

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.

POST-CONSTRUCTION REQUIREMENTS

STEP 5: POST-CONSTRUCTION CERTIFICATION

TO BE SIGNED BY APPLICANT

I HAVE COMPLIED WITH THE REQUIREMENTS OF THE PRESCRIPTIVE COMPLIANCE OPTION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE

APPLICANT NAME (PLEASE PRINT)

APPLICANT SIGNATURE DATE

STEP 6: WELO FINAL INSPECTION CHECKLIST

YES NO NA

- |                          |                          |                          | PLANTING   |
|--------------------------|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. ALL PLANTS INSTALLED ARE LISTED ON PLANS OR ON APPROVED PLANT SUBSTITUTION LIST   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2. 75% OR MORE OF THE PLANTS ARE LOW WATER USE PER WUCOLS REGION 1   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. NO STANDARD HIGH WATER USE TURF HAS BEEN INSTALLED  |
|                          |                          |                          | SOIL   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. COMPOST HAS BEEN APPLIED AT A RATE OF AT LEAST FOUR (4) CUBIC YARDS PER ONE THOUSAND (1,000) SQUARE FEET AND HAS BEEN INCORPORATED TO A DEPTH OF SIX (6) INCHES INTO THE LANDSAPE AREA. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2. A THREE (3) INCH LAYER OF ORGANIC MULCH HAS BEEN APPLIED OVER ALL SHRUB PLANTING AREAS  |
|                          |                          |                          | IRRIGATION   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. NO SPRAY IRRIGATION IS USED   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2. STATIC AND DYNAMIC WATER PRESSURE NOTED AT THE POINT OF CONNECTION  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. WEATHER BASED SELF ADJUSTING CONTROLLER WITH NON-VOLATILE MEMORY IS INSTALLED PER MANUFACTURERS SPECIFICATIONS  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4. RAINSENSOR AND WEATHER SENSOR (IF REQUIRED FOR WEATHER DATA) INSTALLED PER MANUFACTUERS SPECIFICATION AND IS FUNCTIONING  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5. CONTROLLER IS ACURATELY PROGRAMMED  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6. CONTROLLER CHART IS PLACED IN CONTROLLER HOUSING OR ADJACENT TO CONTROLLER  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7. CONTROLLER CHART CLEARLY INDICATES STATIONS & VALVE ZONES   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8. CONTROLLER CHART CLEARLY INDICATES JULY IRRIGATION SCHEDULE FOR EACH ZONE AND INCLUDES PROGRAMS, DAYS PER WEEK, START TIME, AND RUN TIMES   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 9. IRRIGATION SYSTEM SHUT OFF VALVE INSTALLED  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 10. IRRIGATION SYSTEM SHUT OFF VALVE LOCATION IS AS SHOWN ON PLAN OR ON AS-BUILT   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 11. DRIP IRRIGATION CONTROL ZONE ASSEMBLIES ARE INSTALLED AND FUNCTIONING  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 12. DRIP IRRIGATION LINES ARE INSTALLED AS SHOWN ON PLAN & DETAILS   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 13. DRIP FLUSHOUTS ARE INSTALLED LOWEST POINT OF EACH ZONE AND ARE FUNCTIONING   |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 14. SYSTEM OPERATES WITHOUT LEAKS, BREAKS OR RUNOFF  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 15. EQUIPMENT INSTALLED IS AS SHOWN ON APPROVED IRRIGATION EQUIPMENT LIST, OR EQUAL  |
|                          |                          |                          | GENERAL  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. CHANGES ARE NOTED ON AS-BUILT PLAN AND IS PROVIDED AT TIME OF INSPECTION  |

SYMBOLS & DEFINITIONS

- 1. CLIMATE ADAPTIVE: NON-NATIVE PLANTS WHICH ARE ADAPTED TO LOCAL MICROCLIMATES.
- 2. INVASIVE PLANTS: CALIFORNIA INVASIVE PLANT COUNCIL ("Cal-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.
- 3. HYDROZONE: AN AREA OF THE LANDSCAPE HAVING PLANTS WITH SIMILAR WATER NEEDS AND ROOTING DEPTHS AND THE SAME MICRO-CLIMATE.
- 4. IRRIGATION CONTROLLER: SMART CONTROLLERS ARE REQUIRED. THESE ADJUST AUTOMATICALLY USING WEATHER OR SOIL MOISTURE DATA.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. TURF: A GROUND COVER SURFACE OF MOWED GRASS (CONVENTIONAL LAWN)
- 9. TURF ALTERNATIVE: A LOW WATER USE GRASS OR GROUNDCOVER PLANTING THAT SPREADS TO FORM A LOW COVER THAT CAN BE OCCASIONALLY WALKED UPON.
- 10. WEATHER SENSOR: SENSOR CONNECTED TO THE IRRIGATION CONTROLLER WHICH DETECTS RAIN, FREEZE, WIND ETC. AND SUSPENDS OR ADJUSTS IRRIGATION OPERATION.

REFERENCE

TITLE 23 CHAPTER 2.7 MWEL0: THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE

MWEL0 SECTIONS:

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) MWEL0 FINAL INSPECTION CHECKLIST  
SECTION 492.7  
(a)(1)(B) IRRIGATION CONTROLLER  
(a)(1)(D) WEATHER SENSOR

PRE CONSTRUCTION - PERMIT APPLICATION BY OWNER - FILL IN AREAS BELOW

CONFIRM APPLICABILITY

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 MWEL0.

STEP 1: PROJECT INFORMATION

TO BE FILLED OUT BY APPLICANT

DATE: \_\_\_\_\_

PROJECT APPLICANT (NAME): \_\_\_\_\_

PROJECT ADDRESS: \_\_\_\_\_

TOTAL PROJECT LANDSCAPE AREA (≤ 2500): \_\_\_\_\_(SF)

MEDIUM WATER USE PLANT MATERIAL AREA (≤ 25%): \_\_\_\_\_(SF)

LOW TO VERY LOW NON-TURF PLANT MATERIAL AREA (≥ 75%): \_\_\_\_\_(SF)

PROJECT TYPE: NEW RESIDENTIAL

WATER SUPPLY TYPE : \_\_\_\_\_  
(POTABLE/RECYCLED/WELL)

LOCAL WATER PURVEYOR: \_\_\_\_\_

STEP 2: SIGN PRE-CONSTRUCTION AGREEMENT

TO BY SIGNED BY APPLICANT

I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE PRESCRIPTIVE COMPLIANCE OPTION OF THE WATER EFFICIENT LANDSCAPE ORDINANCE

APPLICANT NAME (PLEASE PRINT)

APPLICANT SIGNATURE DATE

STEP 3: PROVIDE PERMIT AGENCY REQUIRED PLANS

PLANS TO BE PROVIDED BY APPLICANT:	OPTIONAL PLANS
<ul style="list-style-type: none"><li>- L-0.0 PERMIT COVER SHEET</li><li>- L-1.0 LANDSCAPE DESIGN PLAN</li><li>- L-2.0 IRRIGATION DESIGN PLAN</li><li>- L-2.1 IRRIGATION DETAIL SHEET</li><li>- L-3.0 PAVING DETAILS</li><li>- L-3.1 L.I.D. DETAILS</li><li>- L-3.2 PLANTING DETAILS</li></ul>	<ul style="list-style-type: none"><li>GW-1.0</li><li>GW-1.1</li><li>RW-1.0</li></ul>

STEP 4: SIGN DISCLAIMER

TO BE SIGNED BY APPLICANT

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.

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APPLICANT NAME (PLEASE PRINT)

APPLICANT SIGNATURE DATE

AGENCY STAMP



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SONOMA-MARIN SAVING WATER PARTNERSHIP  
[www.savingwaterpartnership.org](http://www.savingwaterpartnership.org)  
NAME: \_\_\_\_\_  
SITE ADDRESS: \_\_\_\_\_



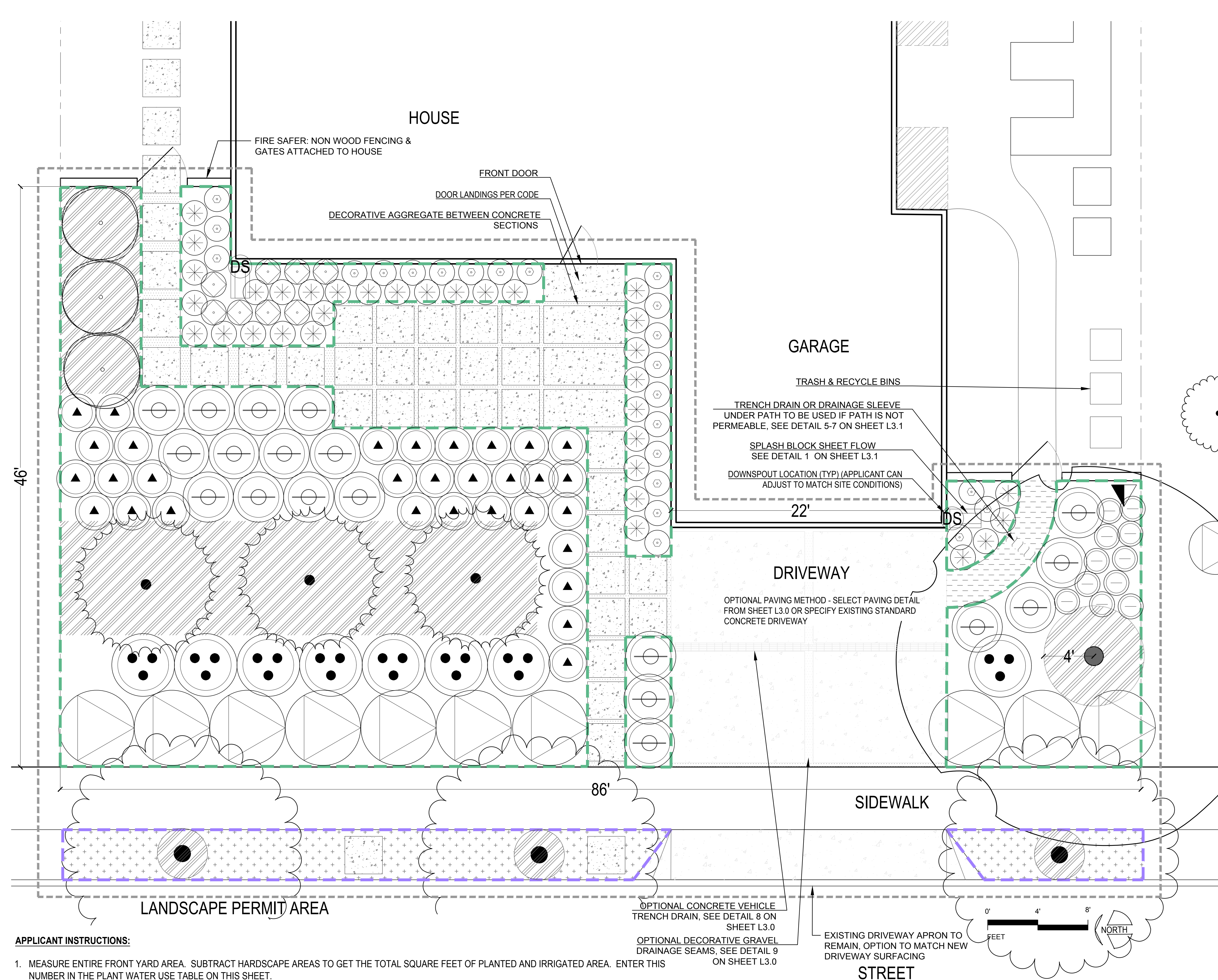
SHEET TITLE:  
RESIDENTIAL  
LANDSCAPE  
PERMIT COVER  
SHEET

DATE  
PERMIT PLAN  
SEPTEMBER 26, 2018

L-0.0

SHEET  
OF





OPTIONAL MATERIALS LEGEND			
VEHICULAR PAVING		UNITS	PLAN QUANTITY
	VEHICULAR DRAINAGE STRIPS IN DRIVEWAY SEE DETAILS 8 & 9 ON SHEET L3.0	LF	42
	CONCRETE	SF	380
PEDESTRIAN PAVING		UNITS	PLAN QUANTITY
	CONCRETE (POURED IN PLACE)	SF	368
	AGGREGATE PATH CHOOSE FROM DETAILS #1-5 ON L3.0	SF	42
	MULCH SEE DETAIL 5 ON SHEET L3.2	SF	
STORM WATER ELEMENTS		UNITS	PLAN QUANTITY
	STORM DRAINAGE ACROSS/UNDER PATH, SEE DETAIL 6 ON SHEET L3.1	EA	1

*SEE SHEETS L3.0-3.2 FOR MATERIALS OPTIONS					
PLANTING LEGEND					
AREA	BOTANICAL NAME	SIZE	SPACING	PLAN QUANTITY	PERMIT QUANTITY (FILL IN)
PLANTING LOW WATER USE					
	LARGE TREE 50-80' SINKGO QUERCUS SUBER (CORK OAK)	15G	30-60' O.C.	1	
	MEDIUM TREE 30-50' PISTACIA CHINENSIS (PISTACHE)	15G	20-40' O.C.	3	
	LARGE SHRUB 6-18' SAMBUCUS NIGRA	5G	10-20' O.C.	3	
	GRASS - FESTUCA 'SISKIYOU BLUE'	4"	2' O.C.	33	
	PERENNIALS 0-1' SUN - ERIOPHYLLUM LANATUM 'SISKIYOU'	4" OR 1G	4' O.C.	19	
	- LESSINGIA FILAGINIFOLIA 'SILVER CARPET'	1G	6' O.C.	10	
	PERENNIALS 2-4' SUN - ANIGOZANTHOS (KANGAROO PAW)	1G	2' O.C.	23	
	- HELIANTHEMUM 'BEN NEVIS'	4"	3' O.C.	31	
	- PHORMIUM 'CHOCOLATE BABY'	1G	2' O.C.	8	
	- SEDUM SPECTABILE	4"	3' O.C.	11	
	SHRUBS 1-3' SUN - ARCTOSTAPHYLOS 'JOHN DOURLEY' (MANZANITA)	1G	4-6' O.C.	8	
	SHRUBS 3-6' SUN - RIBES MALVACEUM 'DANCING TASSELS'	1G	6' O.C.	3	
	VINE PLANTING - VITIS CALIFORNICA 'ROGERS RED'	1G		1	
	PLANTING MED WATER USE PARK STRIP (OPTIONAL) - NO MOW FESCUE	SOD OR 2" OR 4" PLUGS - 16" O.C.		257 SF	

\*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.

PLANT WATER USE TABLE			
WATER USE	PLAN SF (%)	PERMIT SF (FILL IN)	PERMIT % (FILL IN)
LOW	1,908 (89%)		
MED	244 (11%)		
TOTAL	2,152 (100%)		

- APPLICANT INSTRUCTIONS:**
- 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.
  - IF NEEDED USE A RED PEN TO ADJUST THE LAYOUT OF DRIVEWAY, PATHS AND PLANTING AREAS TO FIT YOUR YARD.
  - ADJUST ORIENTATION OF NORTH ARROW TO SITE CONDITION.
  - ADD ANY EXISTING TREES IN RED ON THE PLAN. ADJUST TREE LOCATIONS IF NEEDED TO FIT YOUR SITE.
  - FILL IN PLANT WATER USE TABLE.
  - INSURE LESS THAN 25% OF PLANTED AREA IS MEDIUM WATER USE PLANTINGS.
  - IN THE LEGEND, CIRCLE THE HARDSCAPE MATERIALS YOU WILL BE USING AND ON DETAIL SHEETS L3.0, L3.1 & L3.2.
  - 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).
  - MOVE TO THE IRRIGATION PLAN AND FILL IN THE AREAS INDICATED ON THAT SHEET.
- NOTE:**
- PLANTING DESIGN FOR FULL COVER WITHIN 3 YEARS.
  - 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.
  - REVIEW IRRIGATION SHEETS AND INSTALL SLEEVES UNDER PAVING SURFACES IN THEIR CORRECT LOCATION.

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 SONOMA, MARIN MUNICIPAL WATER DISTRICT, NORTON MARIN WATER DISTRICT, CITY OF ROSS, CITY OF PETALUMA, CITY OF GAITHER, CITY OF SONOMA, VALLEY OF THE MOON WATER DISTRICT) AND TOWN OF WOODBURN 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 FROM THE USE OF THESE PLANS, REGARDLESS OF WHETHER THE PLANS UNDERSTAND THAT IT IS MY RESPONSIBILITY AS THE PROJECT OWNER TO ENSURE THAT ALL ELEMENTS ARE IMPLEMENTED SAFELY AND ACCORDING TO APPLICABLE STATUTES, RULES, REGULATIONS, ORDINANCES AND/OR CODES.

