICH DEPENDS ON ITS SUN AND WIND EXPOSURE, PROXIMITY TO REFLECTIVE SURFACES, PLANT DENSITY AND OTHER FACTORS. WELO: THE CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE THAT REQUIRES WATER CONSERVATION MEASURES TO BE IMPLEMENTED IN LANDSCAPES AND HAS BEEN IN EFFECT SINCE 1990. PLANT WATER USE: AN ESTIMATE OF THE AMOUNT OF WATER NEEDED BY PLANTS TO THRIVE IN WARM/DRY PERIODS. PLANTS ARE GROUPED INTO VERY LOW, LOW, MODERATE AND HIGH WATER USE AND ARE ASSIGNED PLANT FACTOR VALUES. TURF: A GROUND COVER SURFACE OF MOWED GRASS (CONVENTIONAL LAWN) TURF ALTERNATIVE: A LOW WATER USE GRASS OR GROUNDCOVER PLANTING THAT SPREADS TO FORM A LOW COVER THAT CAN BE OCCASIONALLY WALKED UPON. WEATHER SENSOR: SENSOR CONNECTED TO THE IRRIGATION CONTROLLER WHICH DETECTS RAIN, FREEZE, WIND ETC. AND SUSPENDS 	SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS AND LANDSCAPE DESIGN CONSULTANTS MAKE NO REPRESENTATIONS AND GRANT NO WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS AND DESIGN CONSULTANTS EACH SPECIFICALLY DISCLAIM ANY OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, OR EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF QUALITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE OR ANY WARRANTY AS TO THE VALIDITY OF ANY PATENTS OR THE NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.	SHEET TITLE: RESIDENTIAL
OR ADJUSTS IRRIGATION OPERATION.	APPLICANT NAME (PLEASE PRINT)	LANDSCAPE PERMIT COVER
REFERENCE	APPLICANT SIGNATURE DATE	SHEET
TITLE 23 CHAPTER 2.7 MWELO: THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE	AGENCY STAMP	DATE
MWELO SECTIONS:		PERMIT PLAN SEPTEMBER 26, 2018
490.1 (c) & D 9 (a): APPLICABILITY 491 DEFINITIONS D (b) (A-H): PROJECT INFORMATION D (b) (H): LANDSCAPE DOCUMENTATION PACKAGE D (b) (5): IRRIGATION DESIGN PLAN D (b) (2) & (3) (B): SOIL MANAGEMENT D(c) MWELO FINAL INSPECTION CHECKLIST SECTION 492.7		L-0.0
(a)(1)(B) IRRIGATION CONTROLLER		

(a)(1)(D) WEATHER SENSOR



- 3. REVIEW IRRIGATION SHEETS AND INSTALL SLEEVES UNDER PAVING SURFACES IN THEIR CORRECT LOCATION.

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INAL	IVIAI		-3 L	CGEI	ND

		UNITS	PLAN QUANTITY	PERMIT QUANTITY
ULAR	PAVING			(FILL IN)
 -	CONCRETE	SF	130	
- - 	GRAVELPAVE SEE DETAIL 6 ON SHEET L3.0	SF	165	
STRIAN	I PAVING			
	CONCRETE (POURED IN PLACE)	SF	40	
-	AGGREGATE PAVING, CHOOSE FROM DETAILS 1-5 ON SHEET L3.0	SF	486	
-	MULCH SEE DETAIL 5 ON SHEET L3.2	SF		
A WAT	ER ELEMENTS (OPTIONAL)			
-	SWALE/CASCADE: COBBLE EDGES, 3/8" TRINITY GRAVEL WITH PLANTINGS IN CENTER	LF	70	
)) -	STORM DRAINAGE ACROSS/UNDER PATH, SEE DETAIL 5-7 ON SHEET L3.1	EA	5	
== - Strip	STORM DRAIN PIPE SEE DETAIL 2 ON SHEET L3.1 (OPTIONAL)	LF	35	
	3/8" DECORATIVE GRAVEL OR MULCH	SF	216	
				┕╼╼╼╼╼┛

*SEE SHEETS L3.0-3.2 FOR MATERIALS OPTIONS

PLANTING LEGEND

I IIN	IG LEGEI	ND				
	BOTANIC	AL NAME	SIZE	SPACING	PLAN QUANTITY	PERMIT QUANTITY
ING	LOW WATE	RUSE				(FILL IN)
$\overline{}$	$\overline{}$					
	•	LARGE TREE QUERCUS LOBATA (VALLEY OAK) QUERCUS AGRIFOLIA (COAST LIVE OAK)	15G	30-60' O.C.	1	
<u> </u>	,rully	MEDIUM TREE ARBUTUS 'MARINA' (STRAWBERRY TREE) CERCIS (REDBUD) GINKGO (MAIDENHAIR TREE)	15G	20-40' O.C.	4	
Junu		LARGE SHRUB CEANOTHUS 'RAY HARTMAN'	5G	8' O.C.	2	
NDC	OVER					
	- SALVIA 'DARA'S (DARA'S CHOICE		4"	30" O.C.	23	
SES		ENSIS 'TOMALES BAY' (IDAHO FESCUE) CONCINNA. BABY BLUE EYES, POPPIES	4"	18" O.C.	45	
	- MUHLENBERGIA *SEED TIDY TIPS	DUBIA (PINE MUHLY)	4"	3' O.C.	22	
INIA	LS 0-2' SUN					
	- EPILOBIUM CAN (PINK CA FUCHS		4"	3' O.C.	35	
) (C	- SIDALCEA MALV	IFLORA (DWARF CHECKERBLOOM)	4"	2' O.C.	18	
	- LESSINGIA FILA((SILVER CARPET	GINIFOLIA 'SILVER CARPET' BEACH ASTER)	1G	6' O.C.	9	
INIA	LS 2-4' SUN	l				
	- AQUILEGIA FOR	MOSA (WESTERN COLUMBINE)	4"	18".O.C.	6	
3S 3-	-6' SUN					
	- CEANOTHUS 'CC	NCHA' (CALIFORNIA LILAC)	1G	6' O.C.	6	
	- FRANGULA CALI (COFFEEBERRY)	FORNICA 'SEAVIEW IMPROVED'	1G	3' O.C.	7	

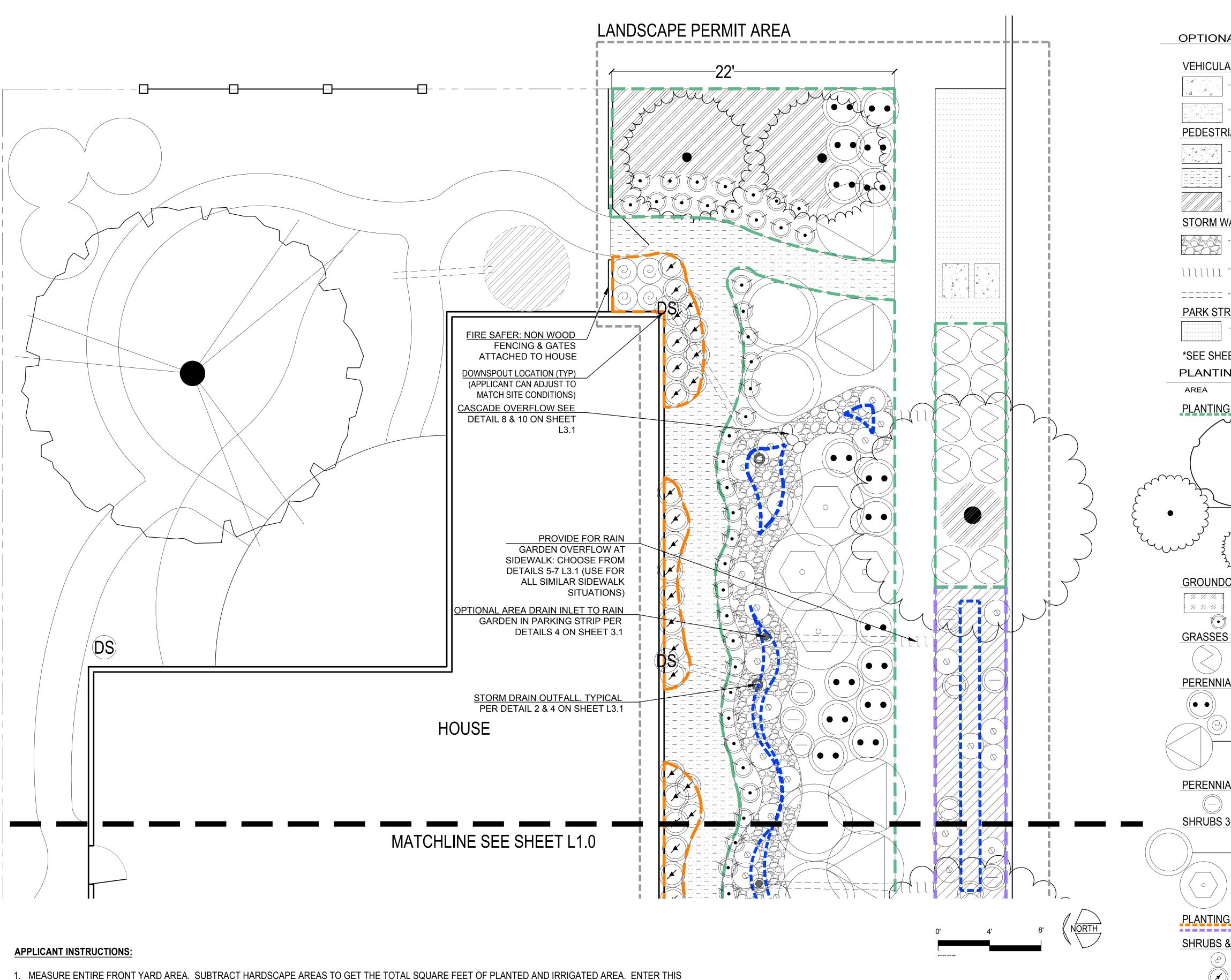
PLANTING MEDIUM WATER USE SHRUBS & PERENNIALS SUN TO PT. SHADE

S & FERENNIALS SON TO FT. SHADE			
S - ARCTOSTAPHYLOS EDMUNDSII 'BERT JOHSON'	1G	24" O.C.	29
- HEUCHERA MAXIMA OR H. VILLOSA 'AUTUMN BRIDE'	4"	30"	52
SARDEN (OPTIONAL)			
BOTTOM PERIMETER OF RAIN GARDEN			
- CAREX PRAEGRACILIS (CA FIELD SEDGE) OR BIOSWALE SOD MIX *SEED MIMULUS CARDINALIS	2" (OR SOD)	16" O.C.	30
- AQUILEGIA FORMOSA (WESTERN COLUMBINE)	4"	18".O.C.	12
- JUNCUS PATENS (CALIFORNIA GREY RUSH)	2"	3' O.C.	45
- ACHILLEA 'MOONSHINE' (MOONSHINE YARROW)	1G	2' O.C.	8
			┕╺╴╸╸╸┙┛

*SEE MASTER PLANT LIST FOR PLANT SUBSTITUTIONS AND SHADE ALTERNATES, AVAILABLE FROM SONOMA-MARIN SAVING WATER PARTNERSHIP http://www.savingwaterpartnership.org.

PLANTING NOTES: 1. REFER TO PLANTING DETAILS ON SHEET L3.2.

BY USING THESE PLANS, I AGREE TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS (SONOMA COUNTY WATER AGENCY, CITY OF SANTA ROSA, MARIN MUNICIPAL WATER DISTRICT, NORTH MARIN WATER DISTRICT, CITY OF ROHNERT PARK, CITY OF PETALUMA, CITY OF COTATI, CITY OF SONOMA, VALLEY OF THE MOON WATER DISTRICT AND TOWN OF WINDSOR) AND THEIR DIRECTORS, OFFICERS, AGENTS, EMPLOYEES AND LANDSCAPE DESIGN CONSULTANTS AGAINST ANY AND ALL LOSS, LIABILITY, EXPENSE, CLAIMS, SUITS AND DAMAGES, INCLUDING ATTORNEY'S FEES, ARISING
SUITS AND DAMAGES, INCLUMING ALTORNET SPEES, ANDING OUT OF OR RESULTING FROM THE USE OF THIS LANDSCAPE PLAN. I UNDERSTAND THAT IT IS MY RESPONSIBILITY AS THE PROJECT OWNER TO ENSURE THAT PLAN ELEMENTS ARE IMPLEMENTED SAFELY AND ACCORDING TO APPLICABLE STATUTES, RULES, REGULATIONS, ORDINANCES AND/OR CODES. SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS AND LANDSCAPE DESIGN CONSULTANTS MAKE NO REPRESENTATIONS AND GRANT NO WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS AND DESIGN CONSULTANTS EACH SPECIFICALLY DISCLAIM ANY OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, OR EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF QUALITY,
MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE OR ANY WARRANT AS TO THE VALIDITY OF ANY PATENTS OR THE NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.
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because every choice matters
HORE Site digital mapping solutions
LANDSCAPE
PANORAMIC DESIGN GROUP LANDSCAPE ARCHITECTURE
RESIDENTIAL LANDSCAPE DESIGN TEMPLATE sonoma-marin saving water partnership www.savingwaterpartnership.org NAME:
SANNG WATER
SHEET TITLE: LAYOUT & PLANTING PLAN NATIVE ADAPTIVE B (CORNER LOT)
DATE permit plan september 10, 2019
L-1.0



- 1. MEASURE ENTIRE FRONT YARD AREA. SUBTRACT HARDSCAPE AREAS TO GET THE TOTAL SQUARE FEET OF PLANTED AND IRRIGATED AREA. ENTER THIS NUMBER IN THE PLANT WATER USE TABLE ON THIS SHEET.
- 2. IF NEEDED USE A RED PEN TO ADJUST THE LAYOUT OF DRIVEWAY, PATHS AND PLANTING AREAS TO FIT YOUR YARD.
- 3. ADJUST ORIENTATION OF NORTH ARROW TO SITE CONDITION.
- 4. ADD ANY EXISTING TREES IN RED ON THE PLAN. ADJUST TREE LOCATIONS IF NEEDED TO FIT YOUR SITE.
- 5. FILL IN PLANT WATER USE TABLE.
- 6. INSURE LESS THAN 25% OF PLANTED AREA IS MEDIUM WATER USE PLANTINGS.
- 7. IN THE LEGEND, CIRCLE THE HARDSCAPE MATERIALS YOU WILL BE USING AND ON DETAIL SHEETS L3.0, L3.1 & L3.2.
- 8. INDICATE ANY SUBSTITUTIONS TO THE PLANTINGS BY CROSSING OUT THE LISTED PLANTS AND WRITING THE SUBSTITUTION BELOW IN RED INK. MAKE SURE THE PLANTS USED HAVE MATCHING WATER USE AND ARE ROUGHLY THE SAME SIZE (SEE SONOMA-MARIN SAVING WATER PARTNERSHIP http://www.savingwaterpartnership.org FOR SUBSTITUTIONS).
- 9. MOVE TO THE IRRIGATION PLAN AND FILL IN THE AREAS INDICATED ON THAT SHEET.

NOTE:

- 1. PLANTING DESIGN FOR FULL COVER WITHIN 3 YEARS.
- 2. THE GARDEN IS DESIGNED TO CAPTURE AND INFILTRATE SOME STORM WATER ON SITE. WHEN THE FLOW IS DIRECTED TO A SWALE OR RAIN GARDEN, IT NEEDS AN OVERFLOW OUTLET THAT WONT ERODE, OPTIONS ARE PROVIDED ON THE DETAIL SHEETS. SPLASHBLOCKS AND OUTLETS IN PLANTING BEDS ARE MEANT TO SPREAD THE FLOW TO SHEETFLOW OVER PLANTING AREAS AND NO OVERFLOW DEVICE IS NEEDED.
- 3. REVIEW IRRIGATION SHEETS AND INSTALL SLEEVES UNDER PAVING SURFACES IN THEIR CORRECT LOCATION.