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NAME: \_\_\_\_\_  
SITE ADDRESS: \_\_\_\_\_

SONOMA-MARIN SAVING WATER PARTNERSHIP

SHEET TITLE:  
LAYOUT &  
PLANTING PLAN  
CONTEMPORARY B

DATE  
PERMIT PLAN  
JANUARY 17, 2019

**L-1.0**

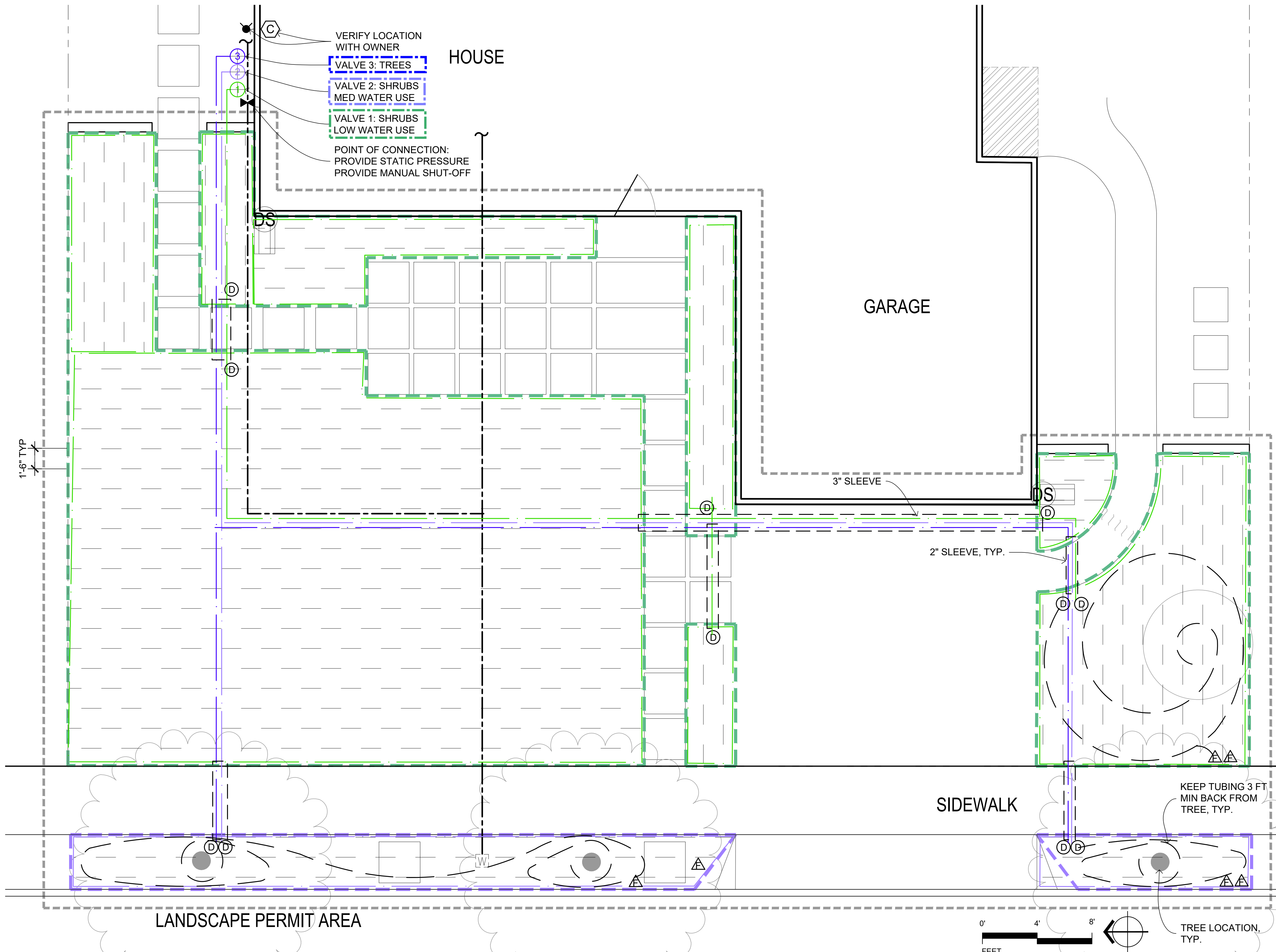
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APPLICANT CHECK-OFF COMPONENTS	SYMBOL	COMPONENT	MANUFAC - TURER	MODEL	NOTES / SIZE / COLOR
		EXISTING WATER METER			
		CONTROLLER	HUNTER	PRO-C	INDOOR
		WEATHER SENSOR	HUNTER	SOLAR-SYNC-SEN	WIRED
		FULL PORT BALL VALVE	NIBCO	585	LINE SIZE
		SLEEVE		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 IRRIGATION CONTROL VALVE ASSEMBLY TO INCLUDE:			
		ASSEMBLY	HUNTER	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)		PGV-ASV, INCLUDED IN KIT	3/4 INCH ANTI-SIPHON VALVE PROVIDES BACKFLOW PREVENTION
		DRIP FILTER		INCLUDED IN KIT	150 MESH STAINLESS STEEL SCREEN
		PRESSURE REGULATION		INCLUDED IN KIT	40 PSI
			NIPPLE		
		TRANSITION TO DRIP ZONE			SEE DETAIL
	DRIP LAYOUT				
		PLANTING BEDS			
		TREES	NETAFIM TLCV6-1201 EMITTER FLOW 0.6 GPH; EMITTER SPACING: 12".		
		INLINE EMITTER TUBING	NETAFIM	TLCV4-1801	<b>CLAY SOIL:</b> EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18"
				TLCV4-1801	<b>LOAM SOIL:</b> EMITTER FLOW: 0.4 GPH; EMITTER SPACING: 18"; ROW SPACING: 18"
				TLCV6-1201	<b>SANDY SOIL:</b> EMITTER FLOW: 0.6 GPH; EMITTER SPACING: 12"; ROW SPACING: 18"
		DRIP FLUSHOUT	NETAFIM	TLFIG8	
SYMBOLS FOR COMPONENTS ARE LARGER THAN ACTUAL SIZE AND MAY BE SHOWN IN PAVED AREAS FOR GRAPHIC CLARITY. COORDINATE LOCATION OF EQUIPMENT WITH PLUMBER.					
ALL PIPE RUNS UNDER PAVING ARE IN SLEEVES, INSTALL SLEEVES PRIOR TO POURING CONCRETE					

1. ADJUST LAYOUT OF PLANTING BEDS IF CHANGED ON LAYOUT SHEET 1.0.
2. REVIEW IRRIGATION VALVE TABLE TO ADJUST SF AREAS OF VALVE ZONES.
3. IF AREAS EXCEED MAX SUBZONE FLOW (3 GPM) DIVIDE INTO ADDITIONAL SUBZONES AND ENTER UNDER SUBZONE COLUMN
4. IF AREAS EXCEED MAX ZONE FLOW (7 GPM) ADD A VALVE AND ENTER SF AREA NEXT TO NEW VALVE NUMBER ("B" OR "C")
5. DRAW OUT NEW SUBZONE AND/OR VALVE ZONE AREA ON PLAN IN NEW COLOR.
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.

PLANT WATER USE TABLE			
WATER USE	PLAN SF (%)	PERMIT SF (FILL IN)	PERMIT % (FILL IN)
LOW	1,908 (89%)		
MED	244 (11%)		
TOTAL	2,152 (100%)		

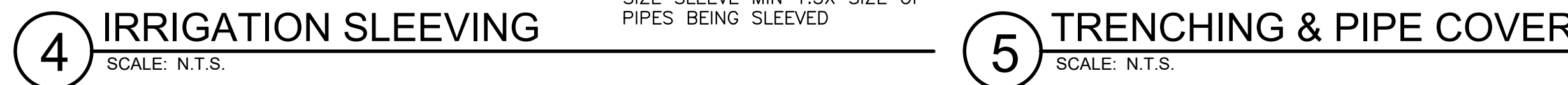
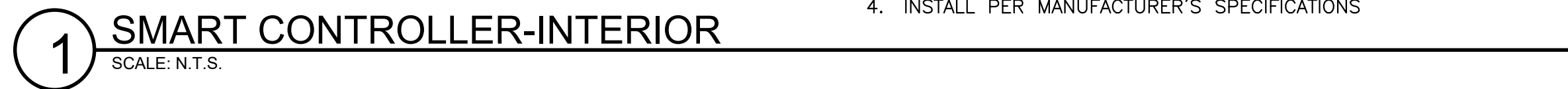


HYDRO ZONE	WATER USE	VALVE	PLAN SF	SUB - ZONES	PERMIT SF (FILL IN)	SUB - ZONES (FILL IN)	SOIL TYPE (CLAY / LOAM / SAND) (FILL IN)
1	LOW	1	1908 SF	2			
2	MED	2	244 SF	7			
3	TREES	3	203 LF	3			

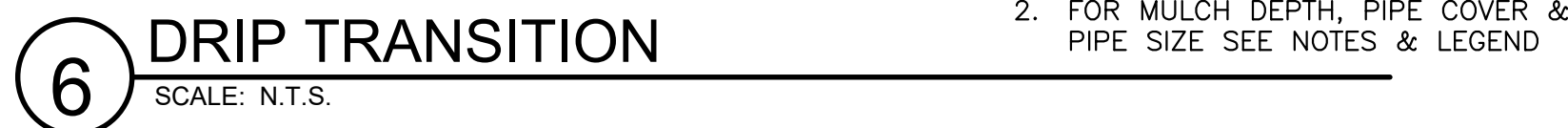
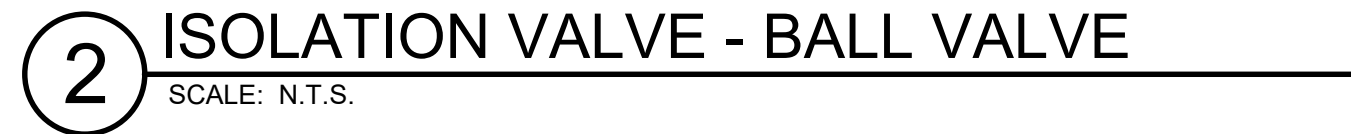
CLAY SOIL: DO NOT EXCEED 1100 SF / 3 GPM PER SUBZONE. IF TOTAL AREA OF ZONE EXCEEDS 2200 SF, ADD A VALVE.  
LOAM SOIL: DO NOT EXCEED 1100 SF / 3 GPM PER SUBZONE. IF TOTAL AREA OF ZONE EXCEEDS 2200 SF, ADD A VALVE.  
SANDY SOIL: DO NOT EXCEED 500 SF / 3 GPM PER SUBZONE. IF TOTAL AREA OF ZONE EXCEEDS 1000 SF, ADD A VALVE.  
TREE EMITTER TUBING 0.6 GPH PER LEGEND: MIN 20 LF PER VALVE; MAX 200 LF PER SUBZONE; MAX 400 LF PER VALVE FOR EMITTER FLOW, EMITTER SPACING & ROW SPACING PER SOIL TYPE SEE LEGEND