*SEE MASTER PLANT LIST FOR PLANT SUBSTITUTIONS AND SHADE ALTERNATES. AVAILABLE FROM SONOMA-MARIN SAVING WATER PARTNERSHIP http://www.savingwaterpartnership.org.

PLANTING NOTES:

OPTIONAL MATERIALS LEGEND

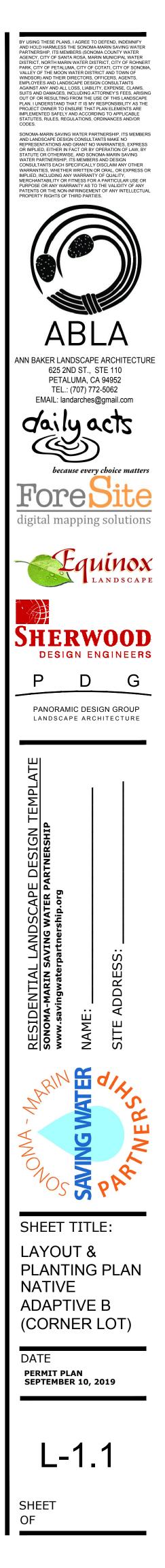
Al	_ MATERIALS LEGEND			
		UNITS	PLAN QUANTITY	PERMIT QUANTITY
٩R	PAVING			(FILL IN)
-	CONCRETE	SF	130	
-	GRAVELPAVE SEE DETAIL 6 ON SHEET L3.0	SF	165	
RIA	N PAVING			
-	CONCRETE (POURED IN PLACE)	SF	40	
-	AGGREGATE PAVING, CHOOSE FROM DETAILS 1-5 ON SHEET L3.0	SF	486	
-	MULCH SEE DETAIL 5 ON SHEET L3.2	SF		
/A1	ER ELEMENTS (OPTIONAL)			
-	SWALE/CASCADE: COBBLE EDGES, 3/8" TRINITY GRAVEL WITH PLANTINGS	LF	70	
-	STORM DRAINAGE ACROSS/UNDER PATH, SEE DETAIL 5-7 ON SHEET L3.1	EA	5	
- 21F	STORM DRAIN PIPE SEE DETAIL 2 ON SHEET L3.1 (OPTIONAL)	LF	35	
11	3/8" DECORATIVE GRAVEL OR MULCH	SF	216	
-	JO DECORATIVE GRAVEL OR MOLON	ЭГ	210	

*SEE SHEETS L3.0-3.2 FOR MATERIALS OPTIONS

NG LEGEND				
BOTANICAL NAME	SIZE	SPACING	PLAN QUANTITY	PERMIT QUANTITY
G LOW WATER USE				(FILL IN)
• <u>LARGE TREE</u> QUERCUS LOBATA (VALLEY OAK) QUERCUS AGRIFOLIA (COAST LIVE OAK)	15G	30-60' O.C.	1	
<u>MEDIUM TREE</u> ARBUTUS 'MARINA' (STRAWBERRY TREE) CERCIS (REDBUD) GINKGO (MAIDENHAIR TREE)	15G	20-40' O.C.	4	
• <u>E LARGE SHRUB</u> • E CEANOTHUS • 'RAY HARTMAN' COVER	5G	8' O.C.	2	
- SALVIA 'DARA'S CHOICE' (DARA'S CHOICE HYBRID SAGE)	4"	30" O.C.	23	
- FESTUCA IDAHOENSIS 'TOMALES BAY' (IDAHO FESCUE) *SEED CLARKIA CONCINNA, BABY BLUE EYES, POPPIES	4"	18" O.C.	45	
- MUHLENBERGIA DUBIA (PINE MUHLY) *SEED TIDY TIPS	4"	3' O.C.	22	
ALS 0-2' SUN				
- EPILOBIUM CANUM 'MARIN PINK' (PINK CA FUCHSIA)	4"	3' O.C.	35	
- SIDALCEA MALVIFLORA (DWARF CHECKERBLOOM)	4"	2' O.C.	18	
LESSINGIA FILAGINIFOLIA 'SILVER CARPET' (SILVER CARPET BEACH ASTER)	1G	6' O.C.	9	
ALS 2-4' SUN				
- AQUILEGIA FORMOSA (WESTERN COLUMBINE)	4"	18".O.C.	6	
3-6' SUN				
CEANOTHUS 'CONCHA' (CALIFORNIA LILAC)	1G	6' O.C.	6	
- FRANGULA CALIFORNICA 'SEAVIEW IMPROVED' (COFFEEBERRY)	1G	3' O.C.	7	

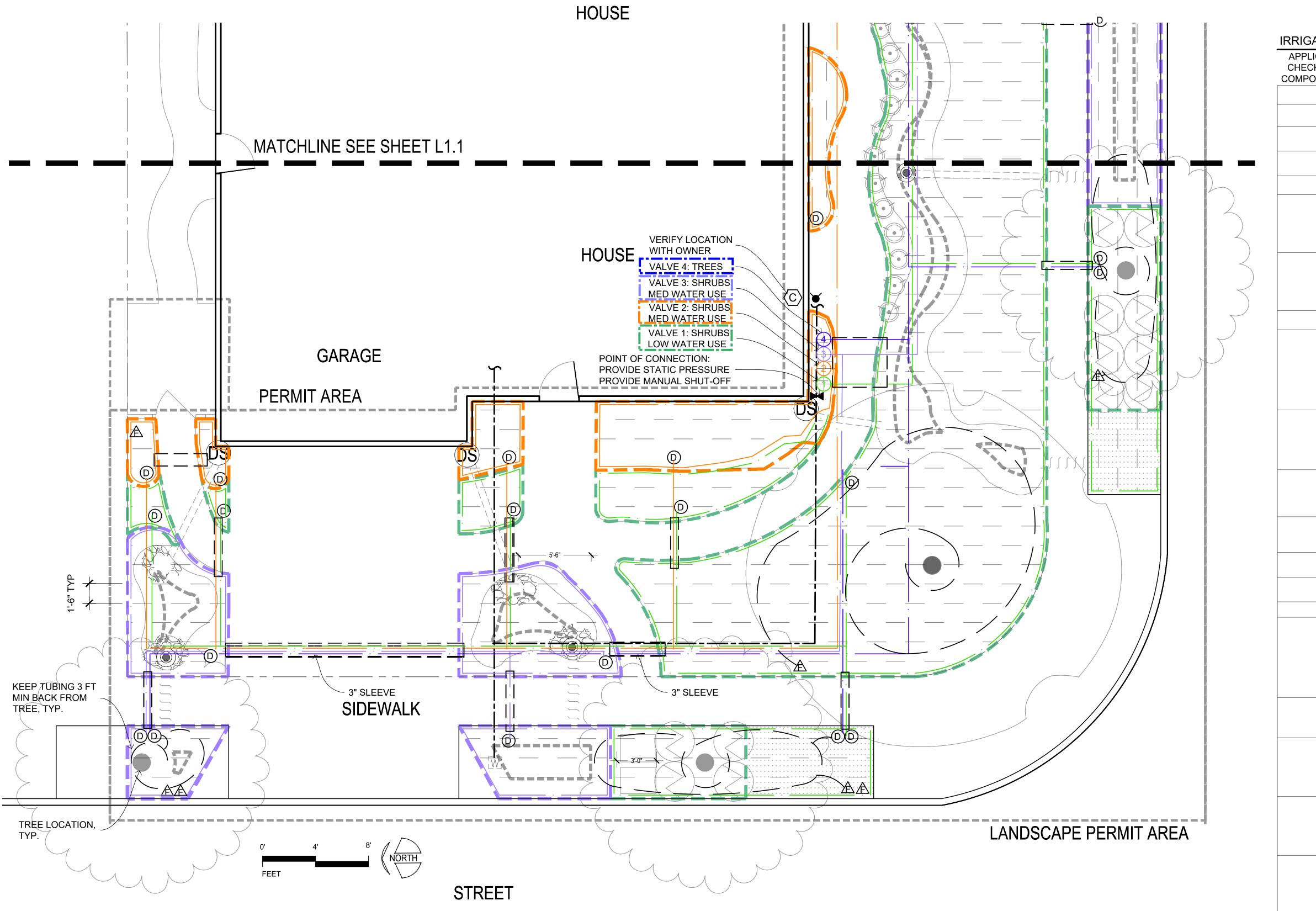
PLANTING MEDIUM WATER USE SHRUBS & PERENNIALS SUN TO PT. SHADE

				ii
O - ARCTOSTAPHYLOSEDMUNDSII 'BURT JOHNSON'	4"	24" O.C.	29	
- HEUCHERA MAXIMA OR H. VILLOSA 'AUTUMN BRIDE'	4"	30"	52	
RAIN GARDEN (OPTIONAL)				
BOTTOM PERIMETER OF RAIN GARDEN				(I
- CAREX PRAEGRACILIS (CA FIELD SEDGE) OR BIOSWALE SOD MIX *SEED MIMULUS CARDINALIS	2" (OR SOD)	16" O.C.	30	
- AQUILEGIA FORMOSA (WESTERN COLUMBINE)	4"	18".O.C.	12	
- JUNCUS PATENS (CALIFORNIA GREY RUSH)	2"	3' O.C.	45	
- ACHILLEA 'MOONSHINE' (MOONSHINE YARRROW)	1G	2' O.C.	8	



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PLANT WATER USE TABLE							
WATER USE	PLAN SF (%)	PERMIT SF (FILL IN)	PERMIT % (FILL IN)				
LOW	1,864 (75%)						
MED	635 (25%0						
TOTAL	2,499 (100%)						

NOTE: 166 SQ FT NON-IRRIGATED AREA

IRRIGATION VALVE TABLE

HYDRO ZONE	WATER USE	VALVE	PLAN SF	SUB - ZONES	PERMIT SF (FILL IN)	SUB - ZONES (FILL IN)	SOIL TYPE (CLAY / LOAM / SAND) (FILL IN)
1	LOW	1	1824 SF	9			
2	MED	2	226 SF	7			
3	MED	3	409 SF	5			
4	TREES	4	305 LF	6			
CLAY SOIL:	DO NOT EXCEE	D 1100 SF /	3 GPM PER SUBZ	ONE. IF TOT	AL AREA OF ZO	NE EXCEEDS 2	200 SF, ADD A VALVE.
LOAM SOIL:	DO NOT EXCEE	ED 1100 SF	/ 3 GPM PER SUBZ	ZONE. IF TOTA	AL AREA OF ZO	NE EXCEEDS 2	200 SF, ADD A VALVE.
SANDY SOII	.: DO NOT EXCE	ED 500 SF	/ 3 GPM PER SUB2	ZONE. IF TOT	AL AREA OF ZO	ONE EXCEEDS 1	1000 SF, ADD A VALVE.
TREE EMITT	ER TUBING 0.6	GPH PER L	EGEND: MIN 20 LF	PER VALVE;	MAX 200 LF PE	R SUBZONE; M	AX 400 LF PER VALVE
FOR EMITTE	R FLOW FMIT	FR SPACIN	IG & ROW SPACIN			ND	

APPLICA

- 1. ADJUS
- 2. REVIE 3. IF ARE
- UNDE
- 4. IF ARE VALVE
- 5. DRAV

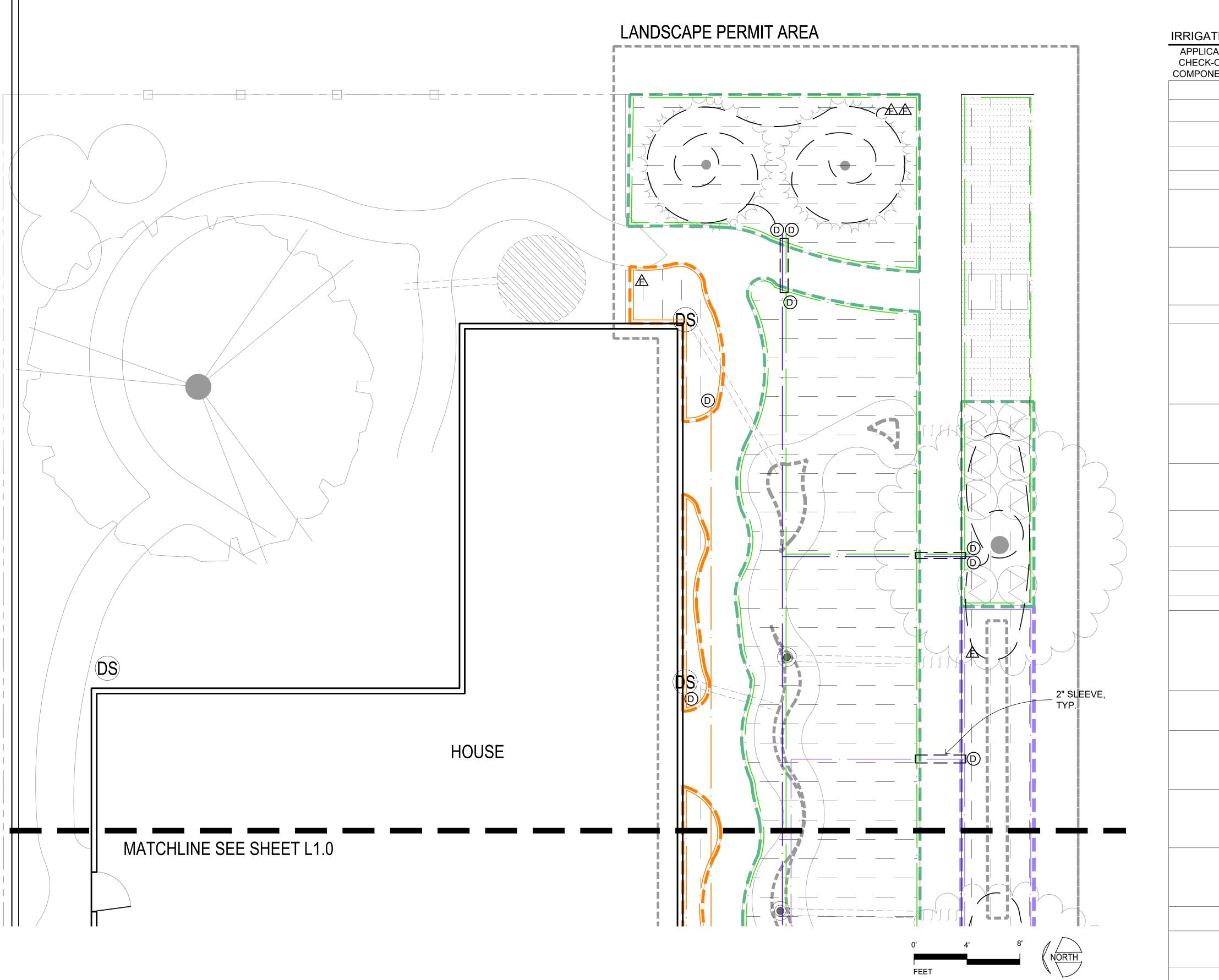
-OFF NENTS	SYMBOL	COMPONENT	MANUFAC -	MODEL	NOTES / SIZE /	ROHNERT PARK, CITY OF PETALUMA, CITY OF CO' OF SONOMA, VALLEY OF THE MOON WATER DIST TOWN OF WINDSOR) AND THEIR DIRECTORS, OF AGENTS, EMPLOYEES AND LANDSCAPE DESIGN CONSULTANTS AGAINST ANY AND ALL LOSS, LIAB EXPENSE, CLAIMS, SUITS AND DAMAGES, INCLUDI ATTORNEY'S FEES, ARISING OUT OF OR RESULTI THE LOF OF THIS LANDSCAPE OF AN UNDERSTA
	SYMBOL [W]	EXISTING WAT	TURER ER METER		COLOR	THE USE OF THIS LANDSCAPE PLAN, I UNDERSTAI IS MY RESPONSIBILITY AS THE PROJECT OWNER THAT PLAN ELEMENTS ARE IMPLEMENTED SAFEL ACCORDING TO APPLICABLE STATUTES, RULES, REGULATIONS, ORDINANCES AND/OR CODES. SONOMA-MARIN SAVING WATER PARTNERSHIP, IT MEMBERS AND LANDSCAPE DESIGN CONSULTAN
		CONTROLLER	HUNTER	PRO-C	INDOOR	MEMBERS AND LANDSCAPE DESIGN CONSULTAN' REPRESENTATIONS AND GRANT NO WARRANTIES OR IMPLIED, EITHER IN FACT OR BY OPERATION C STATUTE OR OTHERWISE, AND SONOMA-MARIN S WATER PARTNERSHIP, ITS MEMBERS AND DESIG CONSULTANTS EACH SPECIFICALLY DISCLAIM AN
		WEATHER SENSOR	HUNTER	SOLAR-SYNC -SEN	WIRED	WARRANTIES, WHETHER WRITTEN OR ORAL, OR I OR IMPLIED, INCLUDING ANY WARRANTY OF QUAL MERCHANTRESILITY OR FITNESS FOR A PARTICUL- PURPOSE OR ANY WARRANTY AS TO THE VALIDIT PATENTS OR THE NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF THIRD PAR
	M	FULL PORT BALL VALVE	NIBCO	585	LINE SIZE	
	l <u> </u>	MAINLINE		PVC SCH 40 PVC SCH 40 WITH SCH 40 SOLVENT WELD		
		LATERAL PIPE (COLOR VARIES PER		FITTINGS PVC SCH 40 WITH SCH 40 SOLVENT	PIPE SIZE: 0-6 GPM: 3/4" PIPE; 7-12	ANN BAKER LANDSCAPE ARCHIT 625 2ND ST., STE 110
	· ·	ZONE)		WELD FITTINGS	GPM: 1" PIPE;	PETALUMA, CA 94952 TEL.: (707) 772-5062
					Y TO INCLUDE:	EMAIL: landarches@gmail.co
	ASSEMBLY		ACZ-075-40 DRIP CONTROL ZONE KIT	ALL-IN-ONE KIT INCLUDES BACKFLOW PREVENTION, FILTER AND PRESSURE REGULATOR	because every choice of the second se	
	#	ANTI-SIPHON VALVE (COLOR VARIES PER ZONE)	HUNTER	PGV-ASV, INCLUDED IN KIT	3/4 INCH ANTI-SIPHON VALVE PROVIDES BACKFLOW PREVENTION	Equin
		DRIP FILTER	_	INCLUDED IN KIT	150 MESH STAINLESS STEEL SCREEN	SHERWO
		PRESSURE REGULATION		INCLUDED IN KIT	40 PSI	P D
		NIPPLE		-	PVC SCH 80 UV RESISTANT	PANORAMIC DESIGN GRO LANDSCAPE ARCHITECT
	D	TRANSITION TO			SEE DETAIL	
	DRIP LAYOUT					PLATE
		PLANTING BEDS				DESIGN TEMPLATE
						Ше
		TREES		TAFIM TLCV6-12 GPH: EMITTER	201 EMITTER FLOW SPACING: 12".	SCAP water ship.org
					SPACING: 12". CLAY SOIL : EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL :	DENTIAL LANDSCAPE DES MA-MARIN SAVING WATER PARTNE savingwaterpartnership.org : ADDRESS :
		TREES INLINE EMITTER TUBING		GPH: EMITTER	SPACING: 12". CLAY SOIL : EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL : EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18"	RESIDENTIAL LANDSCAP Sonoma-marin saving water www.savingwaterpartnership.org NAME: SITE ADDRESS:
		INLINE EMITTER	0.6	GPH: EMITTER	SPACING: 12". CLAY SOIL : EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL : EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18";	WATER NAME: SITE ADDRES
		INLINE EMITTER TUBING DRIP	0.6	GPH: EMITTER TLCV4-1801 TLCV4-1801	SPACING: 12". CLAY SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" SANDY SOIL: EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12";	ENTIAL -MARIN ingwate
	SYMBOLS FOR CO SHOWN IN PAVED EQUIPMENT WITH	INLINE EMITTER TUBING DRIP FLUSHOUT OMPONENTS ARI AREAS FOR GR I PLUMBER.	0.6 NETAFIM NETAFIM E LARGER THA APHIC CLARITY	GPH: EMITTER TLCV4-1801 TLCV4-1801 TLCV6-1201 TLFIG8 N ACTUAL SIZE Y. COORDINATE	SPACING: 12". CLAY SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" SANDY SOIL: EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12"; ROW SPACING: 18" AND MAY BE LOCATION OF	SANGWARE RESIDENTIAL SONOMA-MARIN WWW.Savingwate WWW.Savingwate SANDGWARE NAME: SITE ADDRES
	SYMBOLS FOR CO SHOWN IN PAVED EQUIPMENT WITH ALL PIPE RUNS U POURING CONCR	INLINE EMITTER TUBING DRIP FLUSHOUT OMPONENTS ARI AREAS FOR GR I PLUMBER. NDER PAVING AI	0.6 NETAFIM NETAFIM E LARGER THA APHIC CLARITY	GPH: EMITTER TLCV4-1801 TLCV4-1801 TLCV6-1201 TLFIG8 N ACTUAL SIZE Y. COORDINATE	SPACING: 12". CLAY SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" SANDY SOIL: EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12"; ROW SPACING: 18" AND MAY BE LOCATION OF	RESIDENTIAL SURVEY SHEET TITLE: IRRIGATION
	SYMBOLS FOR CO SHOWN IN PAVED EQUIPMENT WITH ALL PIPE RUNS U POURING CONCR	INLINE EMITTER TUBING DRIP FLUSHOUT OMPONENTS ARE AREAS FOR GR I PLUMBER. NDER PAVING AR ETE	0.6 NETAFIM NETAFIM E LARGER THA APHIC CLARITY RE IN SLEEVES	GPH: EMITTER TLCV4-1801 TLCV4-1801 TLCV6-1201 TLFIG8 N ACTUAL SIZE Y. COORDINATE S, INSTALL SLEE	SPACING: 12". CLAY SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" SANDY SOIL: EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12"; ROW SPACING: 18" AND MAY BE LOCATION OF	RESIDENTIAL SURPARENTIAL SHEET TITLE: IRRIGATION PLAN
LAYO IRRIG S EXC	SYMBOLS FOR CO SHOWN IN PAVED EQUIPMENT WITH ALL PIPE RUNS U POURING CONCR TRUCTIONS: OUT OF PLANTING E GATION VALVE TAB	INLINE EMITTER TUBING DRIP FLUSHOUT OMPONENTS ARE OAREAS FOR GR I PLUMBER. NDER PAVING AR ETE BEDS IF CHANGE BLE TO ADJUST S	0.6 NETAFIM NETAFIM E LARGER THA APHIC CLARITY RE IN SLEEVES ED ON LAYOUT	GPH: EMITTER TLCV4-1801 TLCV4-1801 TLCV6-1201 TLFIG8 N ACTUAL SIZE Y. COORDINATE S, INSTALL SLEE SHEET 1.0. ALVE ZONES.	SPACING: 12". CLAY SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" LOAM SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18" SANDY SOIL: EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12"; ROW SPACING: 18" AND MAY BE LOCATION OF	RESIDENTIAL SURVEY SHEET TITLE: IRRIGATION

6. ADD VALVE AS NEEDED TO VALVE MANIFOLD. 7. REVIEW IRRIGATION LEGEND AND CHECK OFF THAT ALL COMPONENTS ARE SHOWN ON

ADJUSTED PLAN. 8. NOTE ANY EQUIPMENT SUBSTITUTIONS.

SHEET OF

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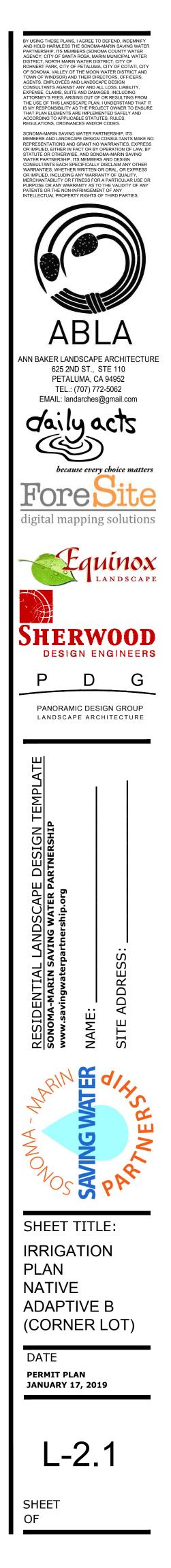
APPLICANT

- 1. ADJUST 2. REVIEW
- 3. IF AREAS

T F TS	SYMBOL	COMPONENT	MANUFAC - TURER	MODEL	NOTES / SIZE / COLOR	
		EXISTING WATER METER				
		CONTROLLER	HUNTER	PRO-C	INDOOR	
	*	WEATHER SENSOR	HUNTER	SOLAR-SYNC -SEN	WIRED	
	M	FULL PORT BALL VALVE	NIBCO	585	LINE SIZE	
		SLEEVE		PVC SCH 40		
		MAINLINE		PVC SCH 40 WITH SCH 40 SOLVENT WELD FITTINGS		
		LATERAL PIPE (COLOR VARIES PER ZONE)		PVC SCH 40 WITH SCH 40 SOLVENT WELD FITTINGS	PIPE SIZE: 0-6 GPM 3/4" PIPE; 7-12 GPM: 1" PIPE;	
		DRIP IRRIGATIO	ON CONTROL V	ALVE ASSEMBL	Y TO INCLUDE:	
	-	ASSEMBLY		ACZ-075-40 DRIP CONTROL ZONE KIT	ALL-IN-ONE KIT INCLUDES BACKFLOW PREVENTION, FILTER AND PRESSURE REGULATOR	
	#	ANTI-SIPHON VALVE (COLOR VARIES PER ZONE)	HUNTER	PGV-ASV, INCLUDED IN KIT	3/4 INCH ANTI-SIPHON VALVE PROVIDES BACKFLOW PREVENTION	
		DRIP FILTER	PRESSURE	INCLUDED IN KIT	150 MESH STAINLESS STEEL SCREEN	
		PRESSURE REGULATION		INCLUDED IN KIT	40 PSI	
		NIPPLE			PVC SCH 80 UV RESISTANT	
	D DRIP LAYOUT	TRANSITION TO	TRANSITION TO DRIP ZONE			
		PLANTING BED	S			
		TREES				
				TLCV4-1801	CLAY SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18"	
		INLINE EMITTER TUBING	NETAFIM	TLCV4-1801	LOAM SOIL: EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18"	
				TLCV6-1801	SANDY SOIL: EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12"; ROW SPACING: 18"	
	Æ	DRIP FLUSHOUT	NETAFIM	TLFIG8		
	SYMBOLS FOR CC SHOWN IN PAVED EQUIPMENT WITH ALL PIPE RUNS UN POURING CONCRE	AREAS FOR GR PLUMBER. NDER PAVING AF	APHIC CLARIT	Y. COORDINATE	LOCATION OF	
IST	RUCTIONS:					
YO RIG	OUT OF PLANTING E GATION VALVE TABI	LE TO ADJUST S	F AREAS OF V	ALVE ZONES.	ZONES AND ENTER	

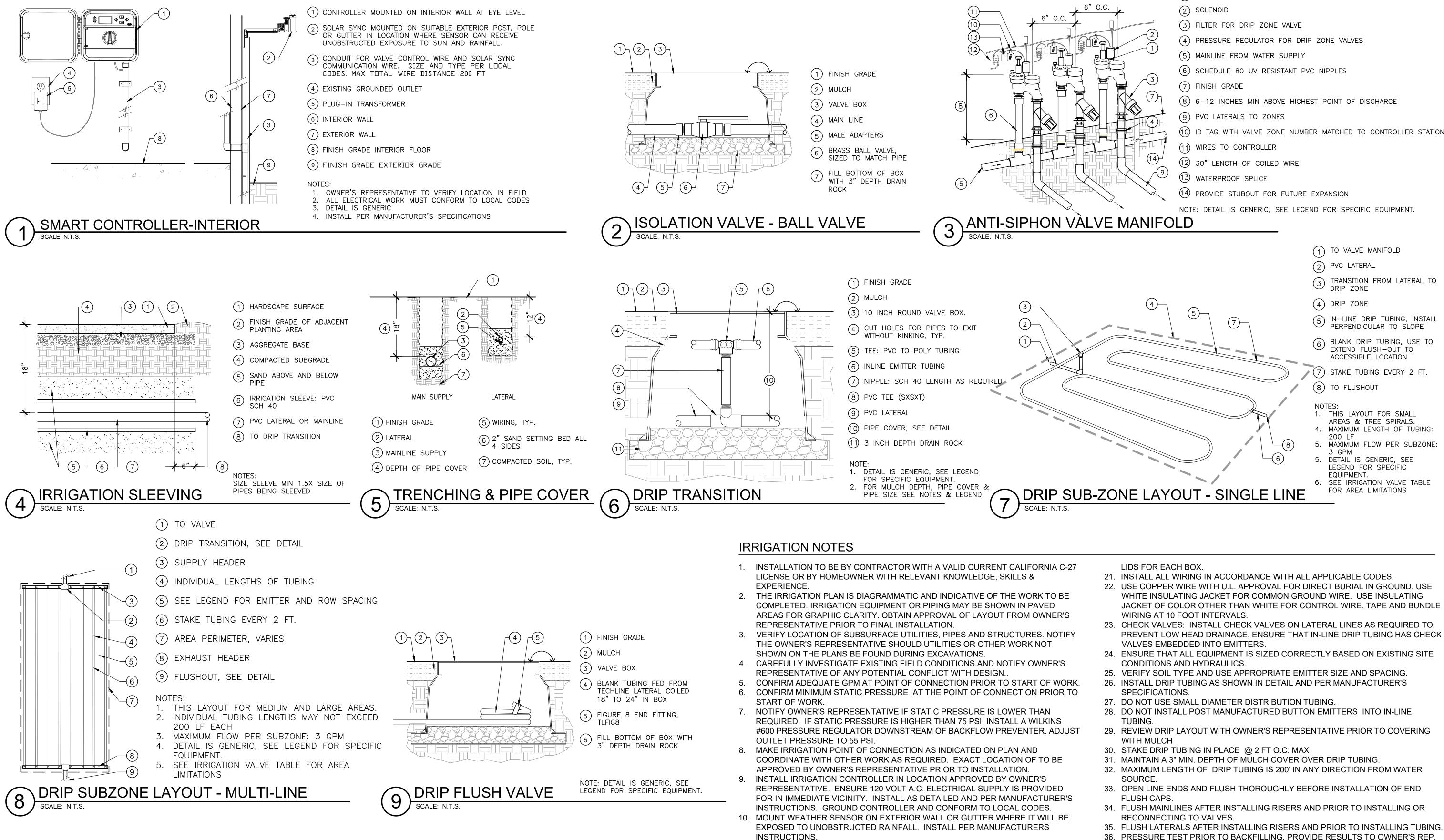
IF AREAS EXCEED MAX SUBZONE FLOW (3 GPM) DIVIDE INTO ADDITIONAL SUBZONES AND ENTER UNDER SUBZONE COLUMN
 IF AREAS EXCEED MAX ZONE FLOW (7 GPM) ADD A VALVE AND ENTER SF AREA NEXT TO NEW VALVE NUMBER ("B" OR "C")
 DRAW OUT NEW SUBZONE AND/OR VALVE ZONE AREA ON PLAN IN NEW COLOR.
 ADD VALVE AS NEEDED TO VALVE MANIFOLD.
 REVIEW IRRIGATION LEGEND AND CHECK OFF THAT ALL COMPONENTS ARE SHOWN ON ADJUSTED PLAN.
 NOTE ANY FOURDMENT SUBSTITUTIONS