SHEET  
OF



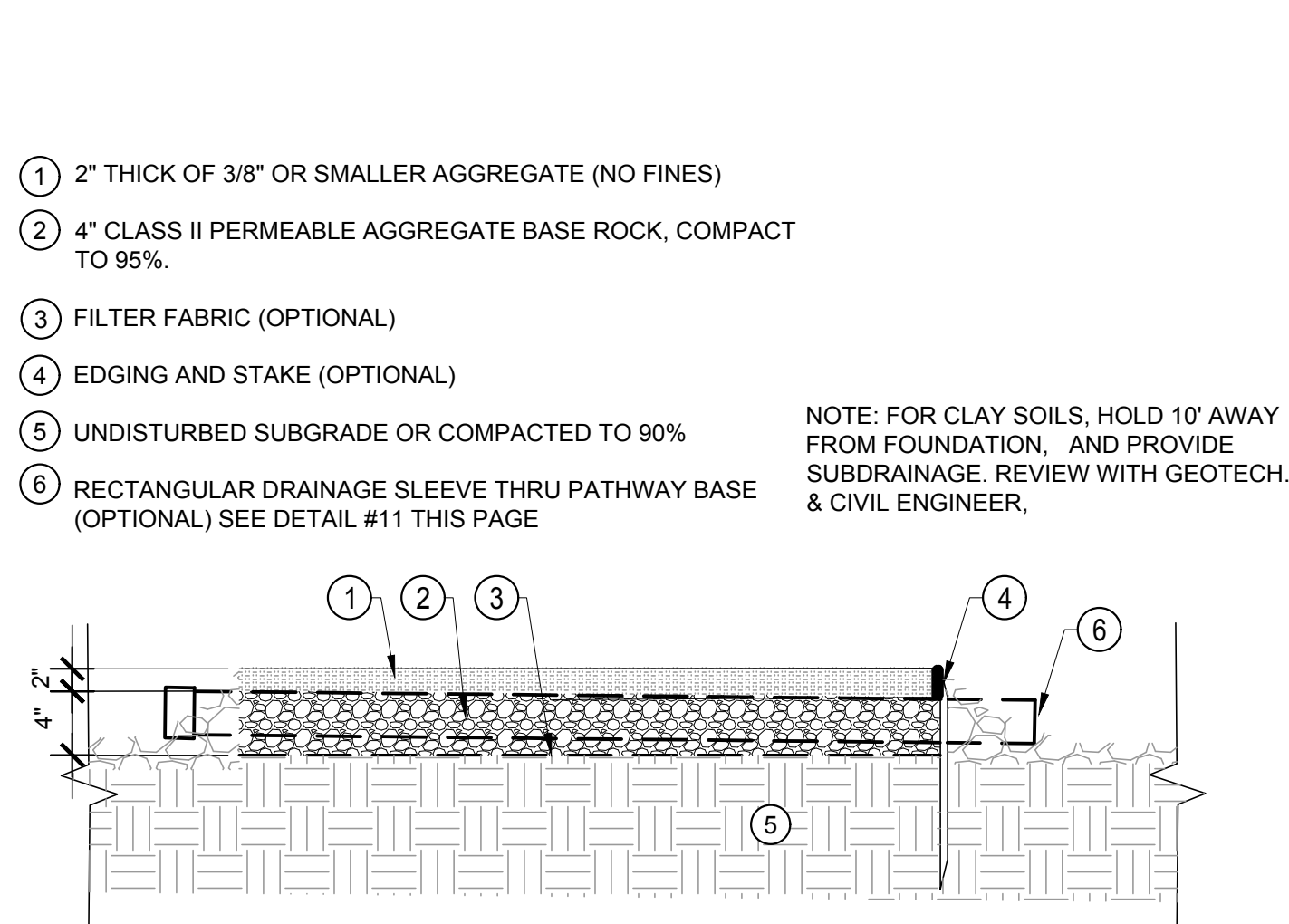


FOR IRRIGATION VALVE TABLE SEE IRRIGATION PLAN SHEET L2.0

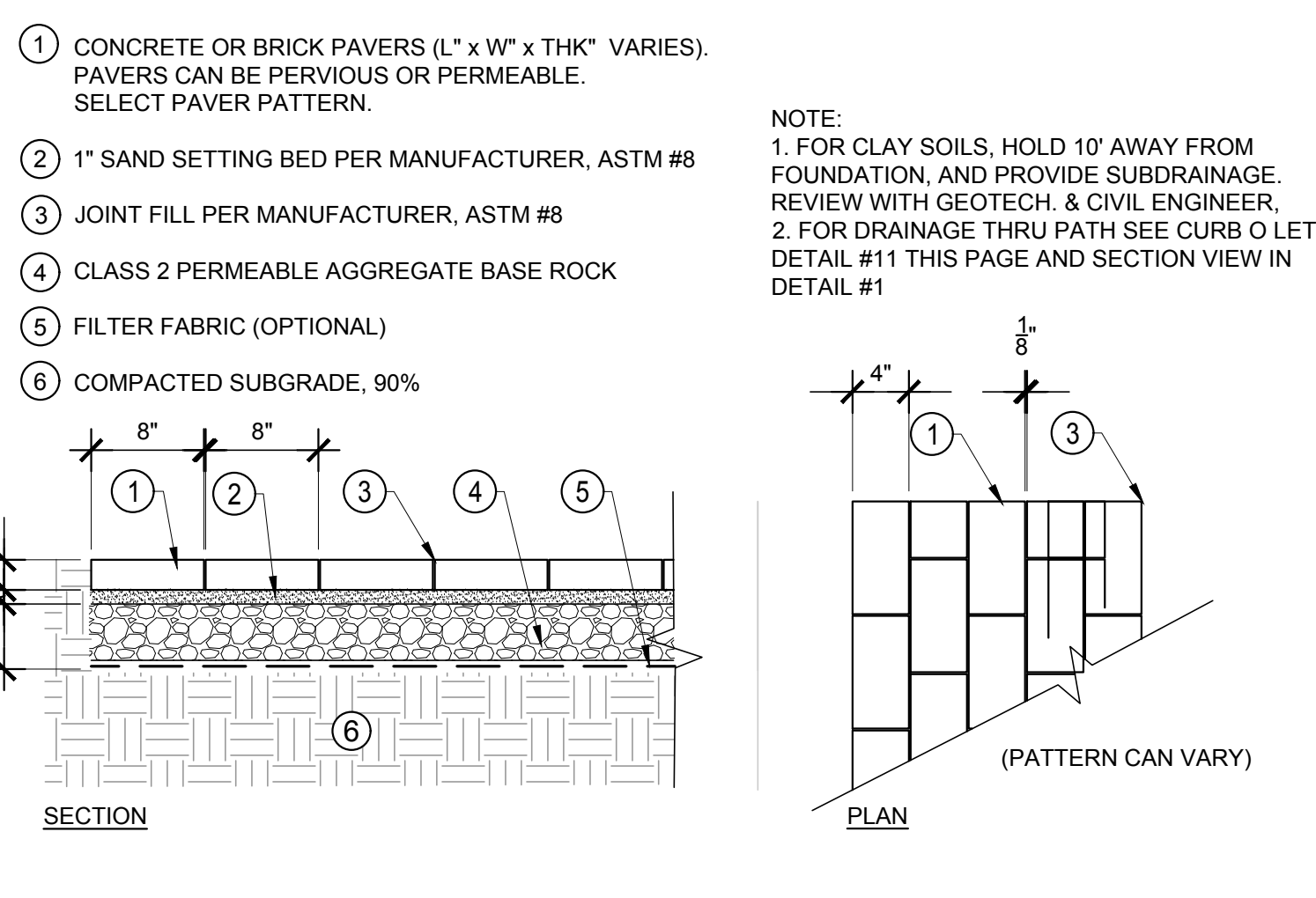


1. INSTALLATION TO BE BY CONTRACTOR WITH A VALID CURRENT CALIFORNIA C-27 LICENSE OR BY HOMEOWNER WITH RELEVANT KNOWLEDGE, SKILLS & EXPERIENCE.
2. THE IRRIGATION PLAN IS DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE COMPLETED. IRRIGATION EQUIPMENT OR PIPING MAY BE SHOWN IN PAVED AREAS FOR GRAPHIC CLARITY. OBTAIN APPROVAL OF LAYOUT FROM OWNER'S REPRESENTATIVE PRIOR TO FINAL INSTALLATION.
3. VERIFY LOCATION OF SUBSURFACE UTILITIES, PIPES AND STRUCTURES. NOTIFY THE OWNER'S REPRESENTATIVE SHOULD UTILITIES OR OTHER WORK NOT SHOWN ON THE PLANS BE FOUND DURING EXCAVATIONS.
4. CAREFULLY INVESTIGATE EXISTING FIELD CONDITIONS AND NOTIFY OWNER'S REPRESENTATIVE OF ANY POTENTIAL CONFLICT WITH DESIGN.
5. CONFIRM ADEQUATE GPM AT POINT OF CONNECTION PRIOR TO START OF WORK.
6. CONFIRM MINIMUM STATIC PRESSURE AT THE POINT OF CONNECTION PRIOR TO START OF WORK.
7. NOTIFY OWNER'S REPRESENTATIVE IF STATIC PRESSURE IS LOWER THAN REQUIRED. IF STATIC PRESSURE IS HIGHER THAN 75 PSI, INSTALL A WILKINS #600 PRESSURE REGULATOR DOWNSTREAM OF BACKFLOW PREVENTER. ADJUST OUTLET PRESSURE TO 55 PSI.
8. MAKE IRRIGATION POINT OF CONNECTION AS INDICATED ON PLAN AND COORDINATE WITH OTHER WORK AS REQUIRED. EXACT LOCATION OF TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
9. INSTALL IRRIGATION CONTROLLER IN LOCATION APPROVED BY OWNER'S REPRESENTATIVE. ENSURE 120 VOLT A.C. ELECTRICAL SUPPLY IS PROVIDED FOR IN IMMEDIATE VICINITY. INSTALL AS DETAILED AND PER MANUFACTURER'S INSTRUCTIONS. GROUND CONTROLLER AND CONFORM TO LOCAL CODES.
10. MOUNT WEATHER SENSOR ON EXTERIOR WALL OR GUTTER WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL. INSTALL PER MANUFACTURERS 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 LIDS FOR EACH BOX.
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 JACKET OF COLOR OTHER THAN WHITE FOR CONTROL WIRE. TAPE AND BUNDLE WIRING AT 10 FOOT INTERVALS.
23. CHECK VALVES: INSTALL CHECK VALVES ON LATERAL LINES AS REQUIRED TO PREVENT LOW HEAD DRAINAGE. ENSURE THAT IN-LINE DRIP TUBING HAS CHECK VALVES EMBEDDED INTO EMITTERS.
24. ENSURE THAT ALL EQUIPMENT IS SIZED CORRECTLY BASED ON EXISTING SITE CONDITIONS AND HYDRAULICS.
25. VERIFY SOIL TYPE AND USE APPROPRIATE EMITTER SIZE AND SPACING.
26. INSTALL DRIP TUBING AS SHOWN IN DETAIL AND PER MANUFACTURER'S SPECIFICATIONS.
27. DO NOT USE SMALL DIAMETER DISTRIBUTION TUBING.
28. DO NOT INSTALL POST MANUFACTURED BUTTON EMITTERS INTO IN-LINE TUBING.
29. REVIEW DRIP LAYOUT WITH OWNER'S REPRESENTATIVE PRIOR TO COVERING WITH MULCH
30. STAKE DRIP TUBING IN PLACE @ 2 FT O.C. MAX
31. MAINTAIN A 3" MIN. DEPTH OF MULCH COVER OVER DRIP TUBING.
32. MAXIMUM LENGTH OF DRIP TUBING IS 200' IN ANY DIRECTION FROM WATER SOURCE.
33. OPEN LINE ENDS AND FLUSH THOROUGHLY BEFORE INSTALLATION OF END FLUSH CAPS.
34. FLUSH MAINLINES AFTER INSTALLING RISERS AND PRIOR TO INSTALLING OR RECONNECTING TO VALVES.
35. FLUSH LATERALS AFTER INSTALLING RISERS AND PRIOR TO INSTALLING TUBING
36. PRESSURE TEST PRIOR TO BACKFILLING, PROVIDE RESULTS TO OWNER'S REP.
37. FILL ALL EXCAVATIONS WITH COMPACTED BACKFILL, IN TWO MECHANICALLY COMPACTED LIFTS. REPAIR ALL SETTLED TRENCHES.
38. PERFORM COVERAGE TEST. ADJUST SYSTEM AS NEEDED TO PROVIDE FULL COVERAGE AND TO AVOID RUNOFF.
39. AFTER COMPLETION PROVIDE AS-BUILT PLANS.
40. PROVIDE CONTROLLER SCHEDULE.
41. SCHEDULE THE TREE ZONE TO RUN AT A LOW FREQUENCY AND LONG DURATION TO PROVIDE DEEP WATERING FOR THE TREES. ADJUST SCHEDULE PER WEATHER AND SEASON.
42. SCHEDULE THE SHRUB ZONES TO RUN AT A HIGH FREQUENCY AND SHORT 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 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.

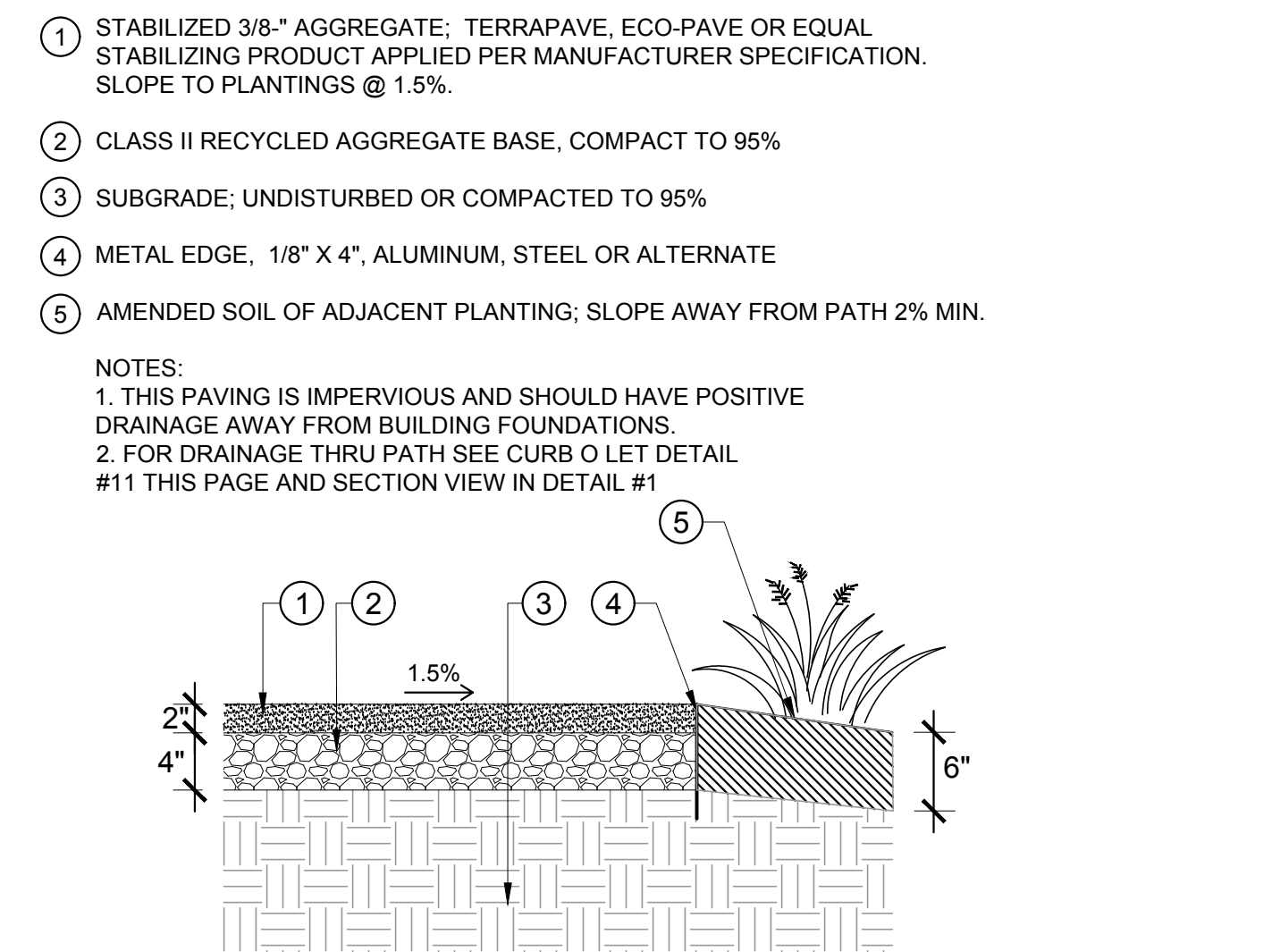




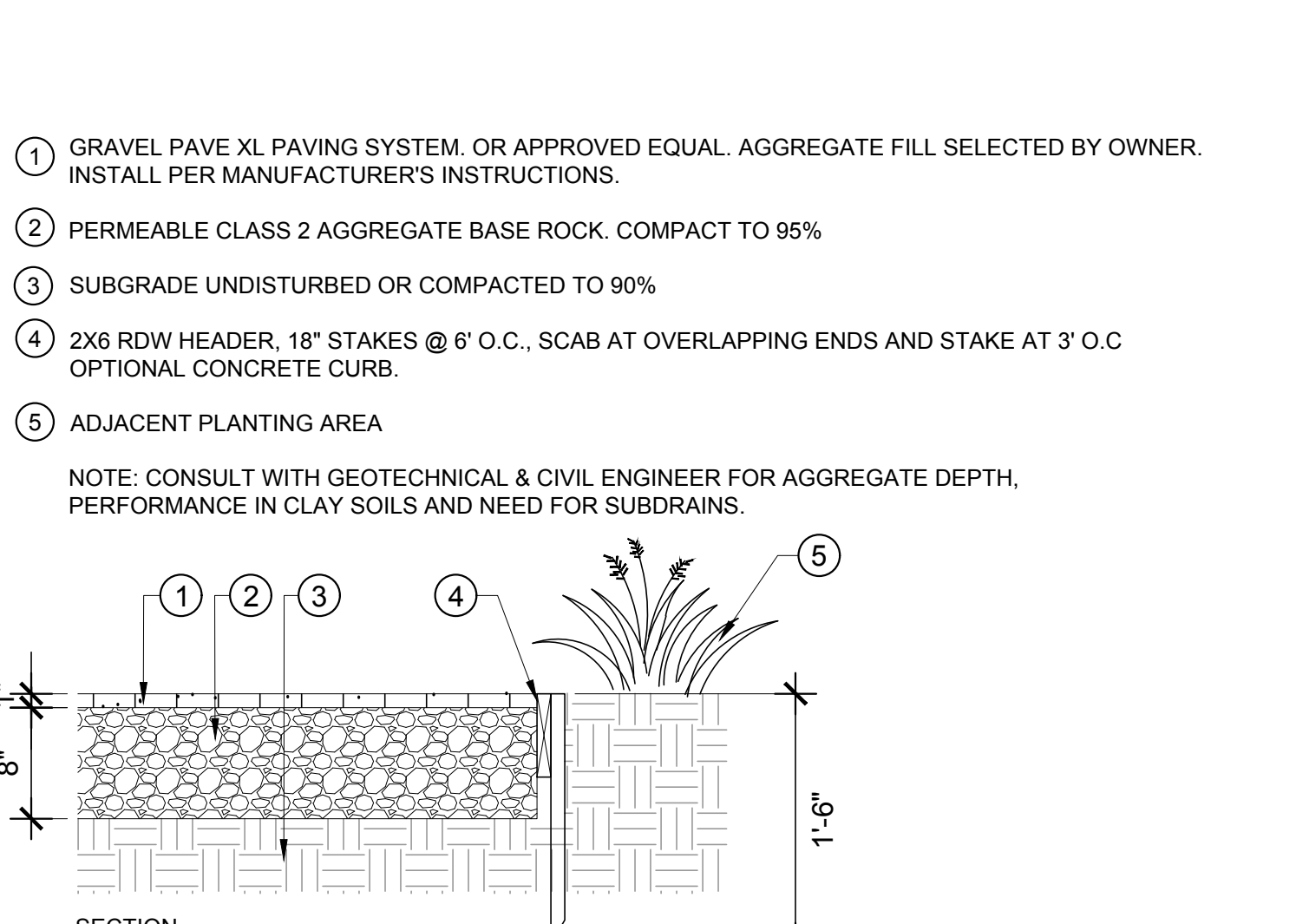
**1 PERMEABLE AGGREGATE PAVING - PATH OR PATIO**  
SCALE: 1"=1'-0"



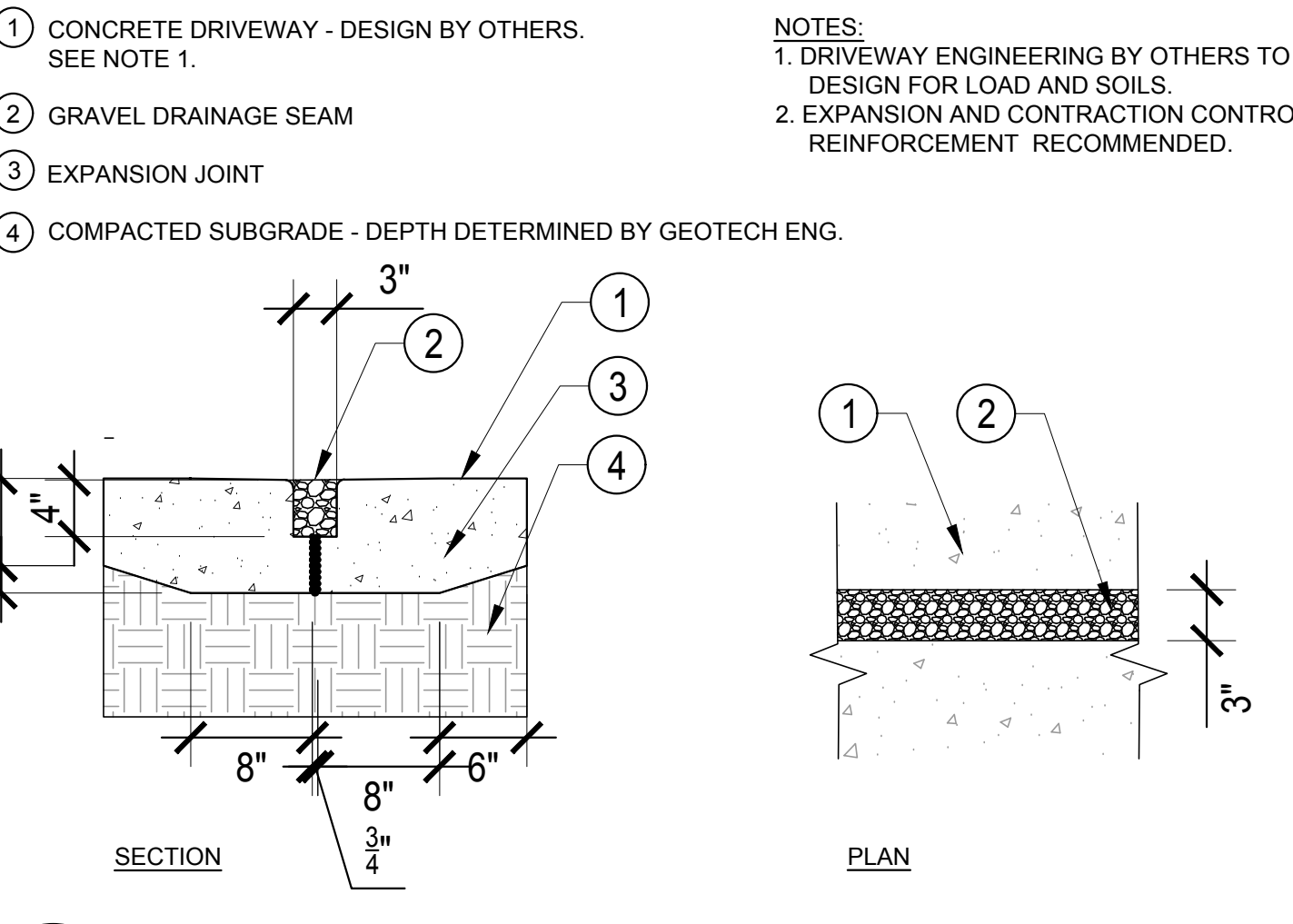
**2 PERMEABLE PAVERS - PATH OR PATIO**  
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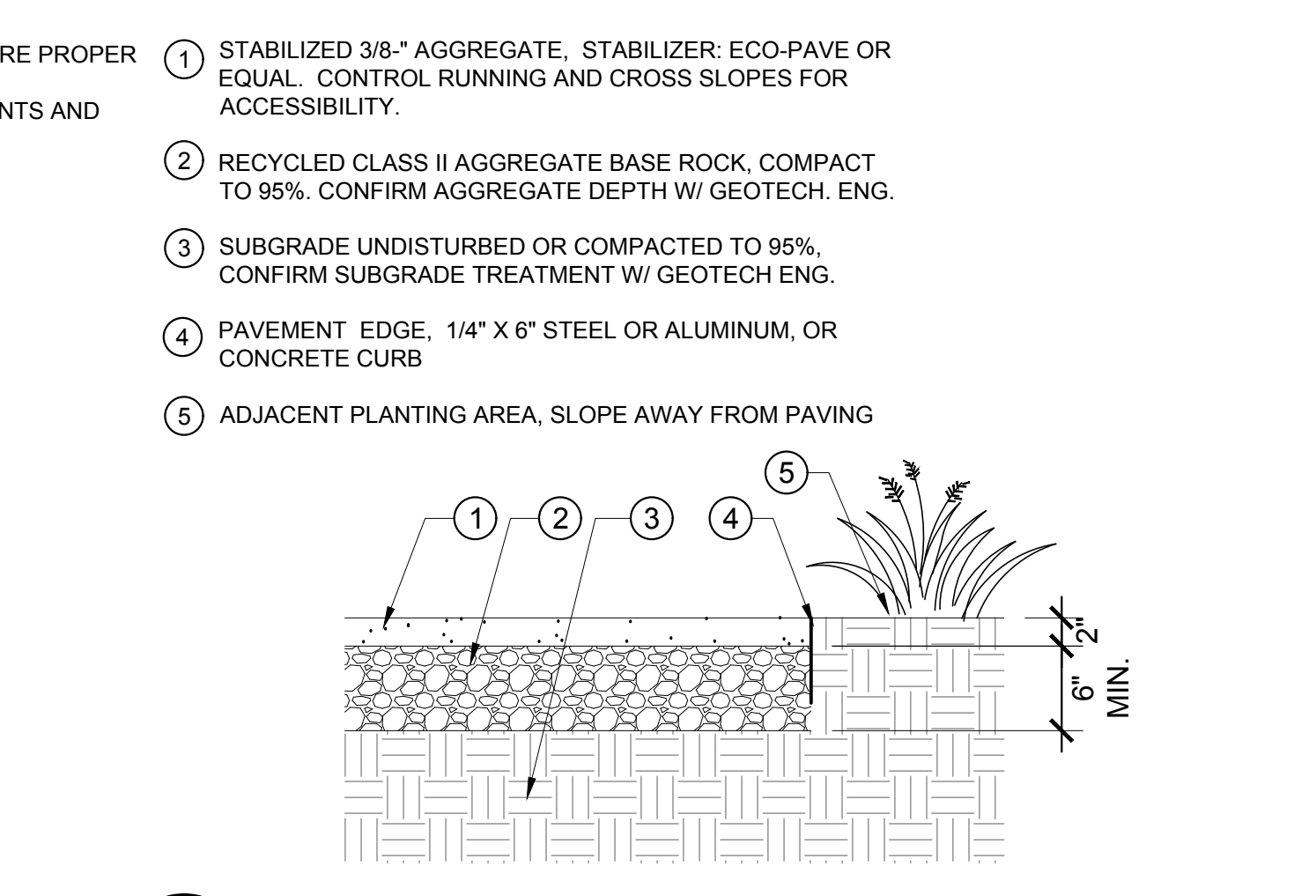
**3 PERMEABLE INFILTRATION - PEDESTRIAN**  
SCALE: 1"=1'-0"