8. NOTE ANY EQUIPMENT SUBSTITUTIONS.



FOR IRRIGATION VALVE TABLE SEE IRRIGATION PLAN SHEET L2.0

FOR LEGEND SEE IRRIGATION PLAN SHEET L2.0



- INSTRUCTIONS.
- 11. BACKFLOW PREVENTION IS REQUIRED. IF NOT PROVIDED BY ANTI-SIPHON VALVES THEN CODE APPROVED BACKFLOW PREVENTION DEVICE MUST BE INSTALLED.
- 12. INSTALL ISOLATION VALVE AT POC UPSTREAM OF BACKFLOW PREVENTION (ANTI-SIPHON VALVES)
- 13. ENSURE THAT ALL COMPONENTS ARE CONNECTED AND OPERATIONAL 14. PROVIDE PVC SCH 40 SLEEVES FOR ALL PIPING AND WIRE UNDER PAVING. COORDINATE WITH CONCRETE CONTRACTOR INSTALL SLEEVES PRIOR TO POURING CONCRETE. EXTEND SLEEVE 6 INCHES BEYOND EDGE OF PAVING. ENSURE THAT SLEEVES ARE SIZED ADEQUATELY TO CONTAIN PIPES BEING SLEEVED.
- 15. ENSURE ADEQUATE PIPE SIZE TO PROVIDE REQUIRED FLOW.
- 16. PIPE COVER: SEE DETAIL
- 17. PIPE SIZE: 0-6 GPM: 3/4" PIPE; 7-12 GPM: 1" PIPE;
- 18. INSTALL ALL PLASTIC PIPING IN TRENCHES IN A SERPENTINE MANNER. 19. PROVIDE VALVE BOXES FOR: ISOLATION VALVE, DRIP TRANSITION AND FLUSHOUT VALVE.
- 20. VALVE BOXES: SET PARALLEL TO EACH OTHER AND PERPENDICULAR TO ADJACENT EDGE. SET WITH SUFFICIENT CLEARANCE ABOVE GRADE SO THAT FINAL MULCH GRADE IS FLUSH WITH EDGES OF BOXES. PROVIDE BOLT DOWN

DURATION TO ESTABLISH THE NEW SHRUBS. ADJUST THE SCHEDULE AS THE SHRUBS BECOME ESTABLISHED AND PER WEATHER AND SEASON 43. THE DESIGN INTENT IS TO PROVIDE THE MINIMUM AMOUNT OF WATER TO SUSTAIN HEALTHY PLANT GROWTH AND TO AVOID RUN-OFF, LOW HEAD

42. SCHEDULE THE SHRUB ZONES TO RUN AT A HIGH FREQUENCY AND SHORT

DURATION TO PROVIDE DEEP WATERING FOR THE TREES. ADJUST SCHEDULE

37. FILL ALL EXCAVATIONS WITH COMPACTED BACKFILL, IN TWO MECHANICALLY

38. PERFORM COVERAGE TEST. ADJUST SYSTEM AS NEEDED TO PROVIDE FULL

41. SCHEDULE THE TREE ZONE TO RUN AT A LOW FREQUENCY AND LONG

COMPACTED LIFTS. REPAIR ALL SETTLED TRENCHES.

COVERAGE AND TO AVOID RUNOFF.

40. PROVIDE CONTROLLER SCHEDULE.

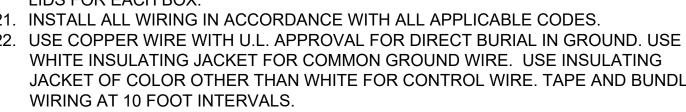
PER WEATHER AND SEASON.

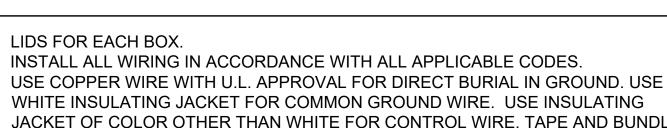
39. AFTER COMPLETION PROVIDE AS-BUILT PLANS.

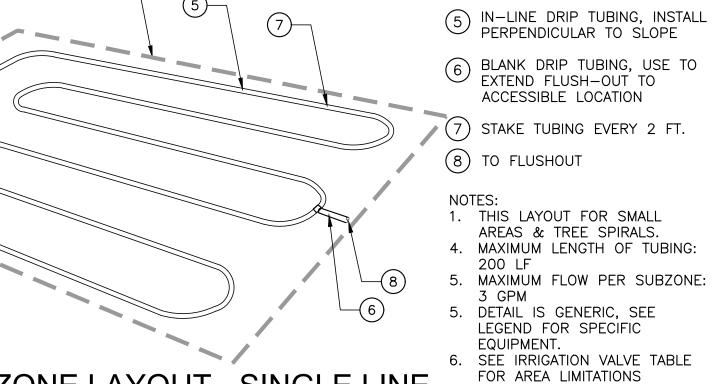
- DRAINAGE AND OVERSPRAY. 44. ENSURE THAT CONTROLLER SCHEDULE IS ADJUSTED SEASONALLY AT A
- MINIMUM
- 45. RUN SYSTEM TO CHECK FOR LEAKS AND REPAIR THEM SEASONALLY AT A MINIMUM.

- 21. INSTALL ALL WIRING IN ACCORDANCE WITH ALL APPLICABLE CODES.
- 22. USE COPPER WIRE WITH U.L. APPROVAL FOR DIRECT BURIAL IN GROUND. USE WHITE INSULATING JACKET FOR COMMON GROUND WIRE. USE INSULATING WIRING AT 10 FOOT INTERVALS.
- JACKET OF COLOR OTHER THAN WHITE FOR CONTROL WIRE. TAPE AND BUNDLE 23. CHECK VALVES: INSTALL CHECK VALVES ON LATERAL LINES AS REQUIRED TO

- LIDS FOR EACH BOX.







NOTE: DETAIL IS GENERIC, SEE LEGEND FOR SPECIFIC EQUIPMENT.

(12) 30" LENGTH OF COILED WIRE (13) WATERPROOF SPLICE

(14) PROVIDE STUBOUT FOR FUTURE EXPANSION

- (11) WIRES TO CONTROLLER
- (10) ID TAG WITH VALVE ZONE NUMBER MATCHED TO CONTROLLER STATION

(1) TO VALVE MANIFOLD

3 TRANSITION FROM LATERAL TO DRIP ZONE

ACCESSIBLE LOCATION

(2) PVC LATERAL

(4) DRIP ZONE

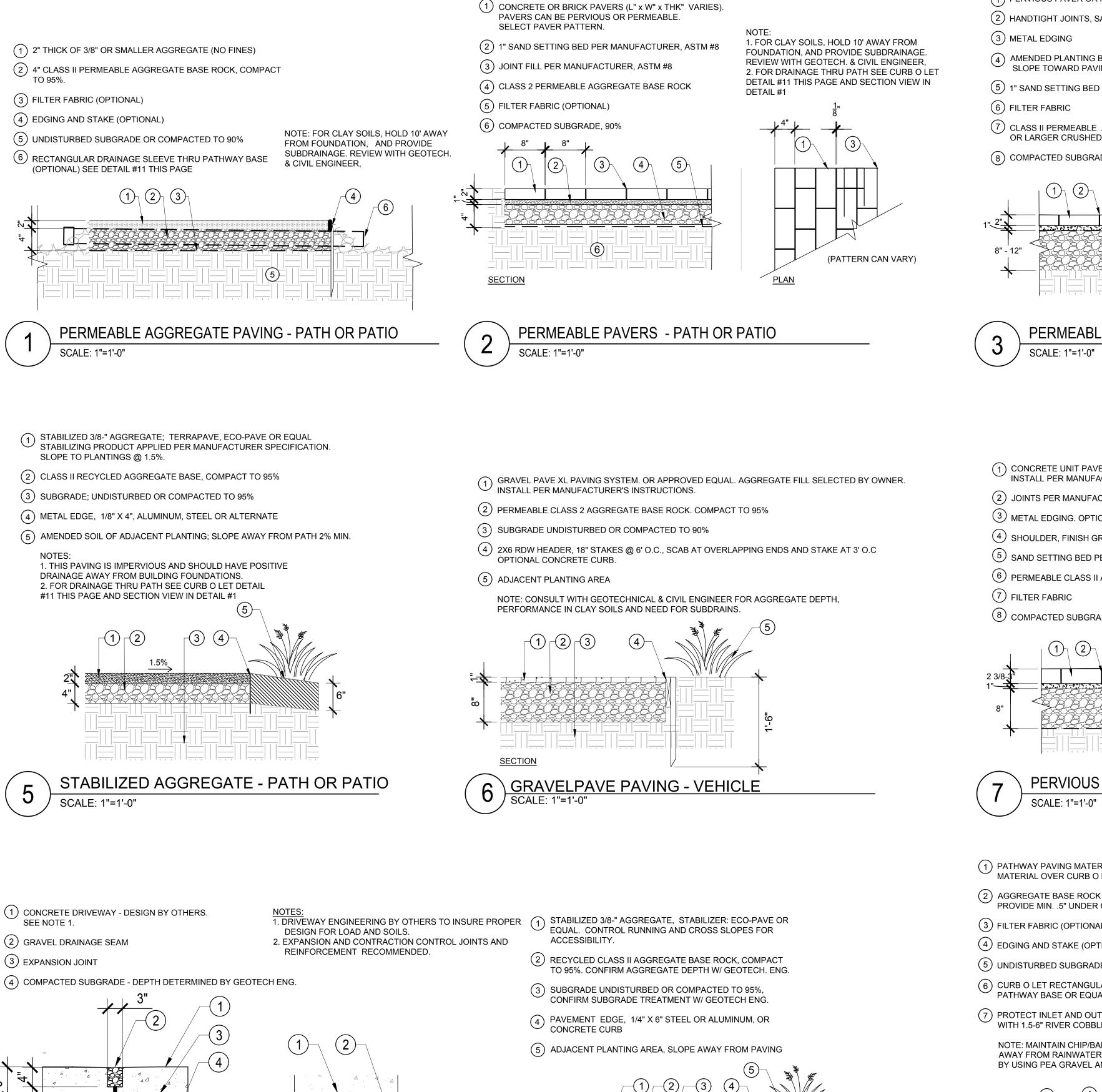
- (9) PVC LATERALS TO ZONES
- (8) 6-12 INCHES MIN ABOVE HIGHEST POINT OF DISCHARGE
- (7) FINISH GRADE
- (6) SCHEDULE 80 UV RESISTANT PVC NIPPLES
- (5) MAINLINE FROM WATER SUPPLY
- (4) PRESSURE REGULATOR FOR DRIP ZONE VALVES
- (3) FILTER FOR DRIP ZONE VALVE
- 2 SOLENOID
- 1 ANTI-SIPHON VALVE

AGAINST ANY AND ALL LOSS, LIAB IONS AND GRANT NO WARRANTIE THER IN FACT OR BY OPERATION IES. WHETHER WRITTEN OR ORAL. OR EXPR IMPLIED, INCLUDING ANY WARRANTY OF QUALIT ERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OF IRPOSE OR ANY WARRANTY AS TO THE VALIDITY OF ANY ABLA ANN BAKER LANDSCAPE ARCHITECTURE 625 2ND ST., STE 110 PETALUMA, CA 94952 TEL.: (707) 772-5062 EMAIL: landarches@gmail.cor Jaily acts Ś because every choice matter ForeDite digital mapping solutions Equinox LANDSCAPE SHERWOOD DESIGN ENGINEERS D G PANORAMIC DESIGN GROUP LANDSCAPE ARCHITECTURE ATE MPL RESIDENTIAL LANDSCAPE DESIGN sonoma-marin saving water partnership ш NAM ഗ IN G dIA MARI U N K SHEET TITLE: IRRIGATION **DETAILS &** NOTES

DATE PERMIT PLAN MAY 18, 2018

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SHEET OF



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PLAN

CONCRETE - VEHICLE - GRAVEL DRAINAGE SEAMS

8" -

SCALE: 1"=1'-0"

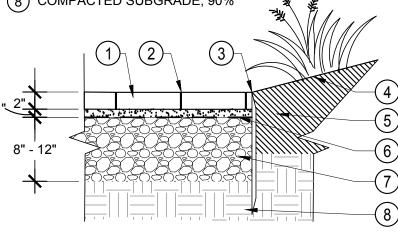
SECTION

9

STABILIZED AGGREGATE - VEHICLE 10 SCALE: 1"=1'-0"

- (1) PERVIOUS PAVER OR PERVIOUS AGGREGATE
- (2) HANDTIGHT JOINTS, SAND SWEPT
- (3) METAL EDGING
- (4) AMENDED PLANTING BED; FINISH GRADE CAN SLOPE TOWARD PAVING TO INFILTRATE

- (7) CLASS II PERMEABLE AGGREGATE BASE ROCK, OR LARGER CRUSHED DRAIN ROCK
- (8) COMPACTED SUBGRADE, 90%

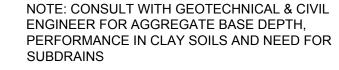


NOTES: 1. FOR CLAY SOILS, HOLD 10' AWAY FROM FOUNDATION, AND PROVIDE SUBDRAINAGE **REVIEW WITH GEOTECH & CIVIL ENGINEER.** 2. FOR DRAINAGE THRU PATH SEE CURB O LET DETAIL #11 THIS PAGE AND SECTION VIEW IN DETAIL #1

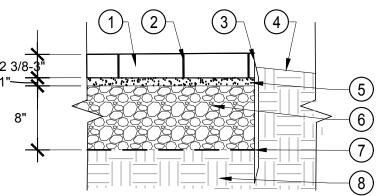


- (1) CONCRETE UNIT PAVER: SELECT PERVIOUS PAVERS OR PERMEABLE PAVERS INSTALL PER MANUFACTURER'S INSTRUCTIONS.
 - (2) JOINTS PER MANUFACTURER'S INSTRUCTIONS
 - 3 METAL EDGING. OPTIONAL CONCRETE CURB.
 - (4) SHOULDER, FINISH GRADE
 - 5 SAND SETTING BED PER MANUFACTURER'S INSTRUCTIONS
 - (6) PERMEABLE CLASS II AGGREGATE BASE ROCK, COMPACTED TO 95%

 - (8) COMPACTED SUBGRADE TO 90%



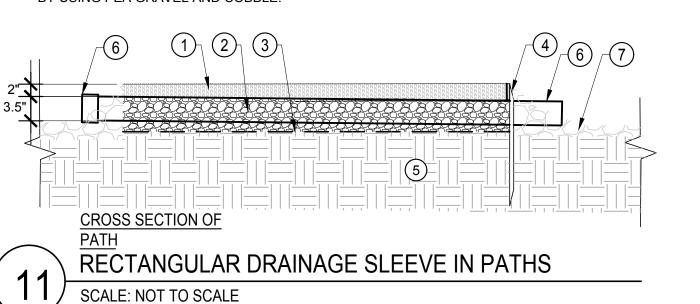
(1) (2) (3)

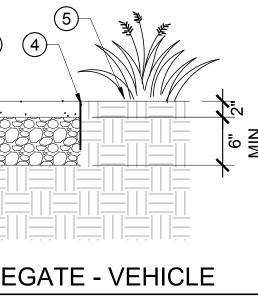


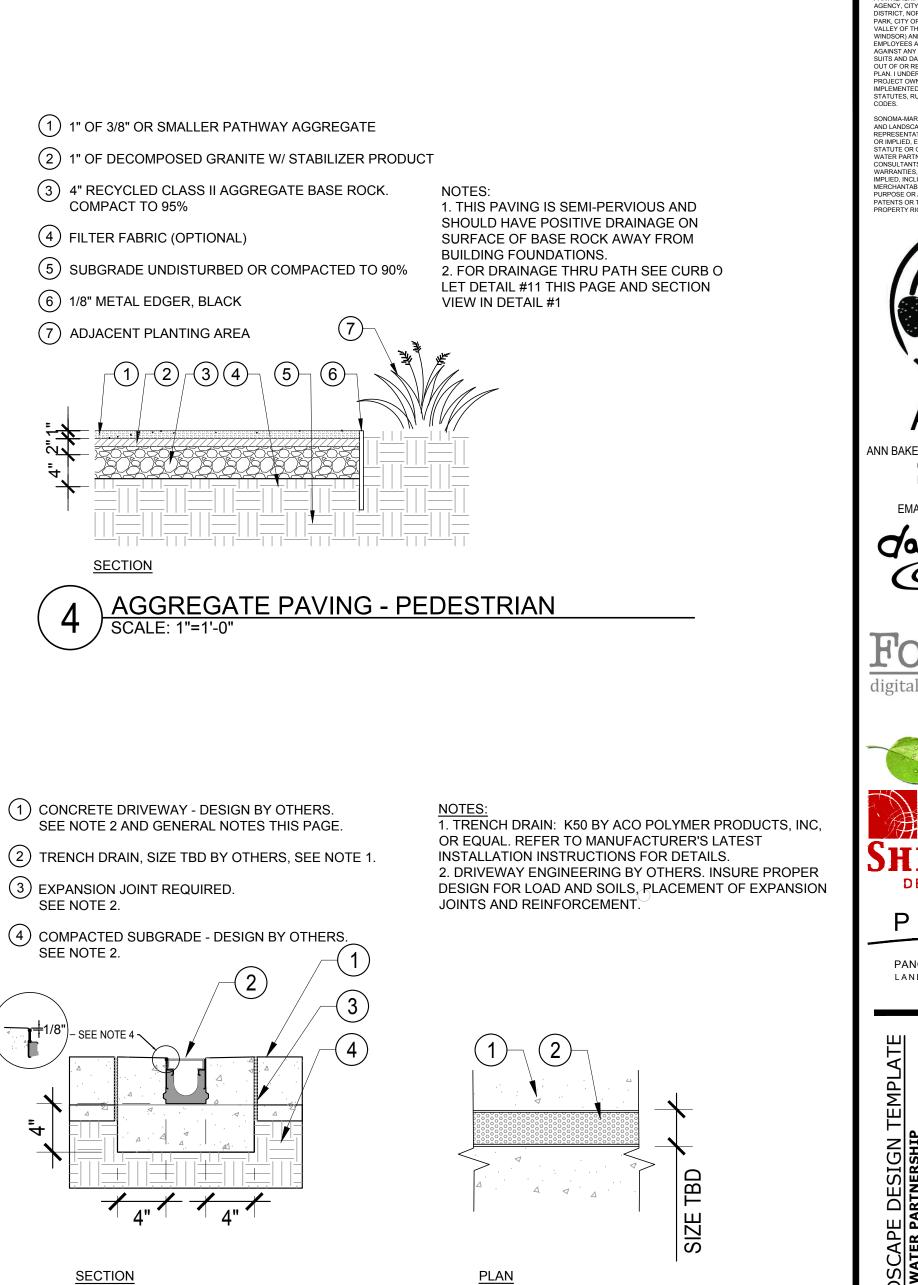
PERVIOUS OR PERMEABLE UNIT PAVER - VEHICLE

- 1 PATHWAY PAVING MATERIAL, PROVIDE 2" SURFACING MATERIAL OVER CURB O LET SLEEVE.
- 2 AGGREGATE BASE ROCK MATERIAL PROVIDE MIN. .5" UNDER CURB O LET SLEEVE.
- (3) FILTER FABRIC (OPTIONAL)
- (4) EDGING AND STAKE (OPTIONAL)
- (5) UNDISTURBED SUBGRADE OR COMPACTED TO 90%
- (6) CURB O LET RECTANGULAR DRAINAGE SLEEVE THRU PATHWAY BASE OR EQUAL. SLOPE SLEEVE 1-2%.
- (7) PROTECT INLET AND OUTLET OF DRAINAGE SLEEVE WITH 1.5-6" RIVER COBBLE.

NOTE: MAINTAIN CHIP/BARK MULCH AWAY FROM RAINWATER SYSTEMS BY USING PEA GRAVEL AND COBBLE









GENERAL NOTES

<u>~6</u><u>7</u>

(5)

LONGITUDINAL SECTION

AT CURB O LET INLET

1. DESIGN STRATEGY: THESE DETAILS ARE PROVIDED TO CREATE OPTIONS FOR PERMEABLE PAVING, AND PAVING STRATEGIES THAT PROMOTE STORMWATER INFILTRATION IN LANDSCAPE SPACES. THESE STRATEGIES HELP CLEAN WATER, INFILTRATE RUN OFF INTO GROUNDWATER, AND PROVIDE MORE SOIL MOISTURE AVAILABILITY FOR LANDSCAPE PLANTINGS.

2. THESE DETAILS SHOULD BE EVALUATED BY THE SITE ENGINEER AND ADJUSTED TO SITE CONDITIONS.

3. PAVING DEPTH, DEPTH OF BASE GRAVEL, SUB-BASE PREPARATION AND CONCRETE REINFORCEMENT SHOULD ALL BE EVALUATED AND ADJUSTED AS NEEDED BY A GEOTECHNICAL ENGINEER.

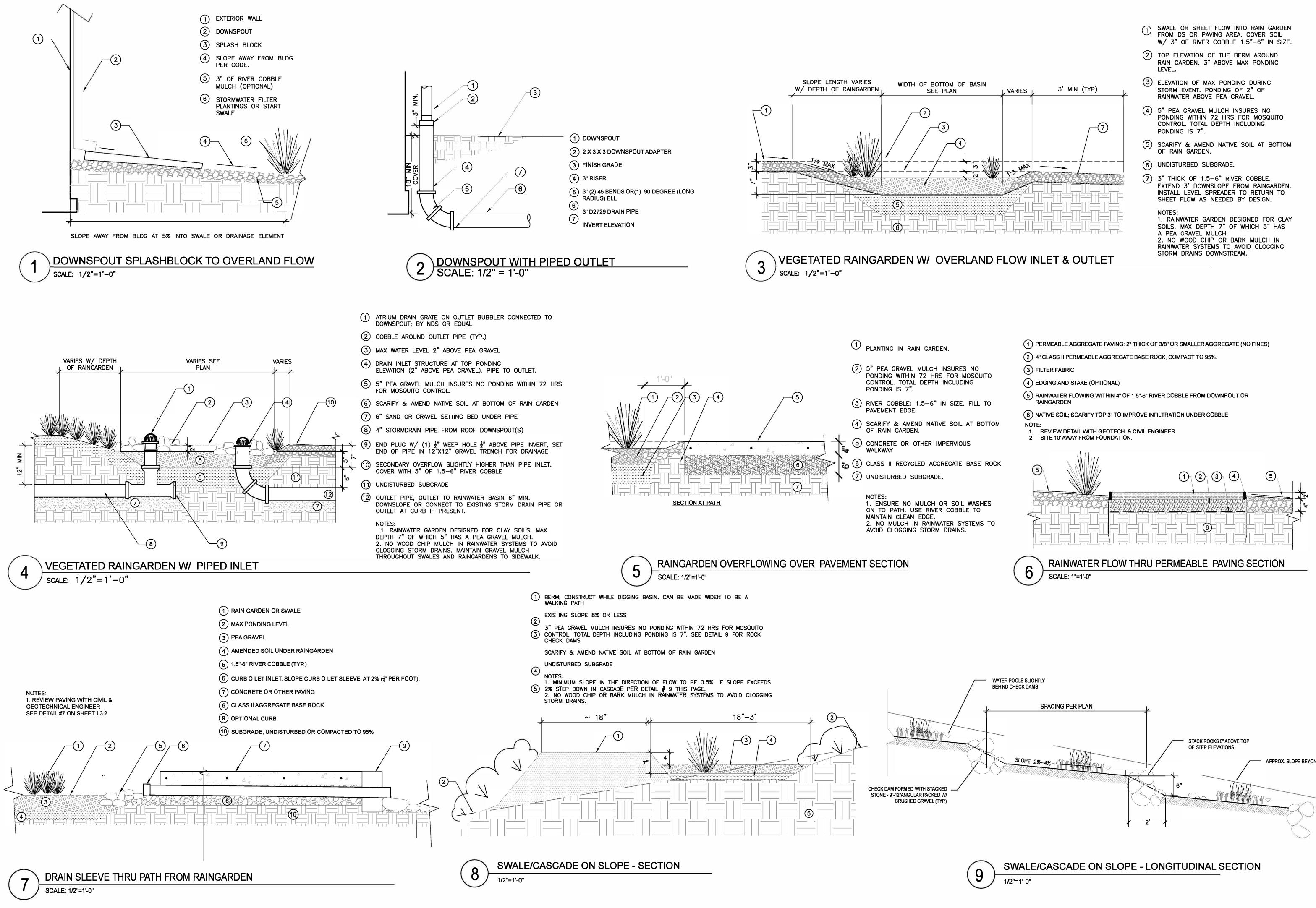
4. SOIL TYPE AFFECTS THE PERFORMANCE OF THESE DETAILS. CLAY SOILS DO NOT INFILTRATE WELL, SO THERE IS A NEED TO EVALUATE WHETHER THE PERMEABLE/PERVIOUS PAVING DETAILS ARE APPROPRIATE FOR SPECIFIC SITES AND ADJUST THEM AS APPROPRIATE TO PROTECT BUILDINGS AND OTHER IMPROVEMENTS.

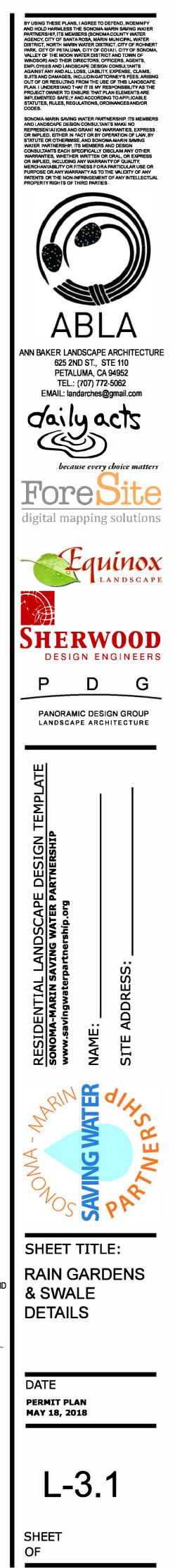
5. ACCESSIBLE PAVING IS SMOOTH, FIRM, AND HAS A CROSS SLOPE NOT TO EXCEED 2%. RUNNING SLOPE SHOULD BE 5% OR LESS UNLESS PAVING RAMP WITH HANDRAILS. SEE TITLE 24 OF CALIFORNIA CODE FOR ACCESSIBILITY REQUIREMENTS AND STANDARDS

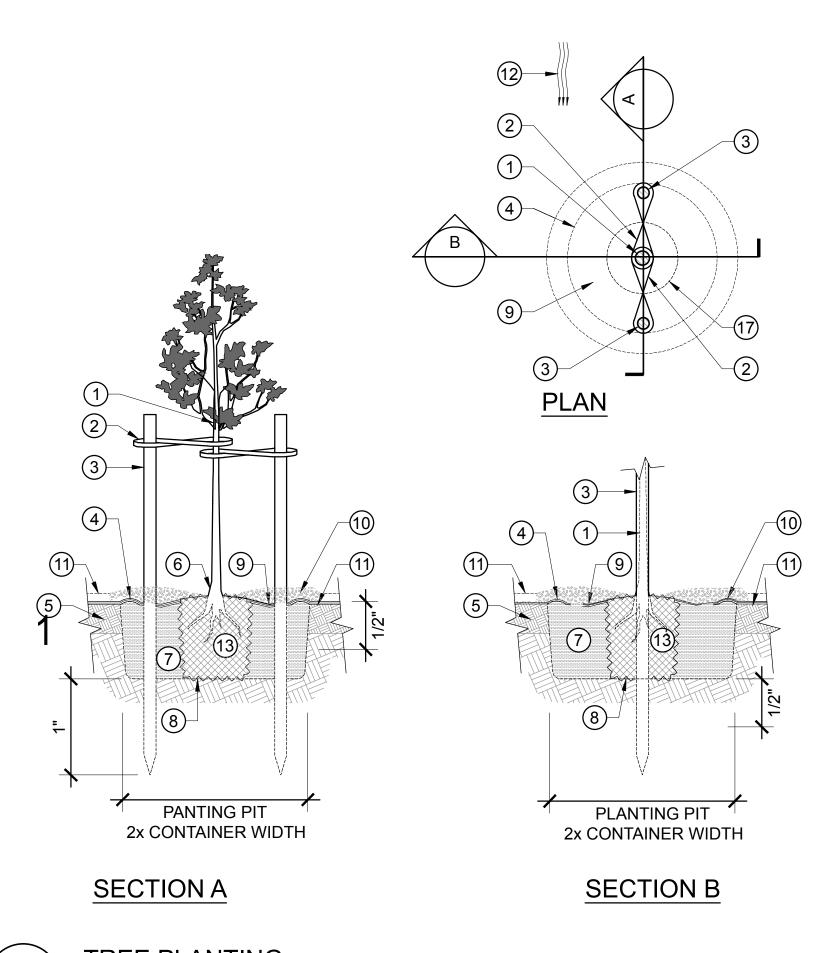
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SHEET OF

L-3.0

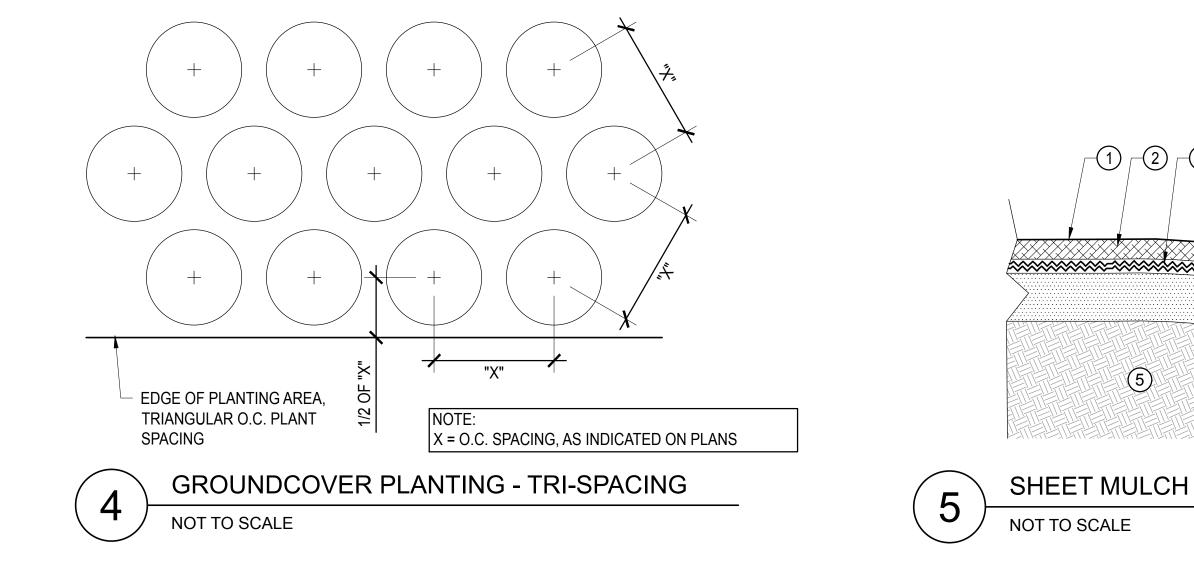








TREE PLANTING NOT TO SCALE



1 TREE, CENTRAL LEADER

2

3

NOTES:

3.