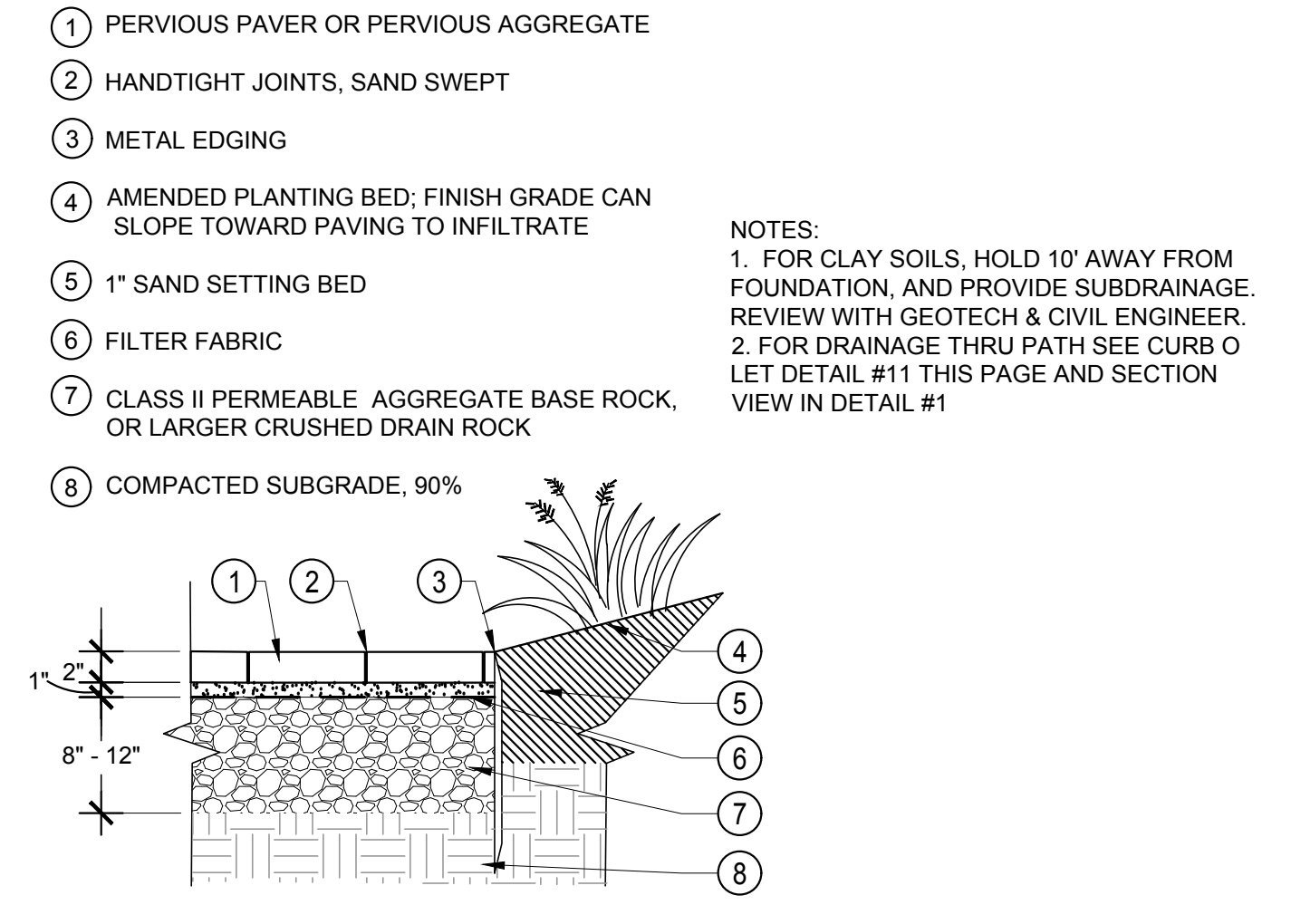
**4 AGGREGATE PAVING - PEDESTRIAN**  
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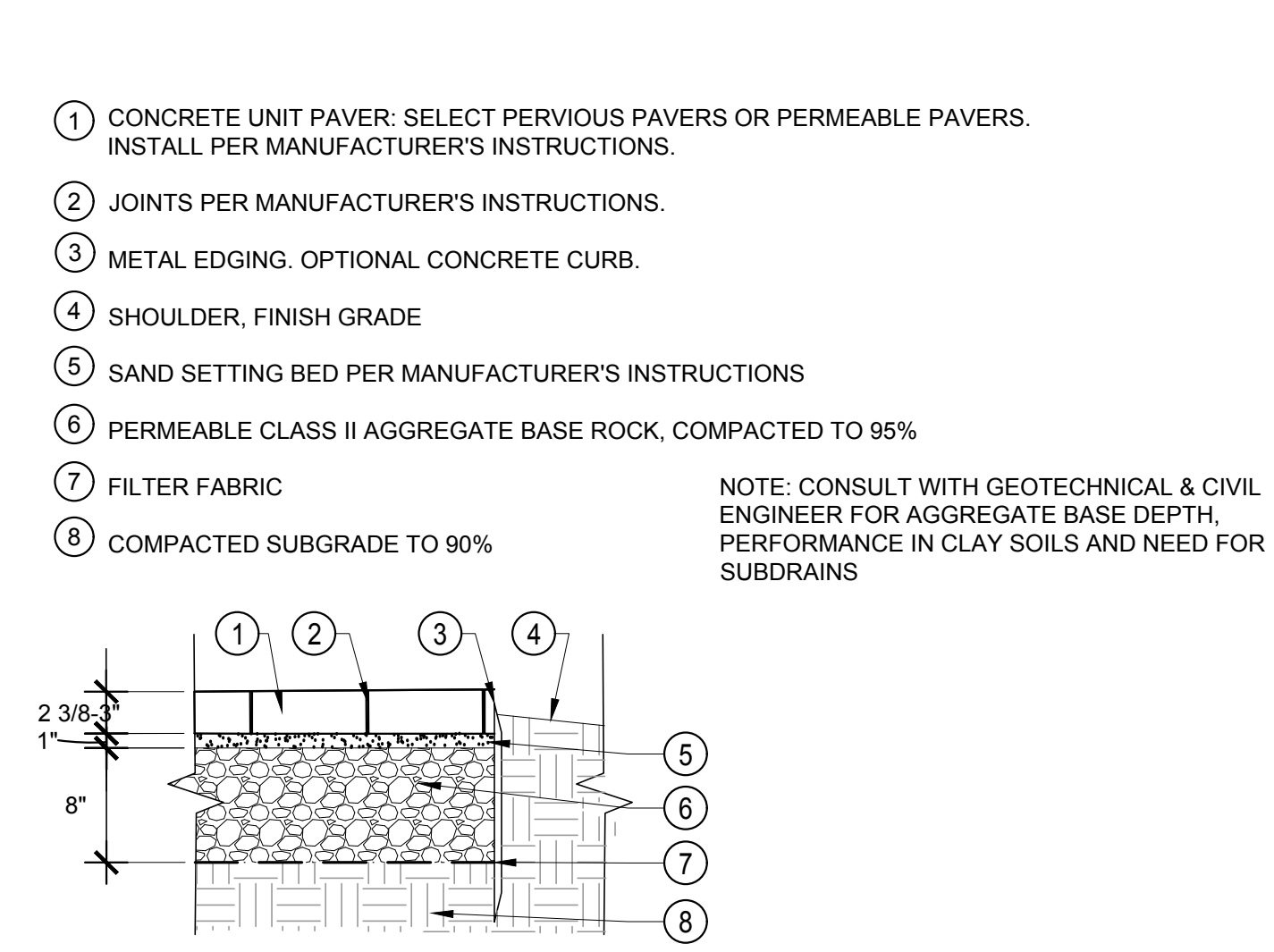
**5 STABILIZED AGGREGATE - PATH OR PATIO**  
SCALE: 1"=1'-0"



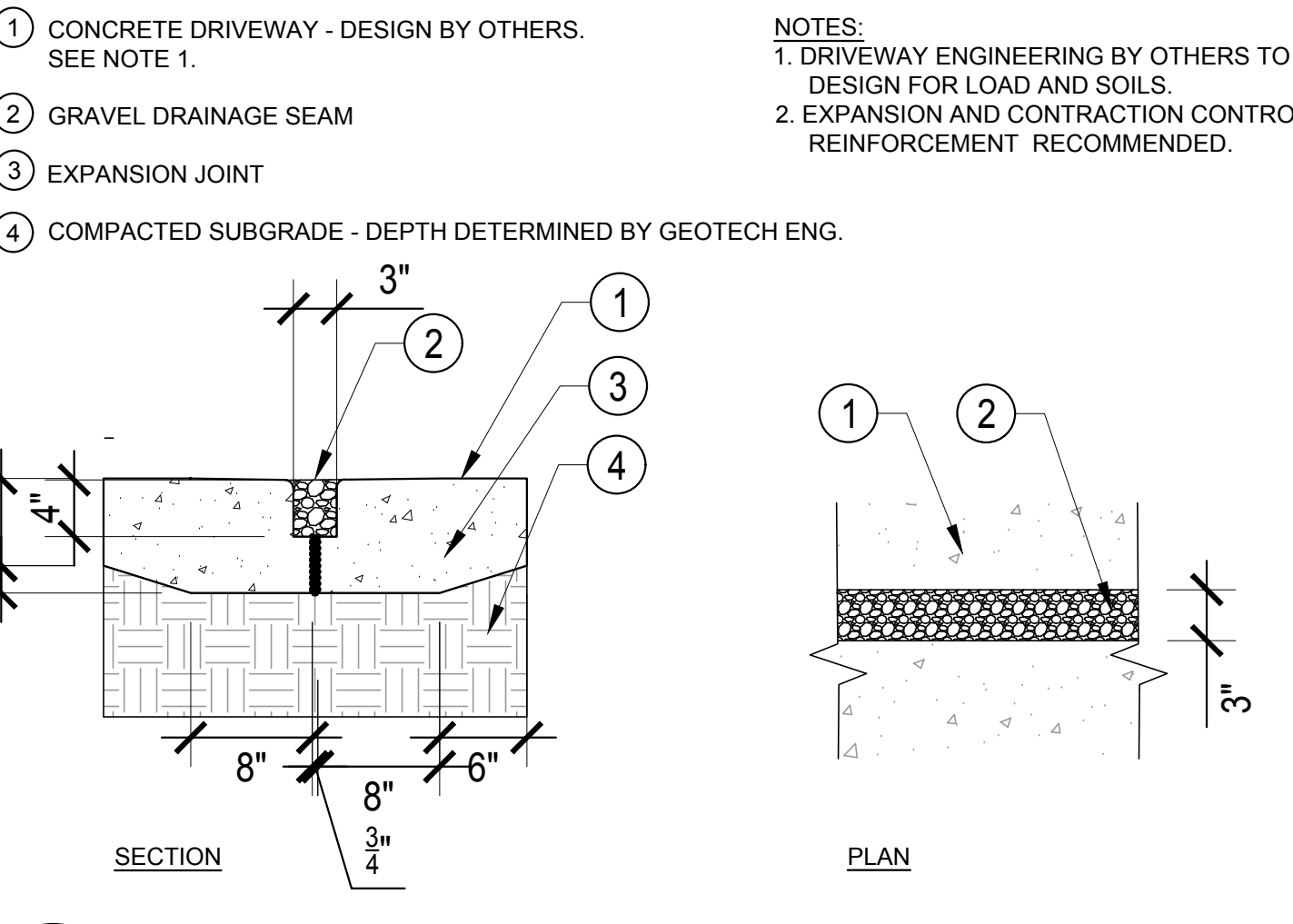
**6 GRAVELPAVE PAVING - VEHICLE**  
SCALE: 1"=1'-0"



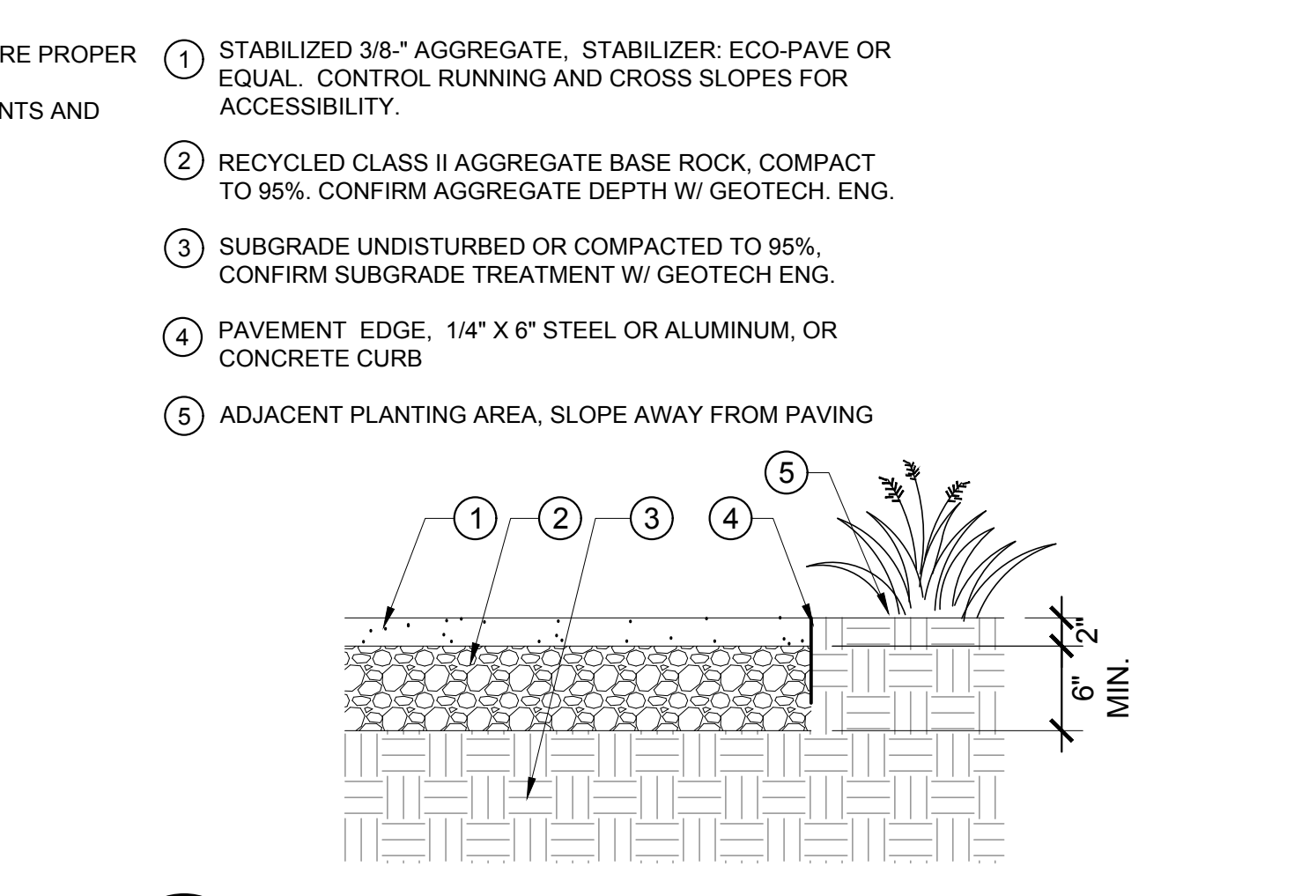
**7 PERVIOUS OR PERMEABLE UNIT PAVER - VEHICLE**  
SCALE: 1"=1'-0"