TOP.

THE TREE

SYNTHETIC STRAPPING, LOOP AROUND CENTRAL LEADER BELOW FIRST BRANCH, ONE STRAP PER STAKE, ATTACH TO STAKES W/ SHEET METAL SCREWS

WOOD STAKES, (2) PER TREE, SET PLUMB, OUTSIDE OF ROOTBALL, ON A LINE PARALLEL TO DIRECTION OF PREVAILING WIND, SET FAR ENOUGH FROM TREE THAT BRANCHES DO NOT TOUCH STAKES; STAKES SHALL BE SPACED AN EQUAL DISTANCE FROM THE CENTRAL LEADER.

(4) WATERING BERM, 3"H

5 TOPSOIL, NATIVE. USE DIGGING FORK TO REMOVE COMPACTION, DO NOT TILL

(6) CROWN OF ROOTBALL, SET 3" ABOVE FINISH GRADE

7 PLANTING PIT BACKFILL, PER SPECS

(8) PLANTING PIT, SCARIFY EDGES, INSURE ROOT BALL RESTS ON FIRM SOIL AND WILL NOT SINK OVER TIME.

9 WATERING BASIN

(10) MULCH, PER SPECS, 3" LAYER, KEEP 4" AWAY FROM TRUNK

(11) SHEET MULCH: 2 LAYERS CARDBOARD, OR (5) LAYERS RECYCLED NEWSPAPER. $\frac{1}{2}$ " OF COMPOST UNDER PAPER.

12 DIRECTION OF PREVAILING WIND

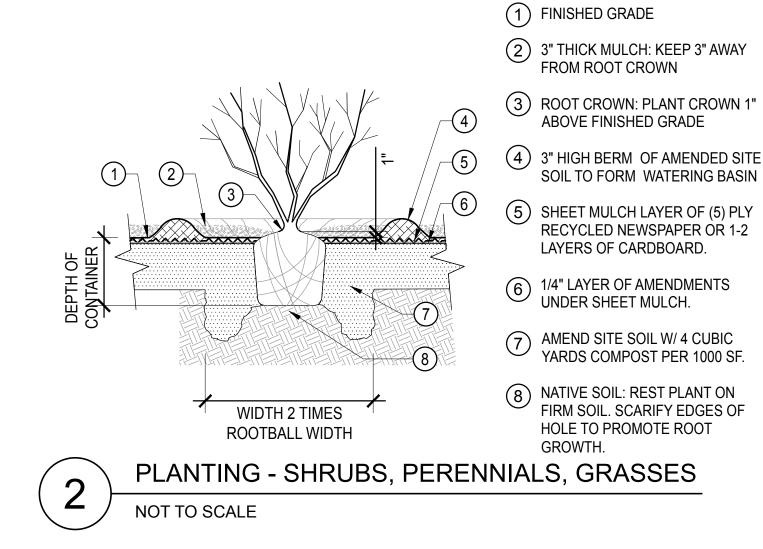
(13) ROOTBALL, SCARIFY OUTER 1"

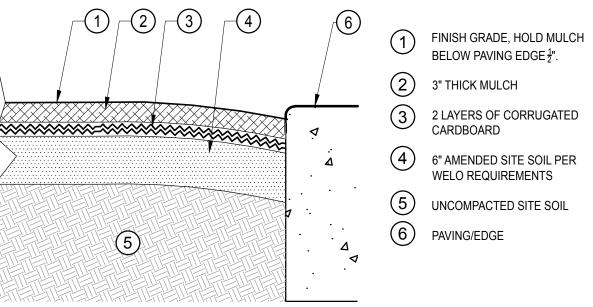
MAKE STAKES AS SHORT AS POSSIBLE, BUT HIGH ENOUGH TO HOLD THE TREE UPRIGHT UNDER CALM CONDITIONS. THE TREE SHOULD RETURN TO VERTICAL AFTER THE WIND HAS BENT THE

2. SUPPORT THE TRUNK AT JUST ONE LEVEL, NEAR THE TOPS OF THE STAKES.

PROVIDE FLEXIBLE MOVEMENT AT THE POINT WHERE STRAPPING WRAPS LOOSLY AROUND THE CENTRAL LEADER OF

4. TAKE CARE NOT TO CAUSE RUBBING OR GIRDLING INJURIES. 5. STAKES ARE FOR PROTECTION OF THE TREE FOR A PERIOD AFTER PLANTING. REMOVE STAKES AS SOON AS TREE ESTABLISHES IT ROOT SYSTEM - WITHIN 18 MONTHS MAX.





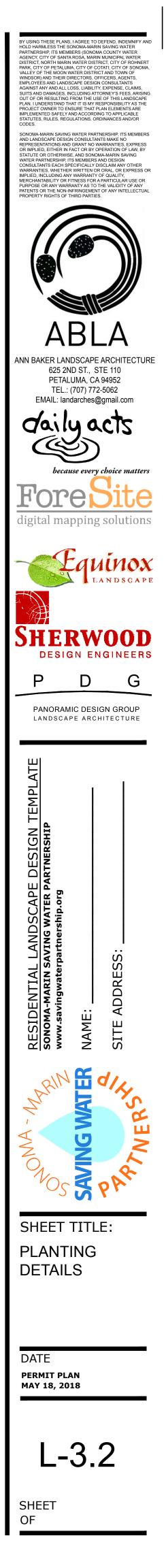
PLANT PIT & WATERING BERM TABLE

CONTAINER SIZE	PLANT PIT DIAMETER	WATERING BERM HEIGHT	WATERING BERM DIAMETER
1 GAL CAN	18" MIN	3" MIN	18" MIN
5 GAL CAN	30" MIN	4" MIN	30" MIN
15 GAL CAN	3' MIN	5" MIN	3' MIN
24" BOX	5' MIN	6" MIN	5' MIN



PLANT PIT AND WATERING BERM

NOT TO SCALE



(4) -3 -(1)-2 DISTANCE ON CENTER ("O.C") LISTED ON LEGEND

1 MULCH: 2" FOR GRASS PLUGS.

2" PLUG OR STUBBIE. PLANT CROWN 1" ABOVE FINISHED

3 6" AMENDED SOIL PER WELO

4 PLANTING HOLE: USE DIBBLE TO

CREATE A HOLE SLIGHTLY LARGER THAN PLUG. PLACE

PLUG FIRMLY IN HOLE WITH

LEAVE NO AIR OR MULCH

CROWN AT OR SLIGHTLY ABOVE

HEIGHT OF SURROUNDING HOLE.

AROUND ROOTS. BACKFILL HOLE

WITH GARDEN SOIL, NOT MULCH.

1. PLANT PLUG STRAIGHT UP

(PLUMB), NOT AT AN ANGLE TO

2. GRASS PLUG PLANTINGS DO BETTER IN CERTIFIED WEED

FREE STRAW MULCH OR 1-2" OF

LESS WOODY MULCH.

REQUIREMENTS.

OF COMPOST.

GRADE

<u>NOTES</u>

THE SLOPE.

IF APPLYING WILDFLOWER SEED

MULCH WITH RICE STRAW OR 3/4"



PLUG PLANTING

NOT TO SCALE

APPLICANT INFORMATION:

LANDSCAPE TO LAUNDRY SYSTEM OVERVIEW:

A LAUNDRY-TO-LANDSCAPE GRAYWATER SYSTEM CAPTURES LIGHTLY USED WATER FROM THE DISCHARGE HOSE OF YOUR WASHING MACHINE AND PUMPS IT OUT TO THE LANDSCAPE THROUGH 1-INCH TUBING. THE SYSTEM DOES NOT ALTER THE EXISTING PLUMBING AND THEREFORE DOES NOT REQUIRE A PERMIT. A THREE-WAY DIVERTER VALVE IS A NECESSARY COMPONENT, ALLOWING YOU TO SEND DISCHARGE WATER BACK TO THE SEWER SYSTEM WHEN NEEDED OR DURING THE RAINY SEASON.

INSTALLATION & DESIGN CONSIDERATIONS

LAUNDRY TO LANDSCAPE GRAYWATER SYSTEMS ARE EASY TO INSTALL FOR THE DO-IT-YOURSELFER OR A PROFESSIONAL, ESPECIALLY IF THE WASHING MACHINE IS LOCATED ON AN EXTERNAL WALL AND IS IN CLOSE PROXIMITY TO THE LANDSCAPE AREA BEING IRRIGATED. NOTE. THE WASHING MACHINE PUMP WILL PROVIDE SUFFICIENT PRESSURE THROUGH A 1-INCH IRRIGATION LINE FOR 100-FEET ON FLAT GROUND. IF THE SYSTEM IS DESIGNED TO IRRIGATE UPHILL FROM THE WASHING MACHINE, THE DISTANCE SHOULD BE REDUCED TO 30-50 FEET WITH NO MORE THAN A 5% SLOPE. IF THE SYSTEM IS DESIGNED TO IRRIGATE DOWNHILL FROM THE WASHING MACHINE. THE DISTANCE MAY INCREASE TO 150-FEET DEPENDING ON SLOPE.

GRAYWATER REQUIREMENTS TO COMPLY WITH CALIFORNIA PLUMBING CODE (" CPC") STANDARDS:

- O NOTIFY ENFORCING AGENCY
- O BE ABLE TO REDIRECT TO SEWER
- O NO POTABLE WATER CONNECTION
- O CONTAIN GRAYWATER ON SITE
- O DIRECT AND CONTAIN GRAYWATER WITHIN MULCH BASINS (IRRIGATION OR DISPOSAL FIELD) BELOW THE GROUND
- SURFACE
- O NO PONDING OR RUNOFF
- O OUTLETS COVERED BY AT LEAST 2-INCHES OF MULCH, ROCK, OR A SHIELD (E.G. VALVE BOX LID)
- O MINIMIZE CONTACT WITH HUMANS AND ANIMALS
- O DIVERT WATER TO THE SEWER IF IT CONTAINS DIAPERS, OIL, OTHER CHEMICALS
- O GRAYWATER DIVERTED TO LANDSCAPE SHALL NOT CONTAIN HAZARDOUS CHEMICALS
- O PERMIT EXEMPTION DOES NOT GRANT INSTALLATION THAT VIOLATES OTHER CODE OR LAWS
- O POST OPERATION AND MAINTENANCE MANUAL

CPC Table 1502.4 --- LOCATION OF GREY WATER SYSTEM

MINIMUM HORIZONTAL DISTANCE IN CLEAR REQUIRED FROM	SUBSURFACE AND SUBSOIL IRRIGATION FIELD AND MULCH BASIN (feet)
Building structures	2
Property line adjoining private property	1.5
Water supply wells	100
Streams and lakes	100
Sewage pits or cesspools	5
Sewage disposal field	4
Septic tank	5
On-site domestic water service line	0
Pressurized public water main	10

CALCULATIONS SECTION

- 1. Estimate Daily Graywater Production
- Calculation Method (choose one and check box)

California Plumbing Code Estimate (Assign 2 occupants to master bedroom and 1 occupant to each additional bedroom) occupants x 15 gallons/day Laundrv gal/day

Estimate of graywater produced from winter (Dec-Feb) water use records (reference utility bill)

Laundry:	(gallons/load*) x(loads/	week) ÷ 7(days/week)	gal/day
	*Typical gals/per load: Front loader 15, Top loader 40	TOTAL	gal/day

2. Determine Minimum Mulch Basin Size

Minimum Mulch Basin Size:

gal/ft²/day = ft² (gal/day) Maximum Absorption Capacity (from column 3 in table below) From 1 above

*Dig mulch basin to a depth of 1 ft to ensure sufficient surge capacity for water leaving the laundry machine.

	Min SQ FT of Irrigation/ Leaching Area Per	Max Absorption Capacity in Gallons Per	
Design of Six Soil Types	100 Gallons of Estimated Graywater	SQ FT of Irrigation/ Leaching Area for	
	Discharge Per Day	an 24-Hour Period	
Coarse sand or gravel	20	5.0	
Fine Sand	25	4.0	
Sandy Loam	40	2.5	
Sandy Clay	60	1.7	
Clay with considerable sand or gravel	90	1.1	
Clay with small amounts of sand or gravel	120	0.8	

3. Determining Weekly Water Needs

Weekly Water needs = (0.62 x Area x Eto x Pf) / 4 weeks = *0.62 = (# of gal in 1" of water covering 1 ft²)

- Area = πr^2 = 3.14 x (canopy radius of existing plant)² <u>OR</u> = (Length x Width) for number of garden beds - Evapotranspiration rates (ETo) - Choose ETo for hottest month - July = 6.51"/month for Santa Rosa

- Plant factor (PF) = 0.3 (Low water use), 0.5 (Moderate water use) *check landscape plan for water use of plants in the hydrozone

THE KEY TO PROPER IRRIGATION WITH GRAYWATER IS TO KNOW HOW MUCH THE CHOSEN PLANTS NEED GIVEN EVAPOTRANSPIRATION RATES, PLANT WATERING NEEDS, AND EXISTING CANOPY.

-



ADDITIONAL INFORMATION

GRAYWATER IS RECEIVED BEST BY TREES, BUSHES, SHRUBS, SMALL PERENNIALS AND LARGER ANNUALS, BUT IS PROHIBITED ON LAWN, RAISED BEDS, ROOT AND LEAFY VEGETABLES. MODERATE WATER USERS SUCH AS FRUIT TREES ARE ALSO AN IDEAL APPLICATION. GRAYWATER IS SOMEWHAT ALKALINE (HIGH pH) AND NOT RECOMMENDED FOR PLANTS THAT PREFER ACIDIC SOILS (LOW pH) LIKE BLUEBERRIES AND RHODEDENDRONS SOIL TYPE WILL DETERMINE BOTH HOW QUICKLY GRAYWATER IS ABSORBED IN YOUR LANDSCAPE AND THE SIZE OF THE MULCH BASINS NEEDED TO INFILTRATE THE GRAYWATER..