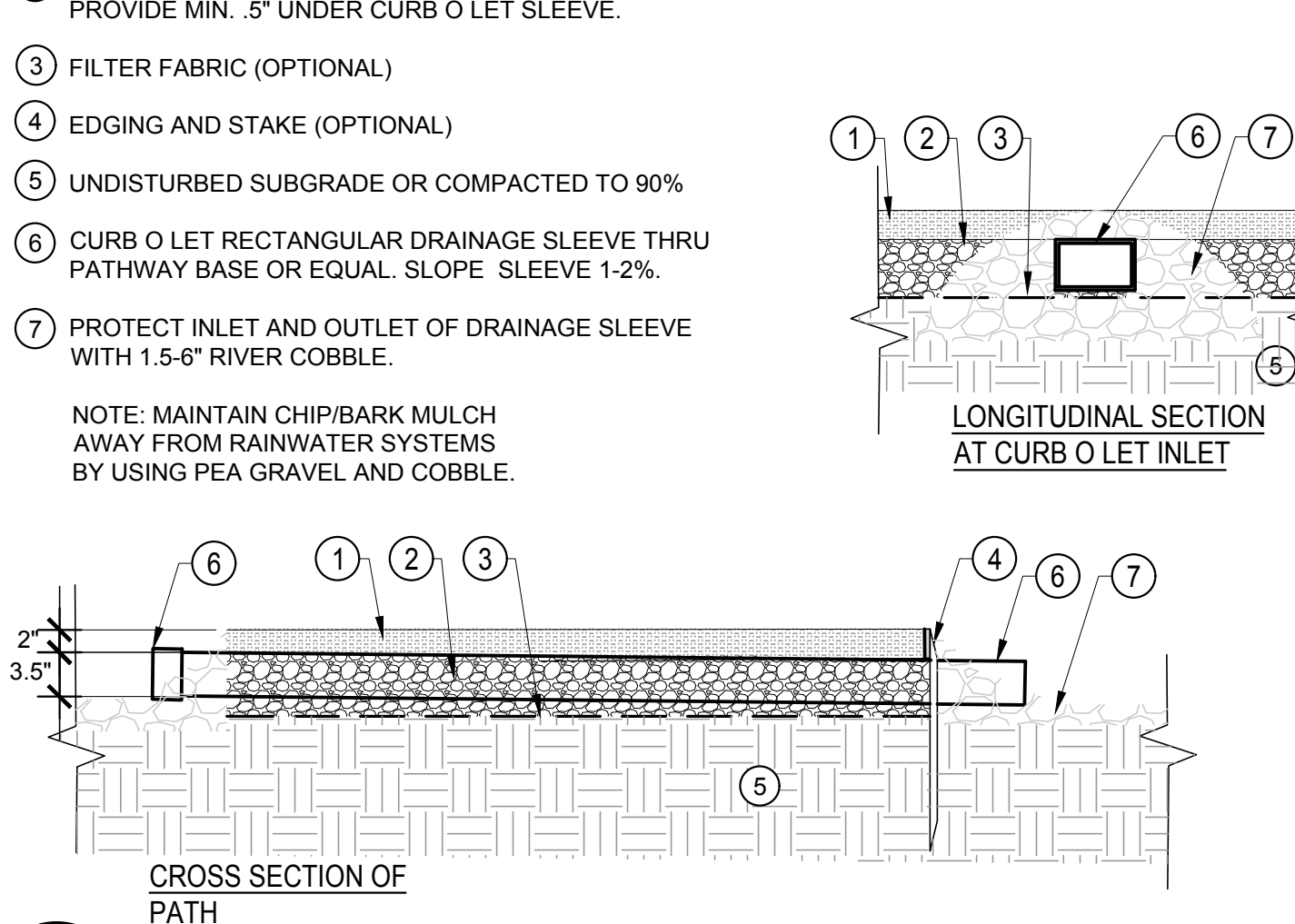
**8 CONCRETE - VEHICLE - TRENCH DRAIN**  
SCALE: 1"=1'-0"



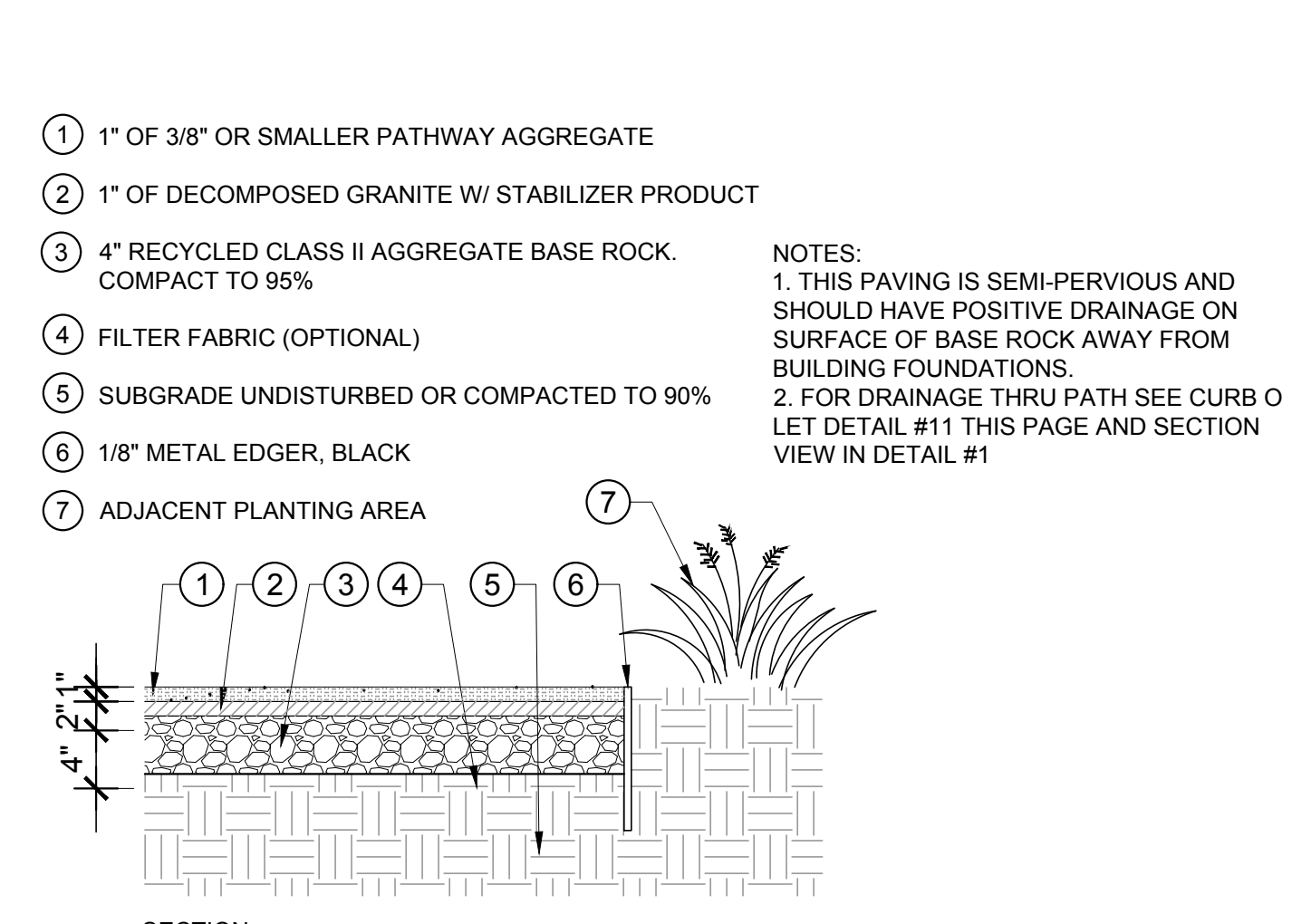
**9 CONCRETE - VEHICLE - GRAVEL DRAINAGE SEAMS**  
SCALE: 1"=1'-0"



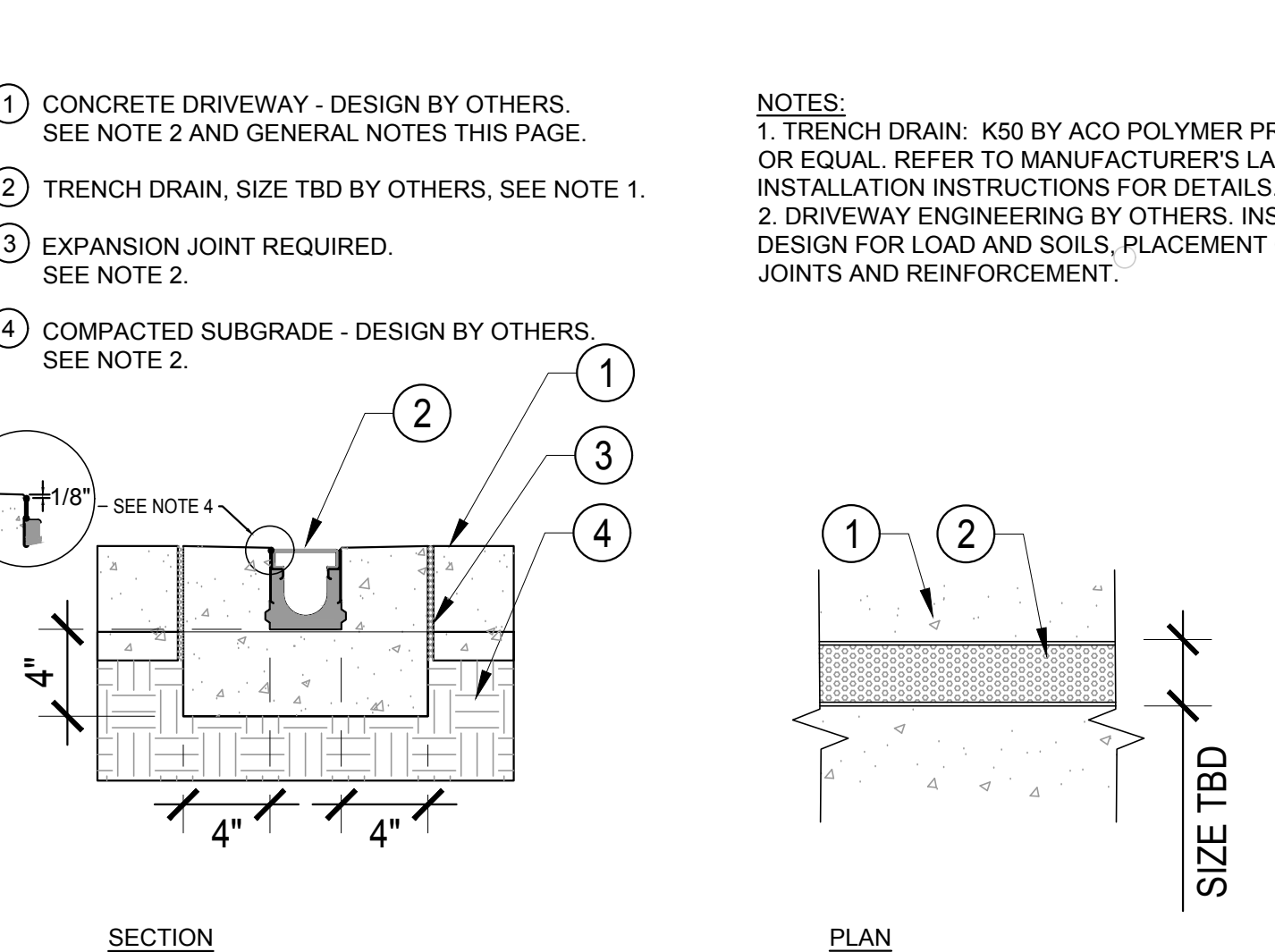
**10 STABILIZED AGGREGATE - VEHICLE**  
SCALE: 1"=1'-0"



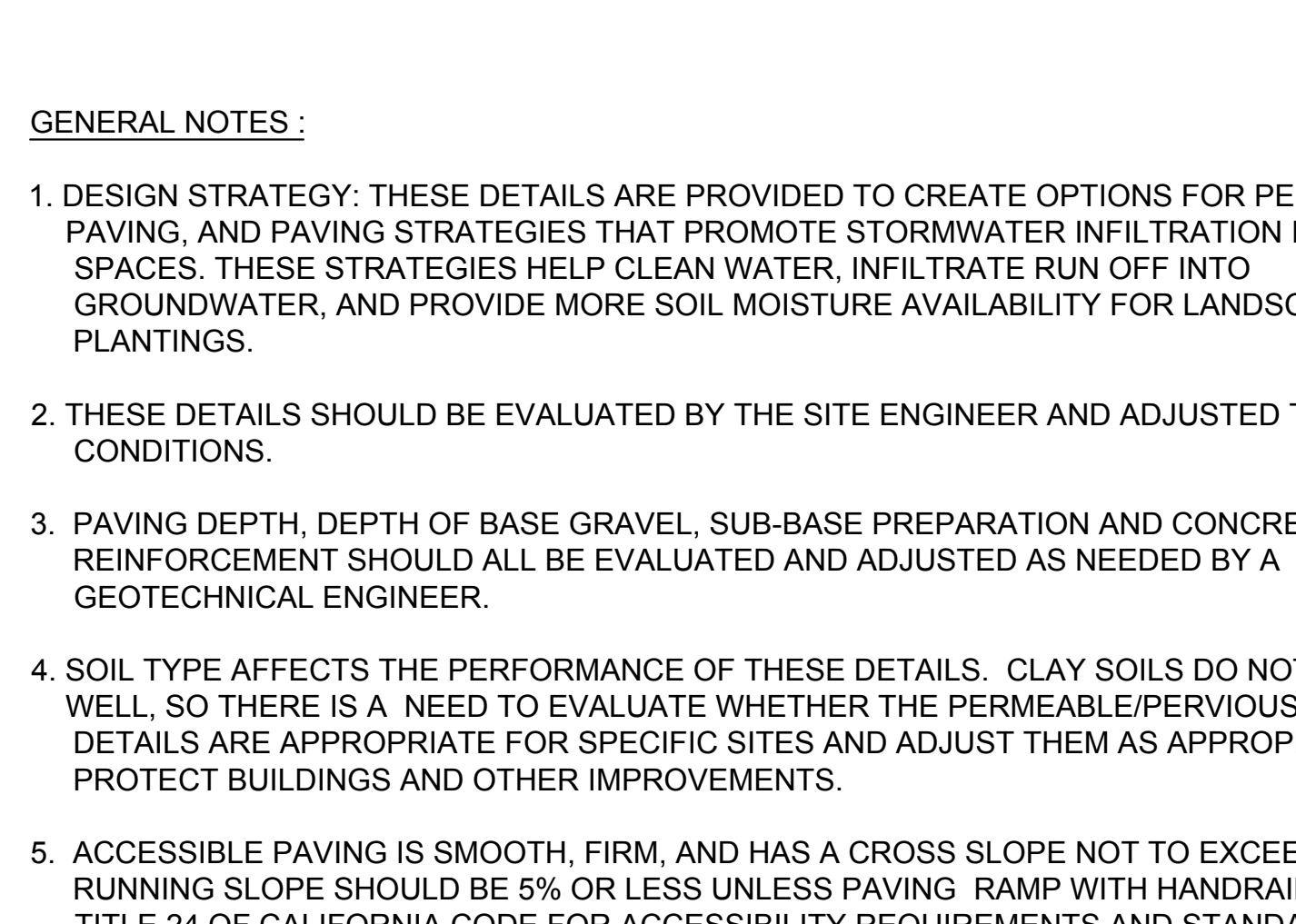
**11 RECTANGULAR DRAINAGE SLEEVE IN PATHS**  
SCALE: NOT TO SCALE



**12 CONCRETE - VEHICLE - TRENCH DRAIN**  
SCALE: 1"=1'-0"



**13 CONCRETE - VEHICLE - TRENCH DRAIN**  
SCALE: 1"=1'-0"



**14 CONCRETE - VEHICLE - TRENCH DRAIN**  
SCALE: 1"=1'-0"

BY USING THESE PLANS, I AGREE TO RELEASE, INDEMNIFY AND HOLD HARMLESS THE SONOMA-MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS (SONOMA COUNTY WATER AGENCY, CITY OF SANTA ROSA, MARIN MUNICIPAL WATER DISTRICT, NORTON WATER DISTRICT, CITY OF SONOMAR, CITY OF PETALUMA, CITY OF TIBURON, CITY OF SAN ANTONIO, CITY OF SAN JUAN, CITY OF SAN RAFAEL, CITY OF SHERWOOD, 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, UNDERSTANDING THAT IT IS MY RESPONSIBILITY AS THE PROJECT OWNER TO ENSURE THAT ALL ELEMENTS ARE IMPLEMENTED SAFELY AND ACCORDING TO APPLICABLE STATUTES, RULES, REGULATIONS, ORDINANCES AND/OR CODES.