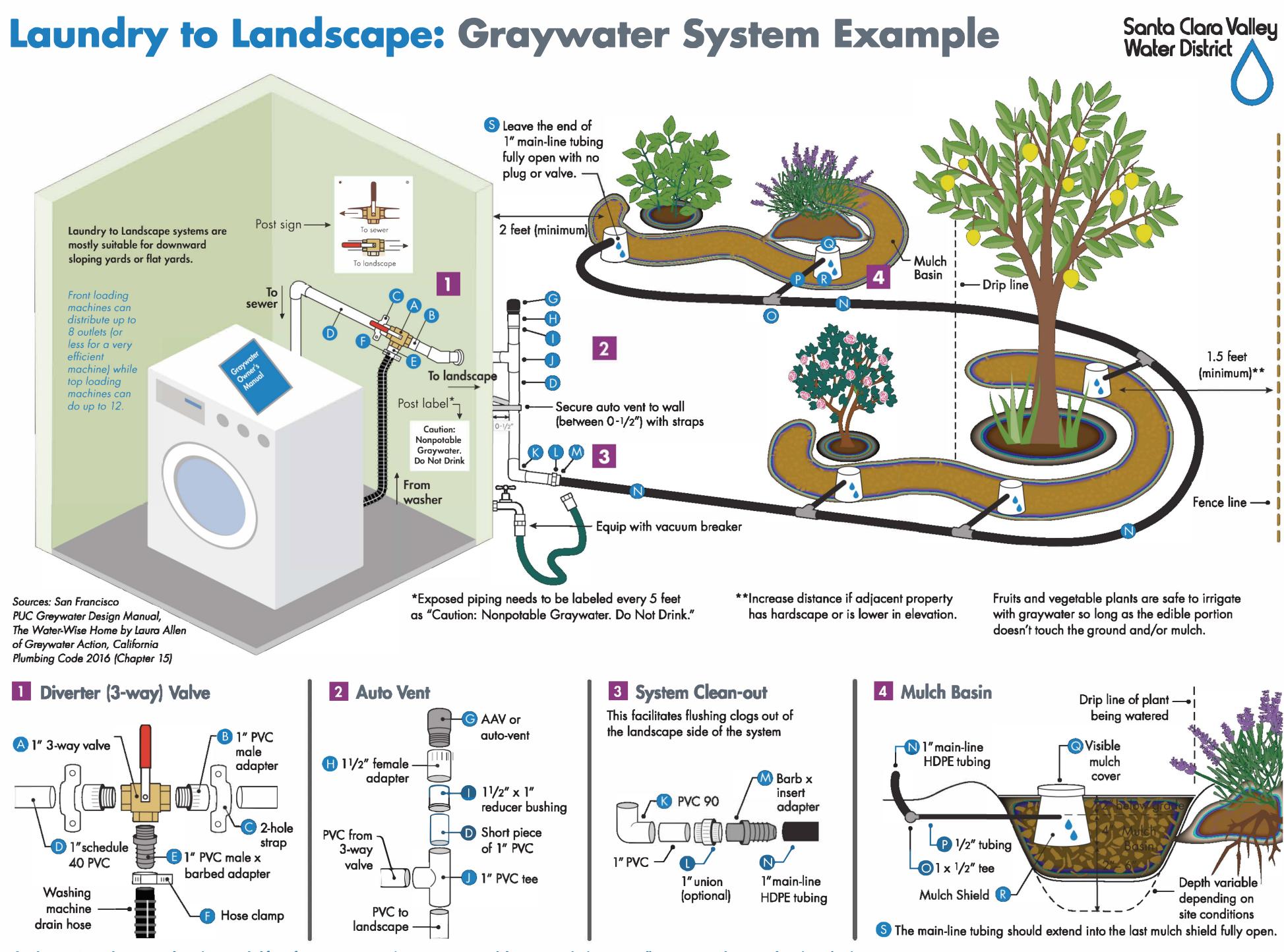
RECOMMENDED DETERGENTS:

TO ENSURE PLANT SURVIVAL AVOID SOAPS AND DETERGENTS THAT CONTAIN BORON. SODIUM AND CHLORINE COMPOUNDS. THE FOLLOWING LIST OF COMMERCIAL DETERGENTS ARE RECOMMENDED FOR USE WITH LAUNDRY TO LANDSCAPE GRAYWATER SYSTEMS

- OASIS LAUNDRY
- **BIO PAC LAUNDRY LIQUID**
- **BIOKLEEN LAUNDRY LIQUID**
- ECOVER LAUNDRY WASH (SOME SALT)
- LIQUID ECOS LIQUID DETERGENT
- LIFE TREE LAUNDRY LIQUID
- MOUNTAIN GREEN LAUNDRY DETERGENT
- VASKA HERBATERGENT

- APPLICANT INSTRUCTIONS:

- AND SUPPLY PIPE LOCATION.



This diagram is not drawn to scale and is provided for reference purposes only. It is your responsibility to properly design, install, maintain, and use your laundry to landscape graywater system (graywater system). If you are unsure of the intricacies of your plumbing system or how to properly design or install a graywater system, please consult with a professional. The District does not accept any liability and responsibility for any direct, special, indirect or consequential loss or damage whatsoever arising out of or in connection with providing you with access to this diagram.

LAUNDRY TO LANDSCAPE DETAIL Лите

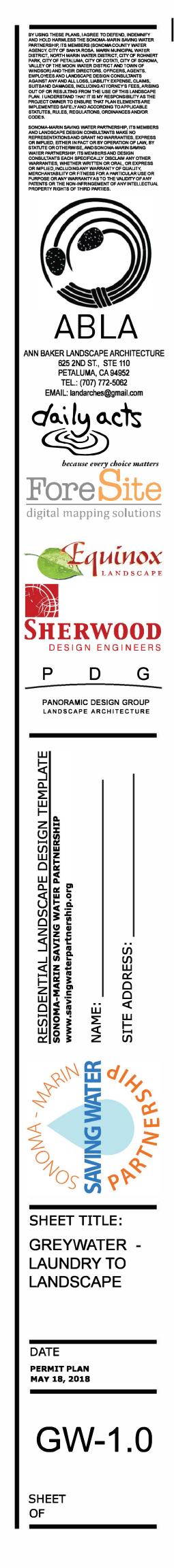
ESTIMATE YOUR GRAYWATER SUPPLY USING THE CALCULATION PROCESS IN CALCULATIONS SECTION BELOW. 2. COMPLETE CALCULATIONS TO DETERMINE THE MINIMUM REQUIRED MULCH BASIN SIZE PER YOUR SOIL TYPE. 3. MEASURE ACTUAL IRRIGATION FIELD AREA(S) ON SITE AND DEVELOP NUMBER AND SIZE OF MULCH BASINS TO USE THIS VOLUME THAT FIT IN THE LANDSCAPE AREAS.

4. REVIEW REQUIRED SETBACKS SHOWN IN CPC TABLE 1502.4 THIS SHEET.

5. DEVELOP A SITE PLAN ILLUSTRATING THE FOLLOWING: REQUIRED SETBACKS, PROPOSED MULCH BASINS, VALVE LOCATIONS, PIPING DIAGRAM, AND TREE AND PLANT LOCATIONS TO BENEFIT FROM GRAYWATER.

6. IF IN BUILDING DESIGN AND/OR CONSTRUCTION PROCESS REVIEW PLAN WITH ARCHITECT (FOR LOCATION OF LAUNDRY NEAR GRAYWATER SUPPLIED LANDSCAPE AREA), CIVIL ENGINEER (FOR ANY POTENTIAL CONFLICTS WITH STORMWATER DRAINAGE), AND GENERAL & LANDSCAPE CONTRACTORS TO REVIEW THREE WAY VALVE LOCATION

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APPLICANT INFORMATION:

BRANCHED DRAIN SYSTEM OVERVIEW:

A BRANCHED-DRAIN SYSTEM DISTRIBUTES GRAYWATER FROM SHOWERS AND/OR BATHROOM SINKS THROUGH A SERIES OF BRANCHING 1.5-INCH OR 2-INCH PIPES AND IS DISPERSED INTO THE LANDSCAPE VIA MULCH BASIN OUTLETS. PLUMBING FOR GRAYWATER SOURCES MUST BE SEPARATED FROM BLACK WATER SOURCES (TOILET, KITCHEN SINK). IF POSSIBLE DUE TO CLOSE PROXIMITY, A LAUNDRY MACHINE CAN ALSO BE ADDED INTO THE DISTRIBUTION PIPING. THIS SYSTEM IS DRIVEN BY GRAVITY FLOW AS NO PRESSURE IS PROVIDED BY A WASHING MACHINE PUMP OR ANY OTHER PUMP. AS THIS SYSTEM REQUIRES CUTTING INTO EXISTING SEWER PIPES FROM SHOWER DRAINS OR SINKS, IT DOES REQUIRE A SIMPLE OVER THE COUNTER PLUMBING PERMIT. IF INSTALLING AS PART OF NEW BUILDING CONSTRUCTION OR REMODEL, SHOW SEPERATED PLUMBING IN PLAN SETS AND STUB OUT PIPING FOR EXTERIOR GRAYWATER SYSTEM COMPONENTS DURING BUILDING CONSTRUCTION.

BRANCHED DRAIN GRAYWATER REQUIREMENTS TO COMPLY WITH CALIFORNIA PLUMBING CODE (CPC) STANDARDS:

- O NOTIFY ENFORCING AGENCY AND SECURE PERMIT FOR INTERIOR PLUMBING COMPONENTS
- O BE ABLE TO REDIRECT TO SEWER
- O NO POTABLE WATER CONNECTION
- O CONTAIN GRAYWATER ONSITE
- O DIRECT AND CONTAIN GRAYWATER WITHIN MULCH BASINS (IRRIGATION OR DISPOSAL FIELD) BELOW THE GROUND SURFACE
- O NO PONDING OR RUNOFF
- O OUTLETS COVERED BY AT LEAST 2-INCHES OF MULCH, ROCK, OR A SHIELD (E.G. VALVE BOX LID)
- O MINIMIZE CONTACT WITH HUMANS AND ANIMALS
- O DIVERT WATER TO THE SEWER IF IT CONTAINS DIAPERS, OIL, OTHER CHEMICALS
- O GRAYWATER DIVERTED TO LANDSCAPE SHALL NOT CONTAIN HAZARDOUS CHEMICALS
- O FOLLOW ALL APPLICABLE CODE OR LAWS
- O POST OPERATION AND MAINTENANCE MANUAL
- O THE SYSTEM SHALL HAVE A DISCHARGE CAPACITY OF 250 GALLONS PER DAY OR LESS

INSTALLATION & DESIGN CONSIDERATIONS:

WITH A HIGHER POTENTIAL VOLUME OF WATER COMING FROM A SHOWER AND SINK, A BRANCHED DRAIN SYSTEM IS BEST SUITED FOR IRRIGATING TREES, BUSHES, SHRUBS, AND OTHER LARGER PERENNIAL PLANTS. THIS IS A SIMPLE SYSTEM AND DOES NOT REQUIRE ELECTRICITY OR A PUMP. HOWEVER, THE LANDSCAPE AREA MUST BE LOWER IN ELEVATION THAN THE GRAYWATER SOURCE,

CALCULATIONS SECTION

1.	Estimate Daily Graywater Production		
	Colouistics Method (shapes and shape how)		

Calculation Method (choose one and check box)				
🛛 California Plumbing	g Code Estimate (Assign 2 occupants to master b	edroom and 1 occu	pant to each additional bedroom)	
Laundry:	occupants x 15 gallons/day		gals/day	
Shower/Sink:	occupants x 25 gallons/day	÷ 7(days/week)	gals/day	
		TOTAL	gals/day	
Estimate of graywa	nter produced from winter (Dec-Feb) water use i	r ecords (attach utili	ty bill)	
Laundry:	Avg. water use ÷30 days(gals/day)	X .22	(gals/day)	
Shower:	Avg. water use ÷30 days(gals/day)	X .17	(gals/day)	
Sink:	Avg. water use ÷30 days(gals/day)	X .22	(gals/day)	
		TOTAL	(gals/day)	

2. Determine Minimum Mulch Basin Size

Minimum Mulch Basin Area:

 $(gal/day) \div gal/ft^2/day = ft^2$ From 1 above Maximum Absorption Capacity (from column 3 in table below)

*Dig mulch basin to a depth of 1 ft to ensure sufficient surge capacity for water leaving the laundry machine.

	Min SQ FT of Irrigation/ Leaching Area Per	Max Absorption Capacity in Gallons Per	
Design of Six Soil Types	100 Gallons of Estimated Graywater	SQ FT of Irrigation/ Leaching Area for	
	Discharge Per Day	an 24-Hour Period	
Coarse sand or gravel	20	5.0	
Fine Sand	25	4.0	
Sandy Loam	40	2.5	
Sandy Clay	60	1.7	
Clay with considerable sand or gravel	90	1.1	
Clay with small amounts of sand or gravel	120	0.8	

AND THE ENTIRE SYSTEM MUST HAVE A DOWNWARD SLOPE OF 2 % (1/4 INCH PER FOOT) TO ENSURE EVEN DISTRIBUTION.

INSTALLATION DIFFICULTY DEPENDS ON THE EXISTING HOUSEHOLD PLUMBING, ACCESS TO PIPES AND THE SLOPE OF LANDSCAPE. WHILE OUTDOOR COMPONENTS CAN BE INSTALLED BY A HOMEOWNER, A PROFESSIONAL PLUMBER IS NEEDED FOR INSTALLATION OF 3-WAY DIVERTER VALVE ON THE SEWER LINE. THE HOMEOWNER HAS THE OPTION TO INSTALL AN ACTUATOR, WHICH ALLOWS EASY DIVERSION OF GRAYWATER BETWEEN LANDSCAPE AND THE SEWER LINE.

SYSTEM COSTS & REBATES: THE COSTS CAN RANGE FROM A THOUSAND DOLLARS WHEN PRIMARILY INSTALLED BY A HOMEOWNER TO SEVERAL THOUSAND IF INSTALLED BY A PROFESSIONAL. WHILE MORE COSTLY TO CONSTRUCT THAN A LAUNDRY TO LANDSCAPE SYSTEM, A BRANCHED DRAIN SYSTEM REQUIRES LITTLE MAINTENANCE AND LASTS A LONG TIME, SINCE IT HAS NO MOVING PARTS TO BREAK.

RECOMMENDED SOAPS:

MORE SOAPS ARE COMING OUT ALL THE TIME, BUT IT IS ALWAYS IMPORTANT TO READ THE INGREDIENTS LIST. BELOW ARE SEVERAL THAT ARE KNOWN TO BE GRAYWATER COMPLIANT.

- OASIS ALL-PURPOSE CLEANER FOR HAND-WASHING, BODY & SHAMPOO
- DR. BRONNER'S MAGIC SOAPS (LIQUID)
- AUBREY ORGANICS SHAMPOOS

APPLICANT INSTRUCTIONS:

- 1. ESTIMATE YOUR GRAYWATER SUPPLY USING THE CALCULATION SECTION THIS SHEET.
- 2. ESTIMATE MULCH BASIN SIZES, AREA AND VOLUME USING TABLE 3.
- 3. DEVELOP A GRAYWATER SITE PLAN SHOWING THE SYSTEM LAYOUT FOR THE PERMIT APPLICATION. SHOW ALL THE PLAN ELEMENTS LISTED IN #4 -GRAYWATER PLAN BELOW . REVIEW THE SAMPLE PLAN SHOWN IN DETAIL #1 THIS SHEET. SHOW TREE AND PLANT LOCATIONS TO BENEFIT FROM GREYWATER.
- 4. SUBMIT FOR BUILDING PERMIT EITHER WITH FULL SITE DRAWINGS OR AS A SEPARATE SUBMITTAL.
- 5. REVIEW PIPE AND VALVE LOCATIONS WITH ARCHITECT, ENGINEER AND CONTRACTOR TO INSURE THERE ARE NO CONFLICTS WITH OTHER SITE ELEMENTS. CONFIRM COMPONENTS TO BE INSTALLED AT TIME OF FOUNDATION SYSTEM CONSTRUCTION, INCLUDING PIPE STUB OUT FOR EXTERIOR GRAYWATER SYSTEM DEVELOPMENT.