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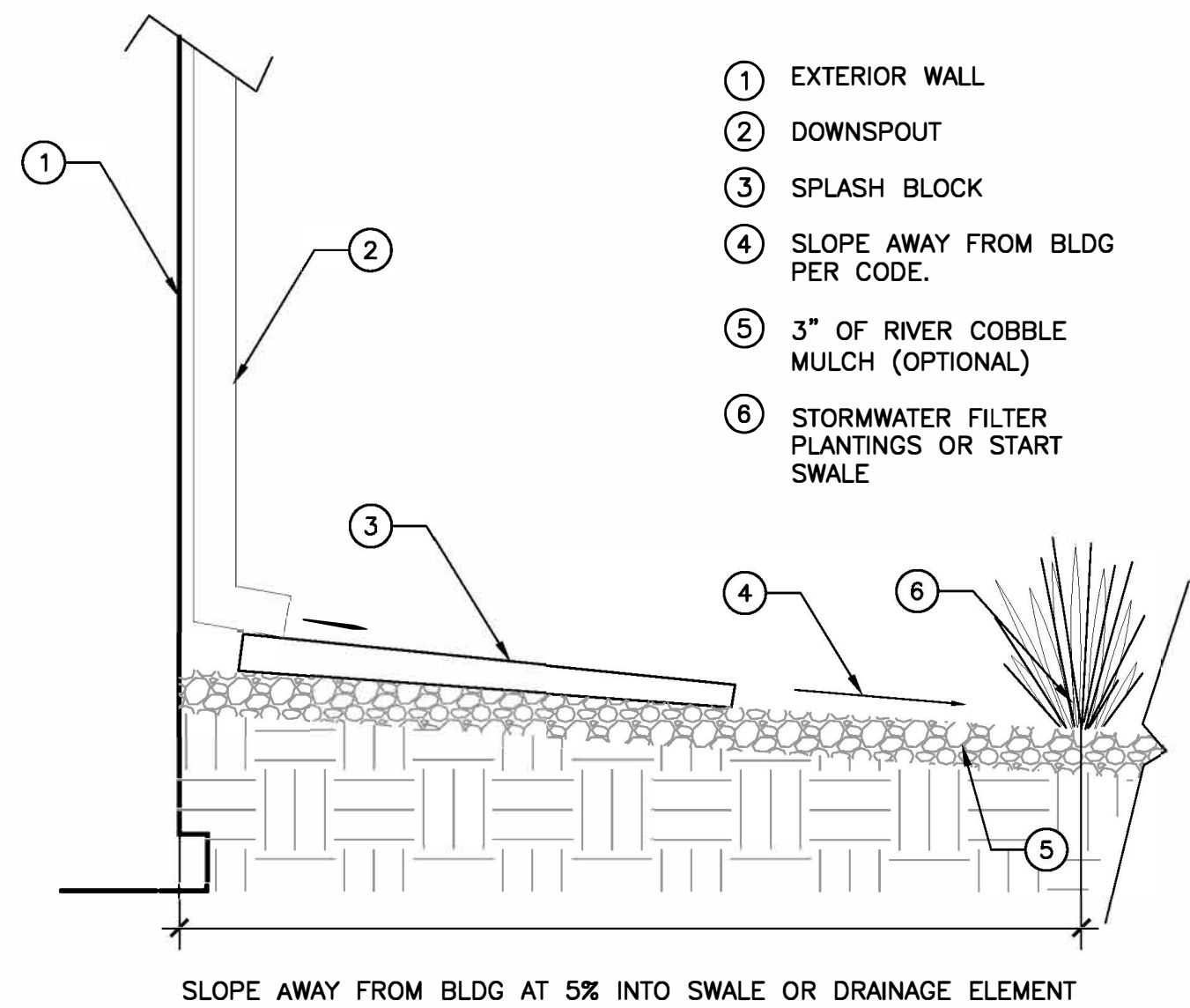
**SHEET TITLE:**  
L.I.D.  
PAVING  
DETAILS

**DATE**  
PERMIT PLAN  
MAY 18, 2018

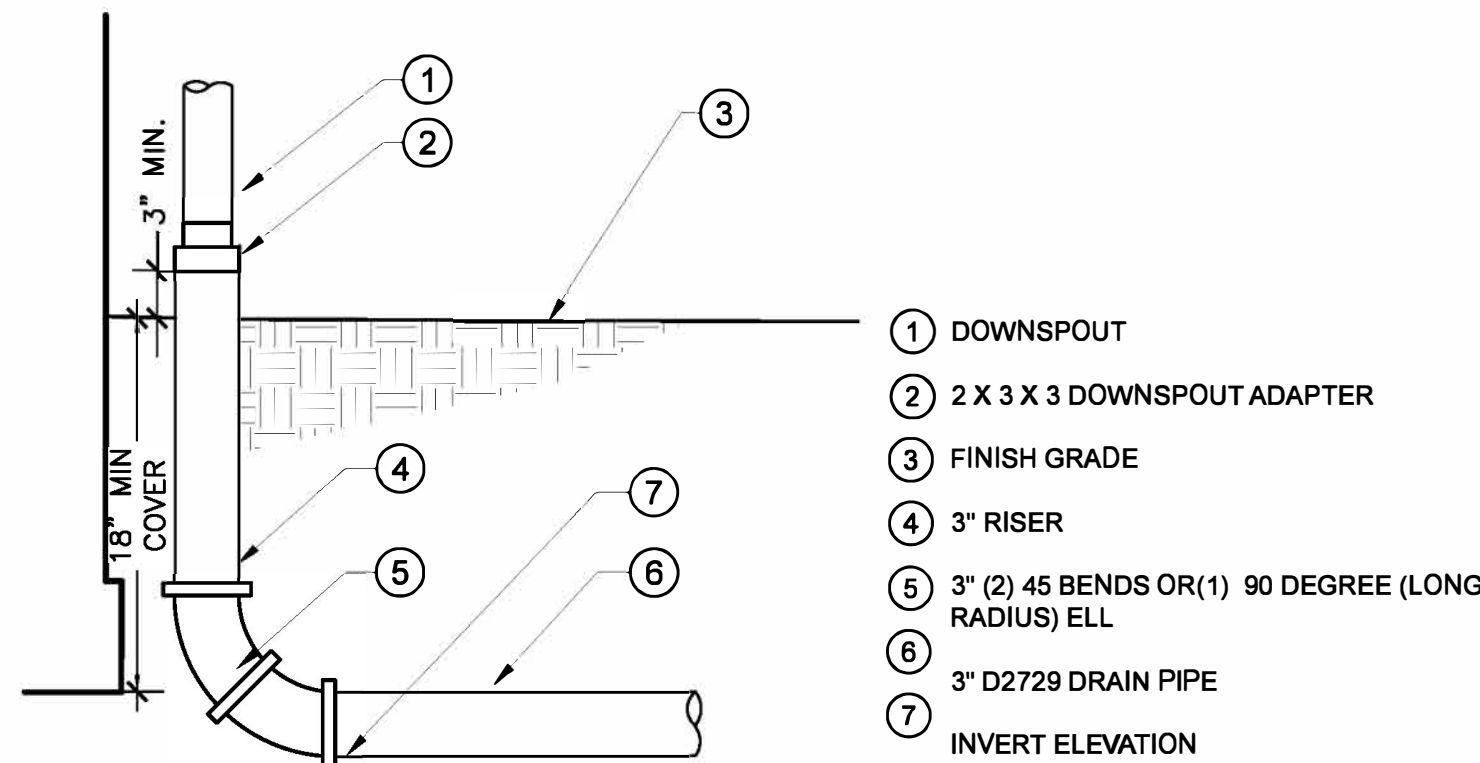
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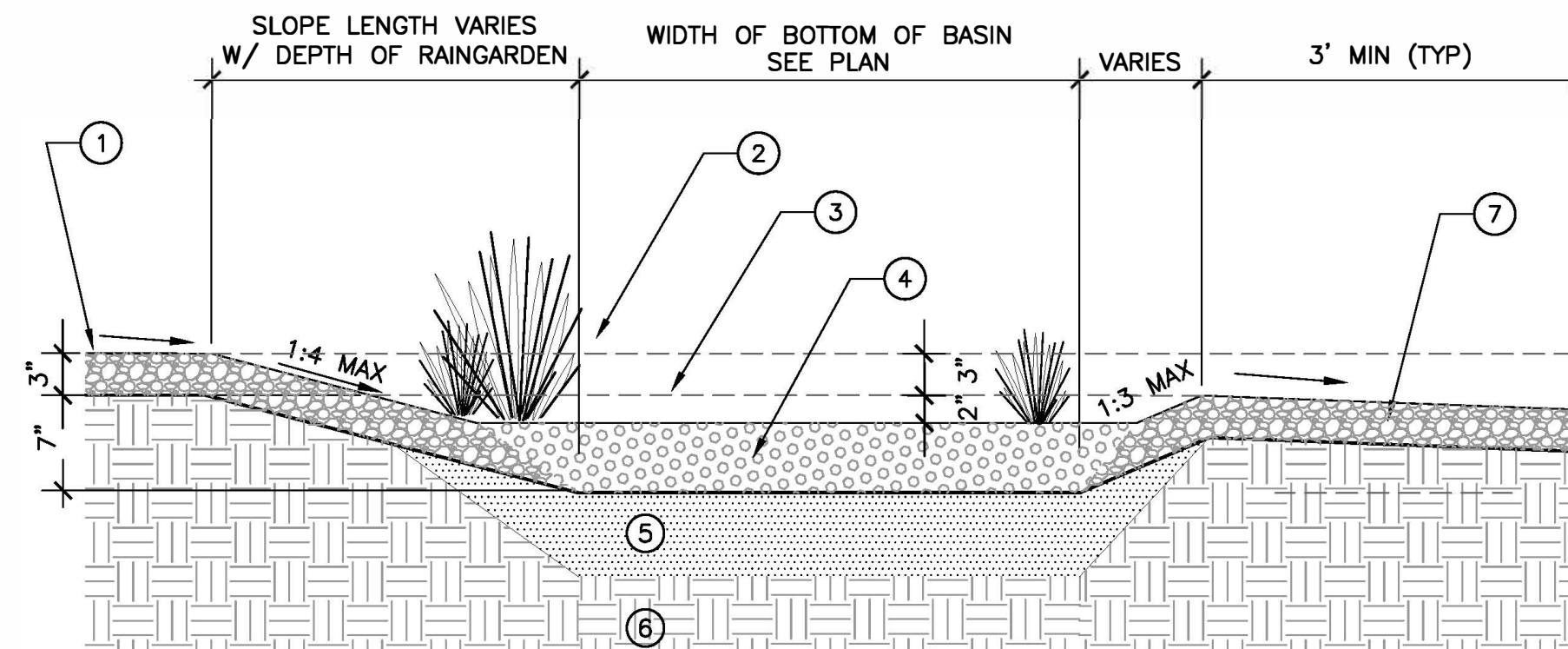




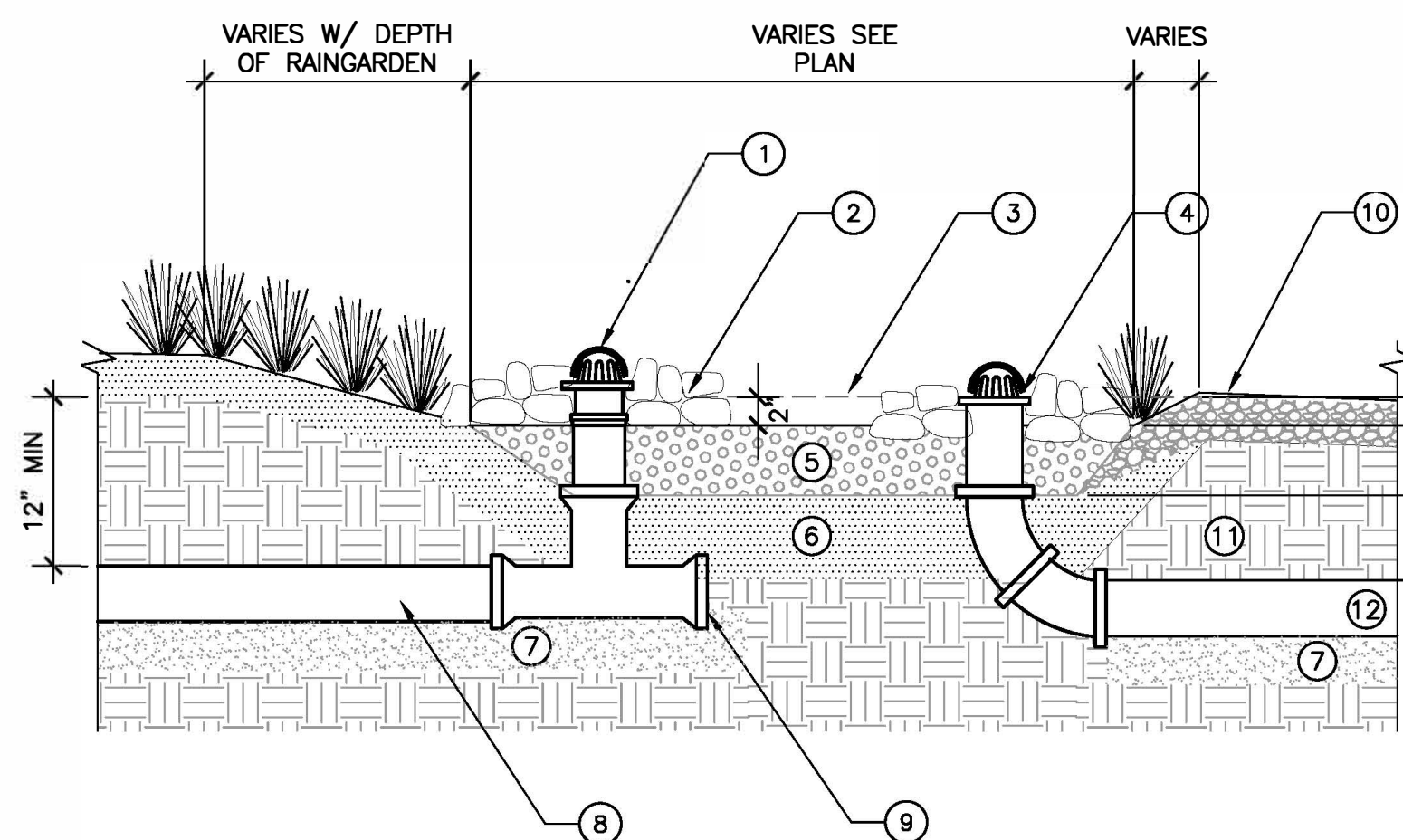
**1 DOWNSPOUT SPLASHBLOCK TO OVERLAND FLOW**  
SCALE: 1/2"=1'-0"



**2 DOWNSPOUT WITH PIPED OUTLET**  
SCALE: 1/2"=1'-0"

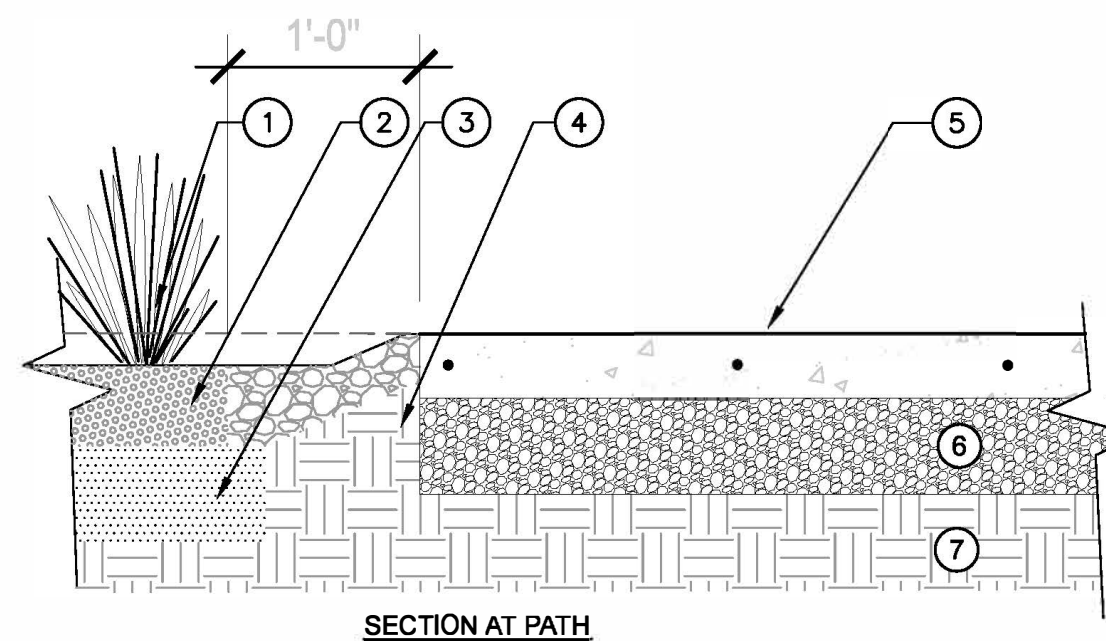


**3 VEGETATED RAINGARDEN W/ OVERLAND FLOW INLET & OUTLET**  
SCALE: 1/2"=1'-0"



**4 VEGETATED RAINGARDEN W/ PIPED INLET**  
SCALE: 1/2"=1'-0"

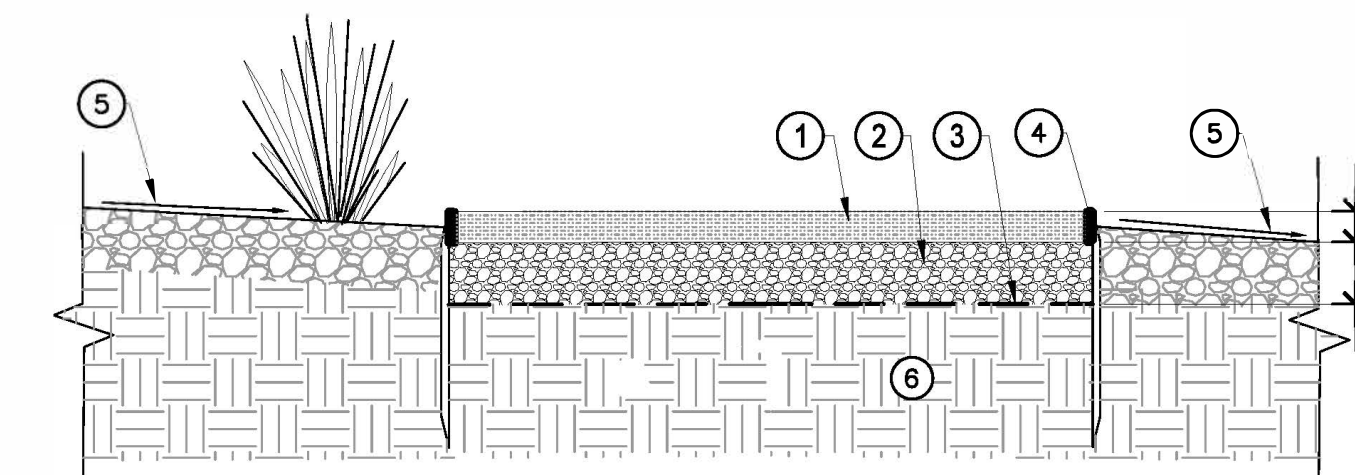
- 1 ATRIUM DRAIN GRATE ON OUTLET BUBBLER CONNECTED TO DOWNSPOUT; BY NDS OR EQUAL
  - 2 COBBLE AROUND OUTLET PIPE (TYP.)
  - 3 MAX WATER LEVEL 2" ABOVE PEA GRAVEL
  - 4 DRAIN INLET STRUCTURE AT TOP PONDING ELEVATION (2" ABOVE PEA GRAVEL). PIPE TO OUTLET.
  - 5 5" PEA GRAVEL MULCH INSURES NO PONDING WITHIN 72 HRS FOR MOSQUITO CONTROL.
  - 6 SCARIFY & AMEND NATIVE SOIL AT BOTTOM OF RAIN GARDEN
  - 7 6" SAND OR GRAVEL SETTING BED UNDER PIPE
  - 8 4" STORMDRAIN PIPE FROM ROOF DOWNSPOUT(S)
  - 9 END PLUG W/ (1) 3/4" WEEP HOLE 3/4" ABOVE PIPE INVERT, SET END OF PIPE IN 12"x12" GRAVEL TRENCH FOR DRAINAGE
  - 10 SECONDARY OVERFLOW SLIGHTLY HIGHER THAN PIPE INLET. COVER WITH 3" OF 1.5-6" RIVER COBBLE
  - 11 UNDISTURBED SUBGRADE
  - 12 OUTLET PIPE, OUTLET TO RAINWATER BASIN 6" MIN. DOWNSLOPE OR CONNECT TO EXISTING STORM DRAIN PIPE OR OUTLET AT CURB IF PRESENT.
- NOTES:  
1. RAINWATER GARDEN DESIGNED FOR CLAY SOILS. MAX DEPTH 7" OF WHICH 5" HAS A PEA GRAVEL MULCH.  
2. NO WOOD CHIP MULCH IN RAINWATER SYSTEMS TO AVOID CLOGGING STORM DRAINS. MAINTAIN GRAVEL MULCH THROUGHOUT SWALES AND RAINGARDENS TO SIDEWALK.



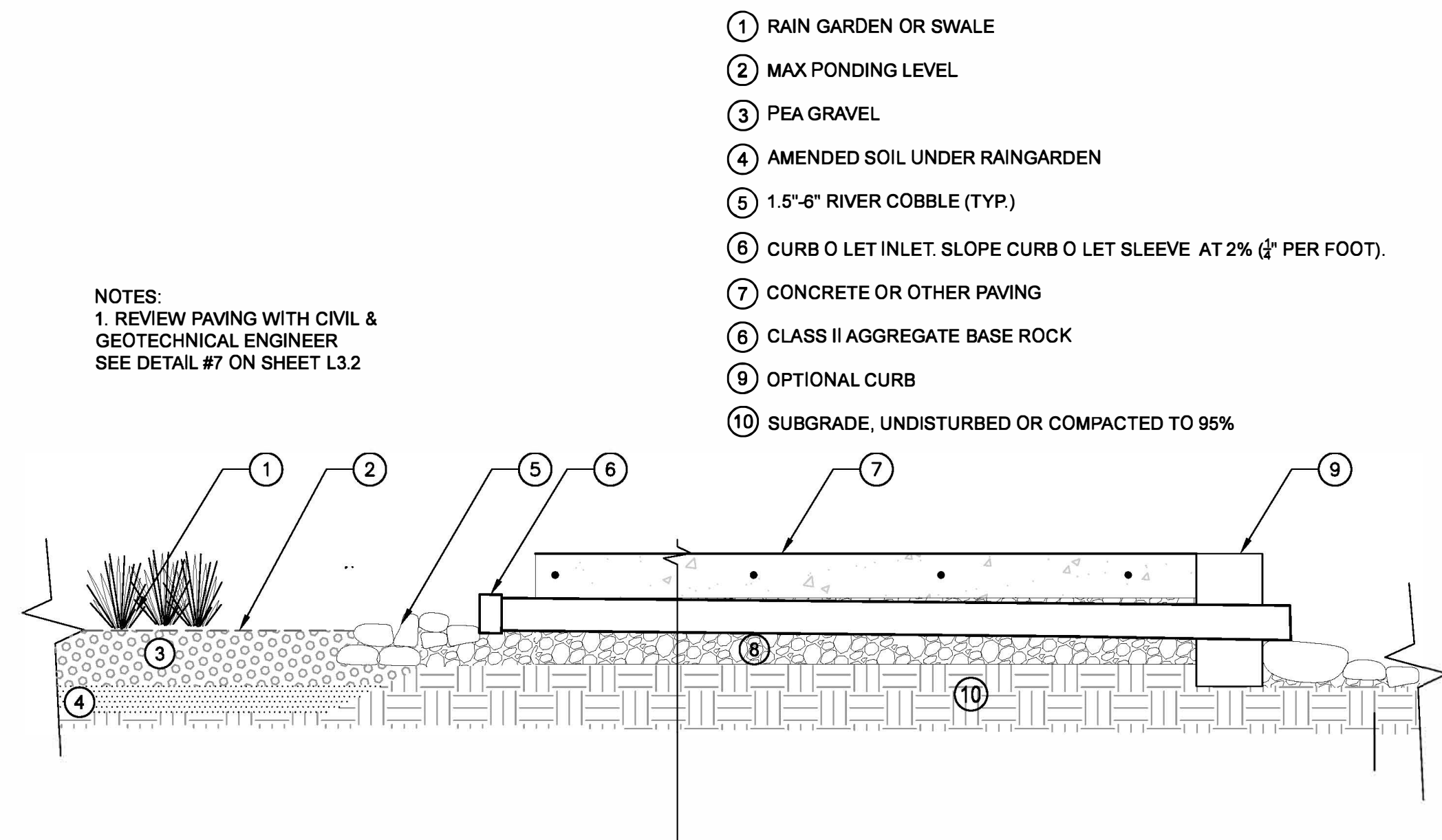
**5 RAINGARDEN OVERFLOWING OVER PAVEMENT SECTION**  
SCALE: 1/2"=1'-0"

- 1 PLANTING IN RAIN GARDEN.
  - 2 5" PEA GRAVEL MULCH INSURES NO PONDING WITHIN 72 HRS FOR MOSQUITO CONTROL. TOTAL DEPTH INCLUDING PONDING IS 7".
  - 3 RIVER COBBLE: 1.5-6" IN SIZE. FILL TO PAVEMENT EDGE
  - 4 SCARIFY & AMEND NATIVE SOIL AT BOTTOM OF RAIN GARDEN.
  - 5 CONCRETE OR OTHER IMPERVIOUS WALKWAY
  - 6 CLASS II RECYCLED AGGREGATE BASE ROCK
  - 7 UNDISTURBED SUBGRADE.
- NOTES:  
1. ENSURE NO MULCH OR SOIL WASHES ON TO PATH. USE RIVER COBBLE TO MAINTAIN CLEAN EDGE.  
2. NO MULCH IN RAINWATER SYSTEMS TO AVOID CLOGGING STORM DRAINS.

- 1 PERMEABLE AGGREGATE PAVING: 2" THICK OF 3/8" OR SMALLER AGGREGATE (NO FINES)
  - 2 4" CLASS II PERMEABLE AGGREGATE BASE ROCK. COMPACT TO 95%.
  - 3 FILTER FABRIC
  - 4 EDGING AND STAKE (OPTIONAL)
  - 5 RAINWATER FLOWING WITHIN 4" OF 1.5-6" RIVER COBBLE FROM DOWNPOUT OR RAINGARDEN
  - 6 NATIVE SOIL; SCARIFY TOP 3" TO IMPROVE INFILTRATION UNDER COBBLE
- NOTE:  
1. REVIEW DETAIL WITH GEOTECH. & CIVIL ENGINEER  
2. SITE 10' AWAY FROM FOUNDATION.

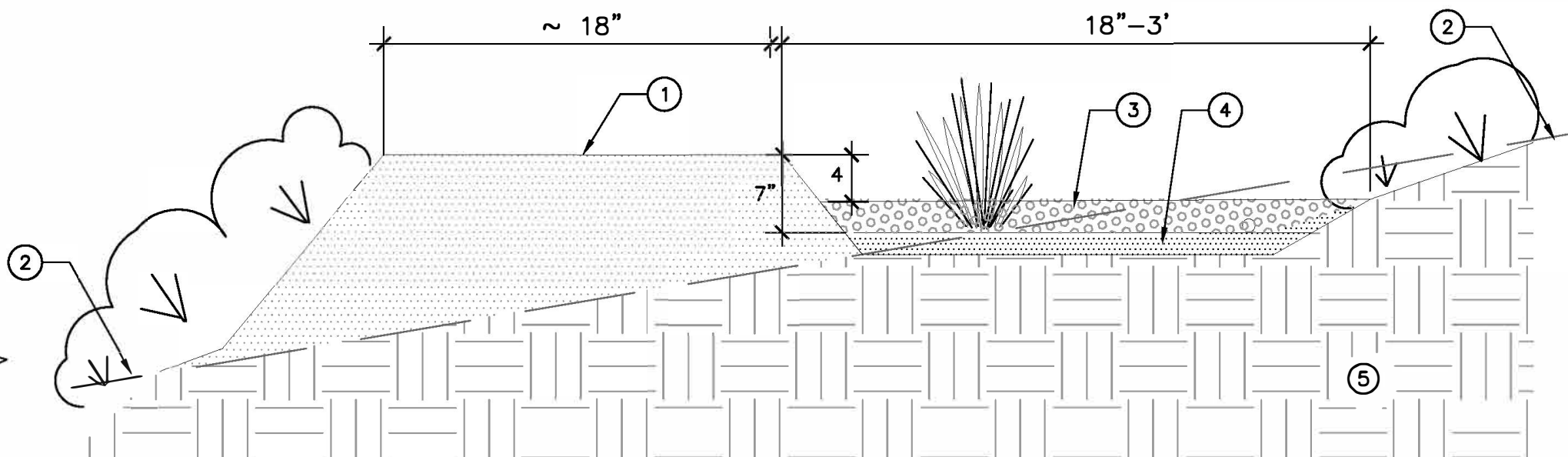


**6 RAINWATER FLOW THRU PERMEABLE PAVING SECTION**  
SCALE: 1"=1'-0"

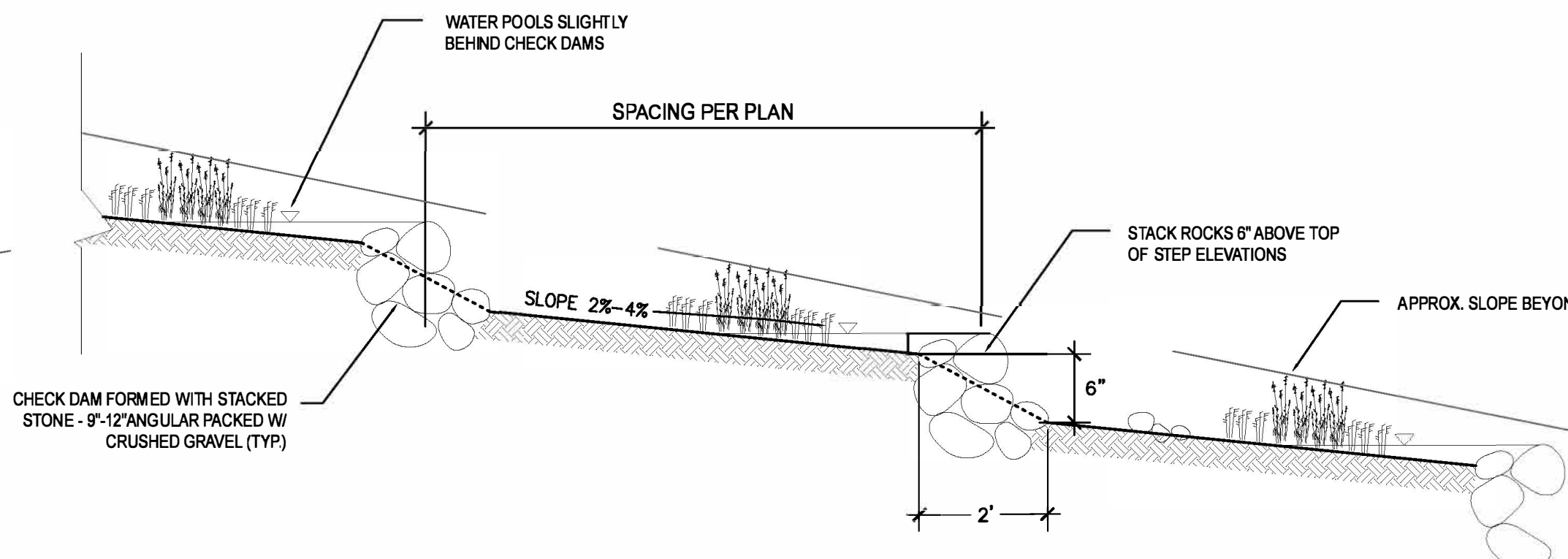


**7 DRAIN SLEEVE THRU PATH FROM RAINGARDEN**  
SCALE: 1/2"=1'-0"

- 1 BERM; CONSTRUCT WHILE DIGGING BASIN. CAN BE MADE WIDER TO BE A WALKING PATH
  - 2 EXISTING SLOPE 8% OR LESS
  - 3 3" PEA GRAVEL MULCH INSURES NO PONDING WITHIN 72 HRS FOR MOSQUITO CONTROL. TOTAL DEPTH INCLUDING PONDING IS 7". SEE DETAIL 9 FOR ROCK CHECK DAMS
  - 4 SCARIFY & AMEND NATIVE SOIL AT BOTTOM OF RAIN GARDEN
  - 5 UNDISTURBED SUBGRADE
- NOTES:  
1. MINIMUM SLOPE IN THE DIRECTION OF FLOW TO BE 0.5%. IF SLOPE EXCEEDS 2% STEP DOWN IN CASCADE PER DETAIL # 9 THIS PAGE.  
2. NO WOOD CHIP OR BARK MULCH IN RAINWATER SYSTEMS TO AVOID CLOGGING STORM DRAINS.



**8 SWALE/CASCADE ON SLOPE - SECTION**  
1/2"=1'-0"



**9 SWALE/CASCADE ON SLOPE - LONGITUDINAL SECTION**  
1/2"=1'-0"

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 ROSS, CITY OF PETALUMA, CITY OF SOYAL, 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, CLAIM, SUITS AND DAMAGES, INCLUDING ATTORNEY'S FEES, ARISING FROM OR RESULTING FROM THE USE OF THESE PLANS. I UNDERSTAND THAT IT IS MY RESPONSIBILITY AS THE PROJECT OWNER TO ENSURE THAT PLAN ELEMENTS ARE IMPLEMENTED SAFELY AND ACCORDING TO APPLICABLE SOUTHERN CALIFORNIA PLANNING AND DESIGN CODES.