3. Determine Mulch Basin Required Volume (Complete section below)

Gravity to Mulch Basins (Branched Drain)

Total mulch basin surge capacity: _____gal/day \div 7.48 gal/ft³ \div 0.80 = ____ft³

4. Graywater Plan

Using graph paper, or a copy of your site plan, draw a map and legend of graywater system components that shows the pathway of piping from the fixture(s) inside the building to the landscape/irrigation field. If graywater is directed to the front yard, show the street frontage and your driveway. In your drawing, include the location of all:

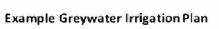
 Graywater valves
 Graywater pipes and fittings (*indicate material and size*)
 Clean-outs

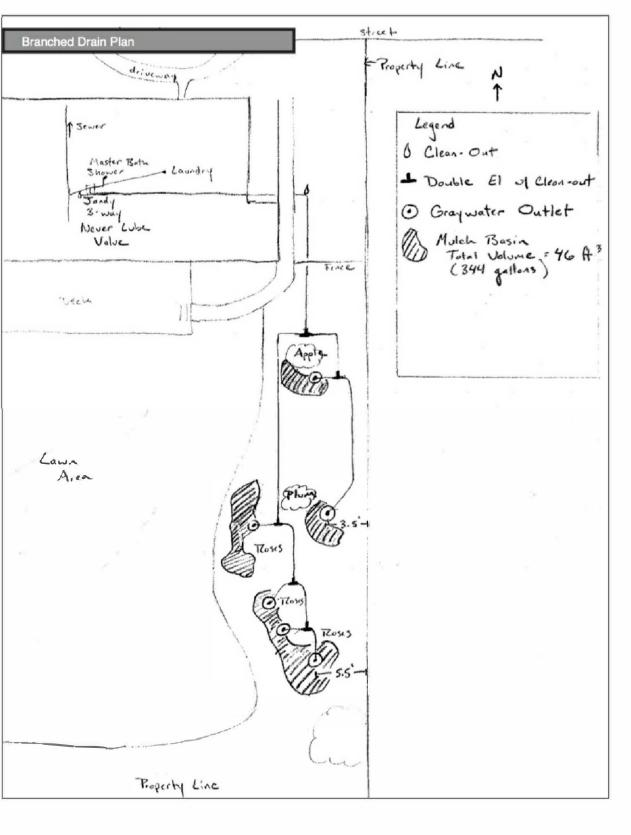
Graywater outlets and mulch basins

- Setback of graywater outlets to property lines and buildings*
 Setback of graywater outlets to onsite wastewater treatment system tanks and
- leachfields* (*if applicable*).
 Setback of greywater outlets to wells and drainages* (*if applicable*).
- *See table below for required setbacks. See the California Plumbing Code for additional notes aboutsetbacks.

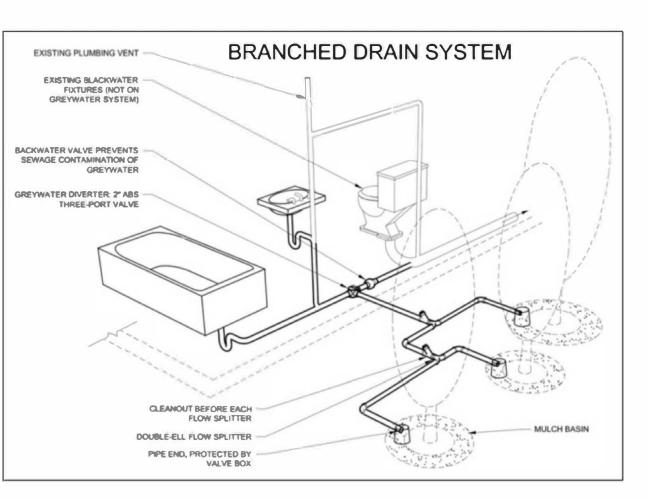
CPC Table 1502.4 --- LOCATION OF GREY WATER SYSTEM

MINIMUM HORIZONTAL DISTANCE IN CLEAR REQUIRED FROM	SUBSURFACE AND SUBSOIL IRRIGATION FIELD AND MULCH BASIN (feet)
Building structures	2
Property line adjoining private property	1.5
Water supply wells	100
Streams and lakes	100
Sewage pits or cesspools	5
Sewage disposal field	4
Septic tank	5
On-site domestic water service line	0
Pressurized public water main	10



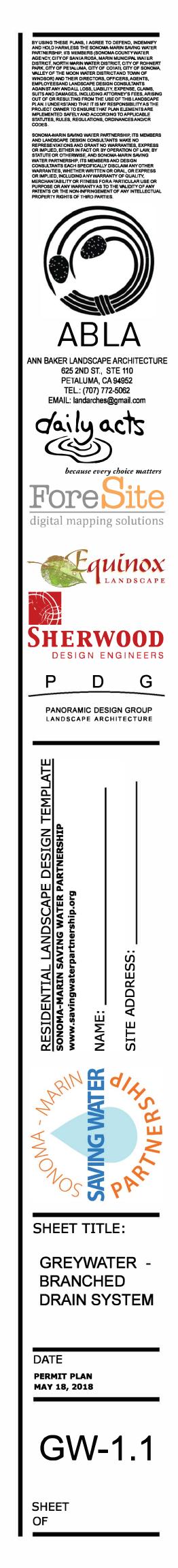


BRANCHED DRAIN SAMPLE SITE PLAN NTS





BRANCHED DRAIN SYSTEM DIAGRAM AND INSTALL PHOTO



RAINWATER HARVESTING DETAIL

4. TANKS CAN BE DAISY CHAINED AT POINT "D" USING FLEXIBLE PIPE ONLY TO REDUCE CHANCE OF LEAKAGE IN EARTHQUAKES. 5. THERE ARE NO REQUIRED SETBACKS FROM BUILDINGS OR SIDE/BACK PROPERTY LINES, THOUGH A CONVERSATION WITH YOUR NEIGHBOR COULD BE HELPFUL.

2. PUMP AND PRESSURE TANK LIKELY REQUIRE INEXPENSIVE, OVER-THE-COUNTER, ELECTRICAL PERMIT. 3. IF CITY WATER PLUMBED TO TANK FOR MAKE UP USING FLOAT VALVE OR MANUALLY OPERATED VALVE, THEN A PERMIT IS REQUIRED AND AN AIR GAP IS REQUIRED BETWEEN RAINWATER HARVESTING SYSTEM AND DOMESTIC WATER SYSTEM.

ALL OTHER RAINWATER CATCHMENT SYSTEMS MUST BE SUBMITTED FOR BUILDING PERMIT.

- DOES NOT REQUIRE ELECTRICAL POWER OR MAKEUP WATER SUPPLY CONNECTION (SEE NOTE 2 AND 3)

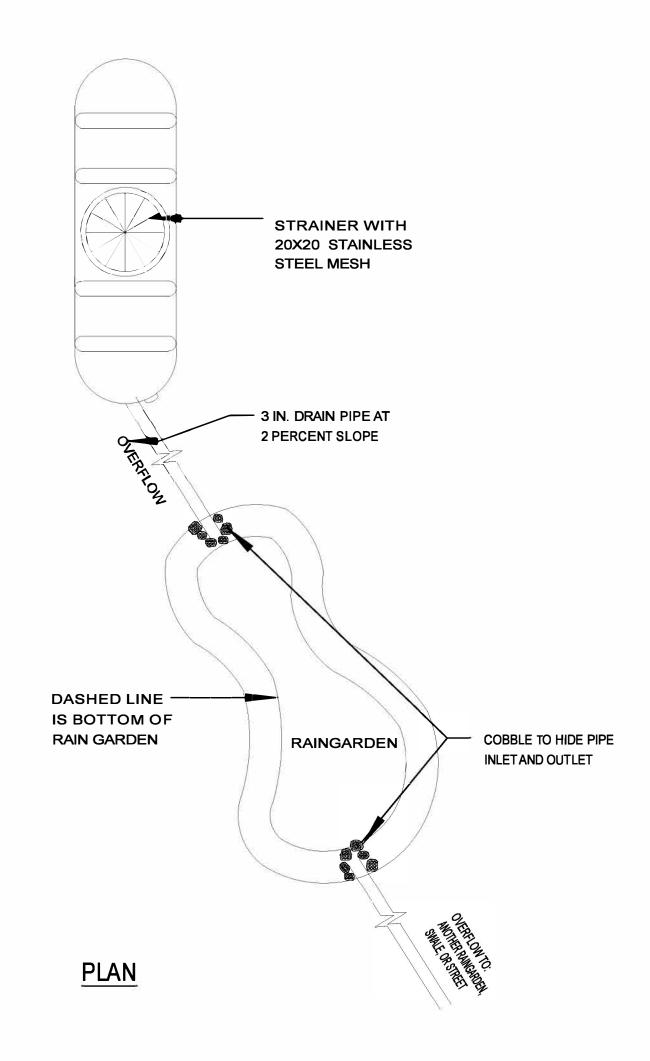
- RATIO OF HEIGHT TO DIAMETER OR WIDTH DOES NOT EXCEED 2 TO 1

- MAXIMUM STORAGE CAPACITY OF 5,000 GALLONS - TANK IS SUPPORTED DIRECTLY UPON GRADE

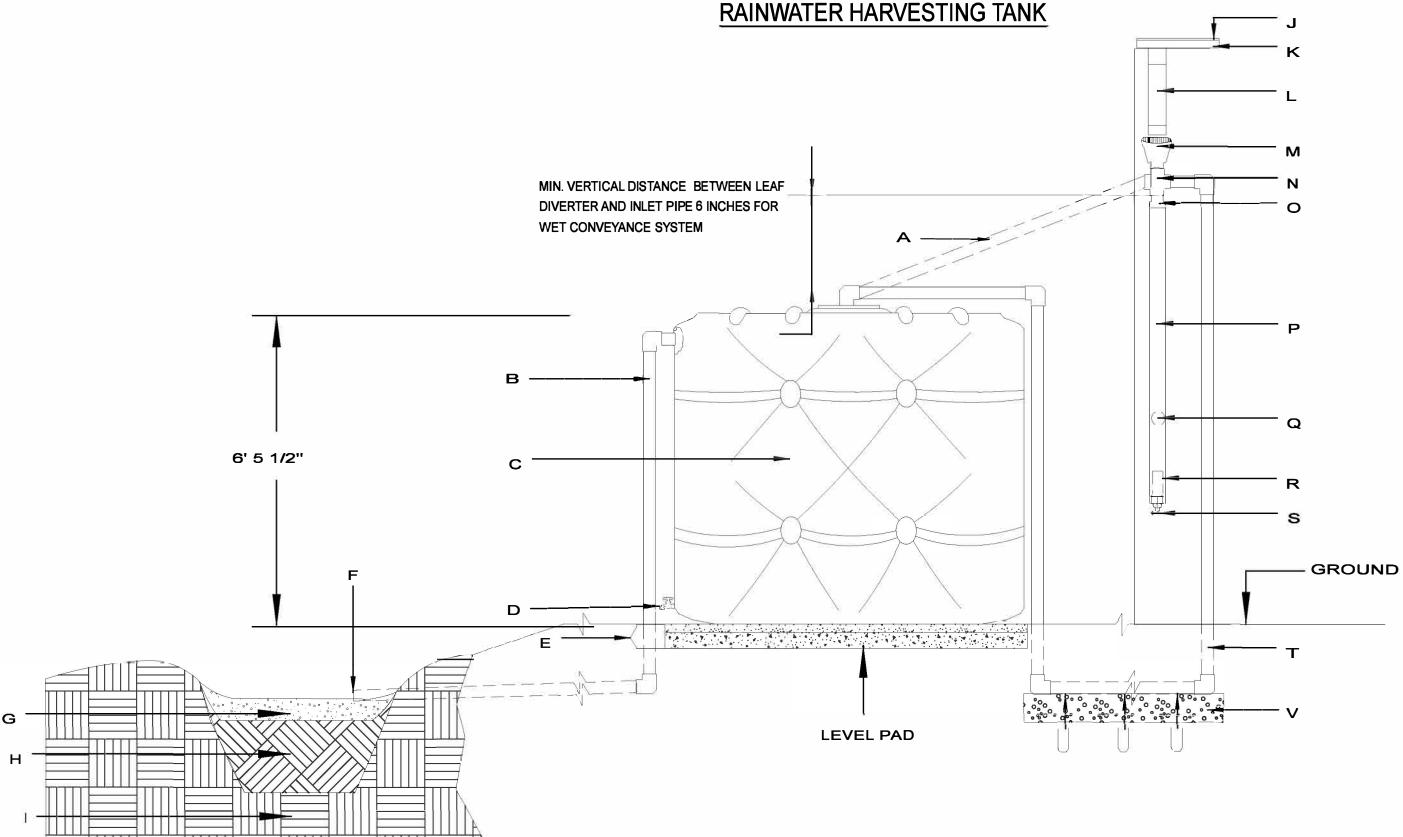
- WATER WILL BE USED FOR OUTDOOR NON-SPRAY IRRIGATION

NOTES: 1. A RAINWATER CATCHMENT SYSTEM MAY NOT REQUIRE A BUILDING PERMIT PROVIDED ALL OF THE FOLLOWING ARE MET (CALIFORNIA PLUMBING CODE 1601.3 (I):

1/2" = 1'-0"



ELEVATION VIEW 530 GAL RAINWATER HARVESTING TANK



SECTION VIEW RAIN GARDEN

A. PREFERRED DRY CONVEYANCE IF TANKS ARE NEXT TO DOWNSPOUT

- B. OVERFLOW: 3 IN. DRAINAGE PIPE: SLOPED 2 PERCENT FOR HORIZONTAL SECTIONS
- C. 530 GALLON BUSHMAN SLIMLINE RAIN HARVESTING TANK OR EQUIVALENT
- D. HOSE BIB OR OPTIONAL CONNECTION TO PUMP AND PRESSURE TANK (SEE NOTE 2)
- E. 4 INCHES COMPACTED BASEROCK WITH 2 INCHES OF PEA GRAVEL ON TOP
- F. OVERFLOW TO RAINGARDEN (SHOWN)/SWALE/SPLASHBLOCK
- G. 5 INCHES OF DECORATIVE GRAVEL WITH 2 INCHES OF PONDED WATER ABOVE H. 12 INCHES AMENDED SOIL: 1/2 COMPOST, 1/2 NATIVE SOIL
- I. UNDISTURBED NATIVE SOIL
- J. FIRE SAFER LEAF GUARD
- K. GUTTER
- L. NORMAL DOWNSPOUT

- N. 3 IN. PVC DRAINAGE TEE

M. OPTIONAL BUSHMAN LEAF DIVERTER (WITH 20X20 SCREEN IF USING WET CONVEYANCE) (REDUNDANT WITH LEAF GUARD ON GUTTERS)

O. 4 IN. TO 3 IN. PVC DRAINAGE REDUCER

P. 4 IN. DRAINAGE PIPE FOR THE FIRST FLUSH (THIS REMOVES THE FIRST, DIRTY WATER FROM A RAINSTORM)

Q. BUSHMAN FLOAT BALL

R. BUSHMAN FIRST FLUSH FILTERS (TO KEEP EMITTER FROM CLOGGING)

S. BUSHMAN DRIP EMITTER TO DRAIN DIRTY WATER BETWEEN STORMS

T. "WET" CONVEYENACE 3 IN. DRAINAGE PIPE (WATER STAYS IN PIPE BETWEEN STORMS)

U. THREE SEPARATE 3/32 INCH HOLES TO DRAIN WATER FOR MOSQUITO CONTROL

V. CLEAN GRAVEL TO IMPROVE DRAINAGE FROM DRILLED HOLES