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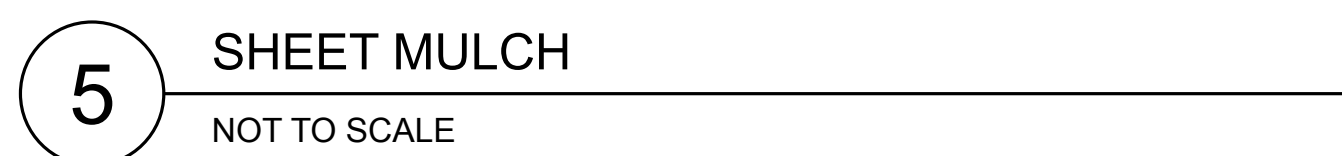
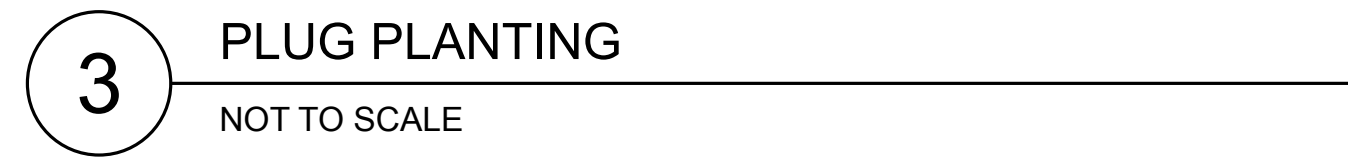
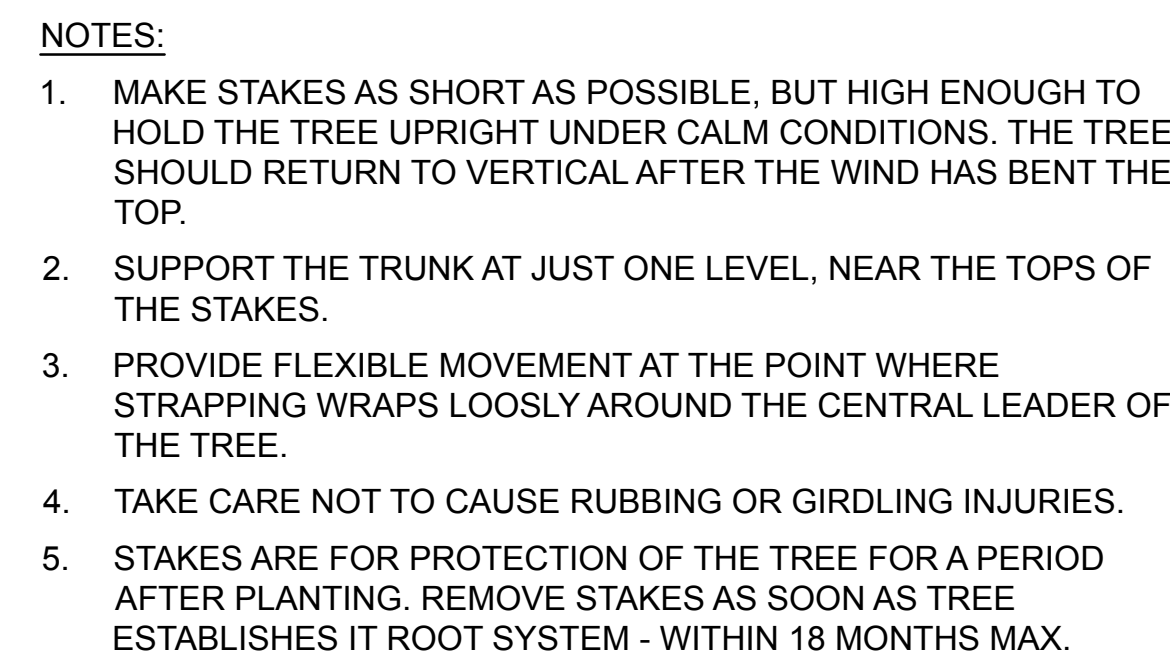
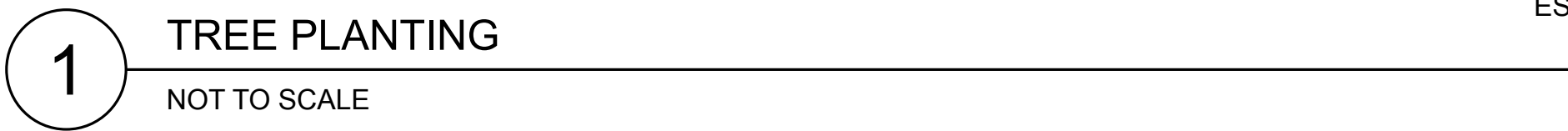
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**RAIN GARDENS & SWALE DETAILS**

**DATE**  
**PERMIT PLAN**  
**MAY 18, 2018**

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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

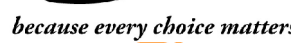


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## PLANTING DETAILS

DATE \_\_\_\_\_

PERMIT PLAN  
MAY 18, 2018

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**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-YOURSELF 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)

Laundry: \_\_\_\_\_ occupants x 15 gallons/day \_\_\_\_\_ 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/day) ÷ gal/ft<sup>2</sup>/day = ft<sup>2</sup>  
 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.

Design of Six Soil Types	Min SQ. FT. of Irrigation/ Leaching Area Per 100 Gallons of Estimated Graywater Discharge Per Day	Max Absorption Capacity in Gallons Per SQ. FT. of Irrigation/ Leaching Area for an 24-Hour Period
Coarse sand or gravel	30	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 ft<sup>2</sup>)

- Area = π r<sup>2</sup> = 3.14 x (canopy radius of existing plant)<sup>2</sup> OR = (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

**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..

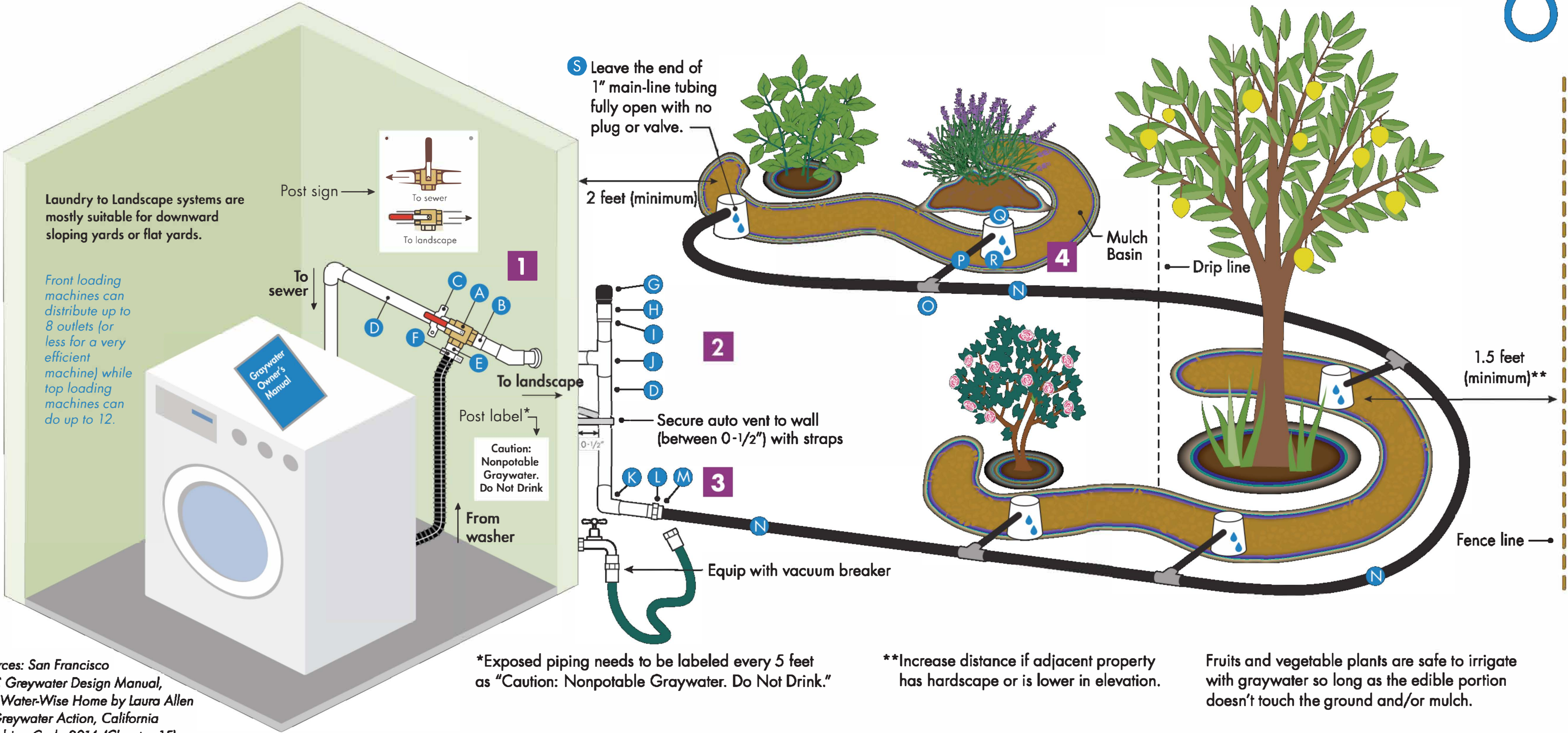
THE KEY TO PROPER IRRIGATION WITH GRAYWATER IS TO KNOW HOW MUCH THE CHOSEN PLANTS NEED GIVEN EVAPOTRANSPIRATION RATES, PLANT WATERING NEEDS, AND EXISTING CANOPY.

**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.

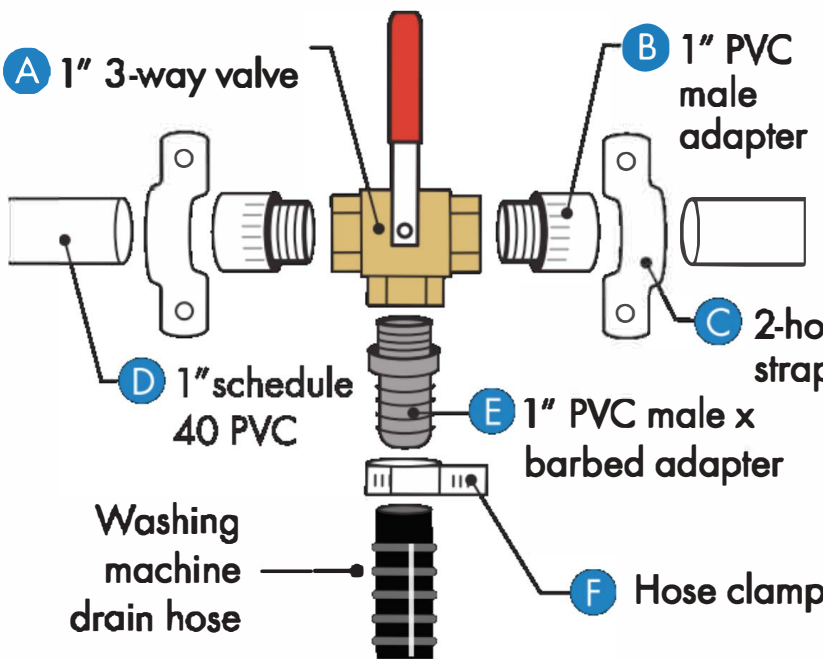
- OASIS LAUNDRY
- BIO PAC LAUNDRY LIQUID
- BIOKLEEN LAUNDRY LIQUID
- ECOVER LAUNDRY WASH (SOME SALT)
- LIQUID ECOS LIQUID DETERGENT
- LIFE TREE LAUNDRY LIQUID
- MOUNTAIN GREEN LAUNDRY DETERGENT
- VASKA HERBATERGENT

**Laundry to Landscape: Graywater System Example**

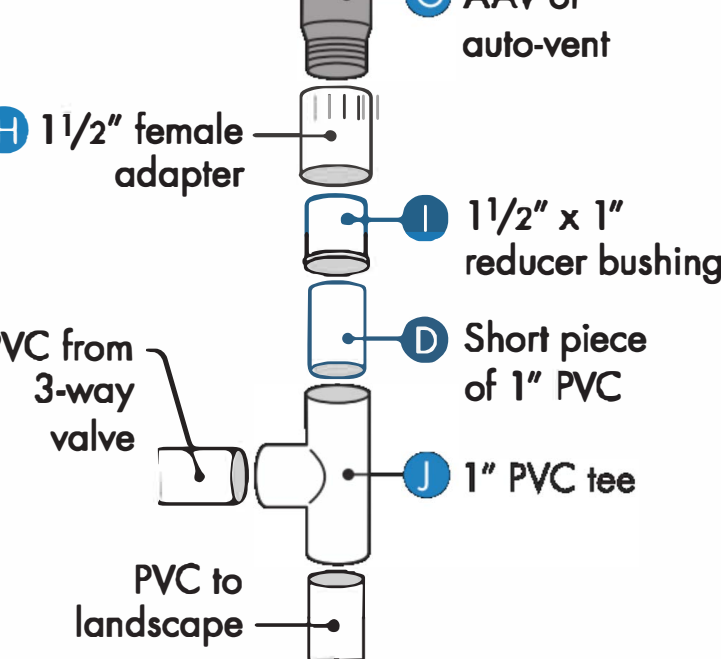


Sources: San Francisco PUC Graywater Design Manual, The Water-Wise Home by Laura Allen of Graywater Action, California Plumbing Code 2016 (Chapter 15)

**1 Diverter (3-way) Valve**

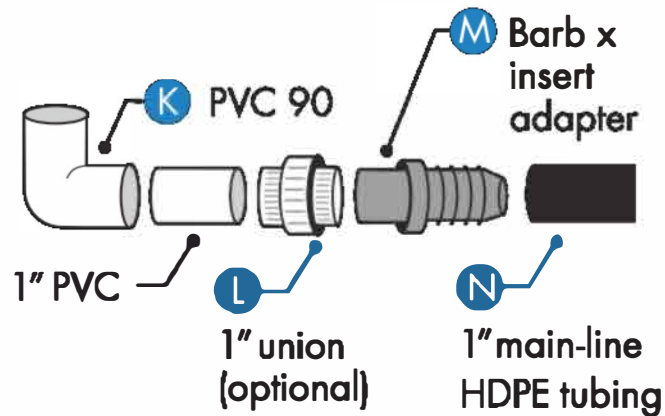


**2 Auto Vent**

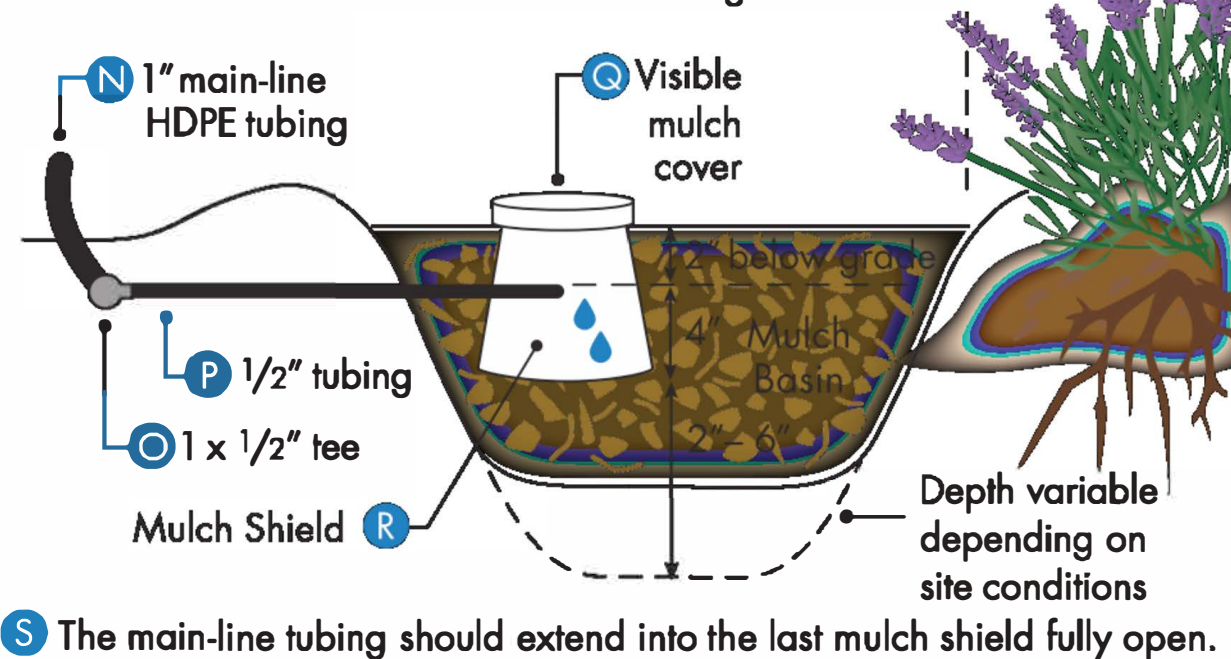


**3 System Clean-out**

This facilitates flushing clogs out of the landscape side of the system



**4 Mulch Basin**



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SHEET TITLE:  
 GREYWATER -  
 LAUNDRY TO  
 LANDSCAPE

DATE  
 PERMIT PLAN  
 MAY 18, 2018

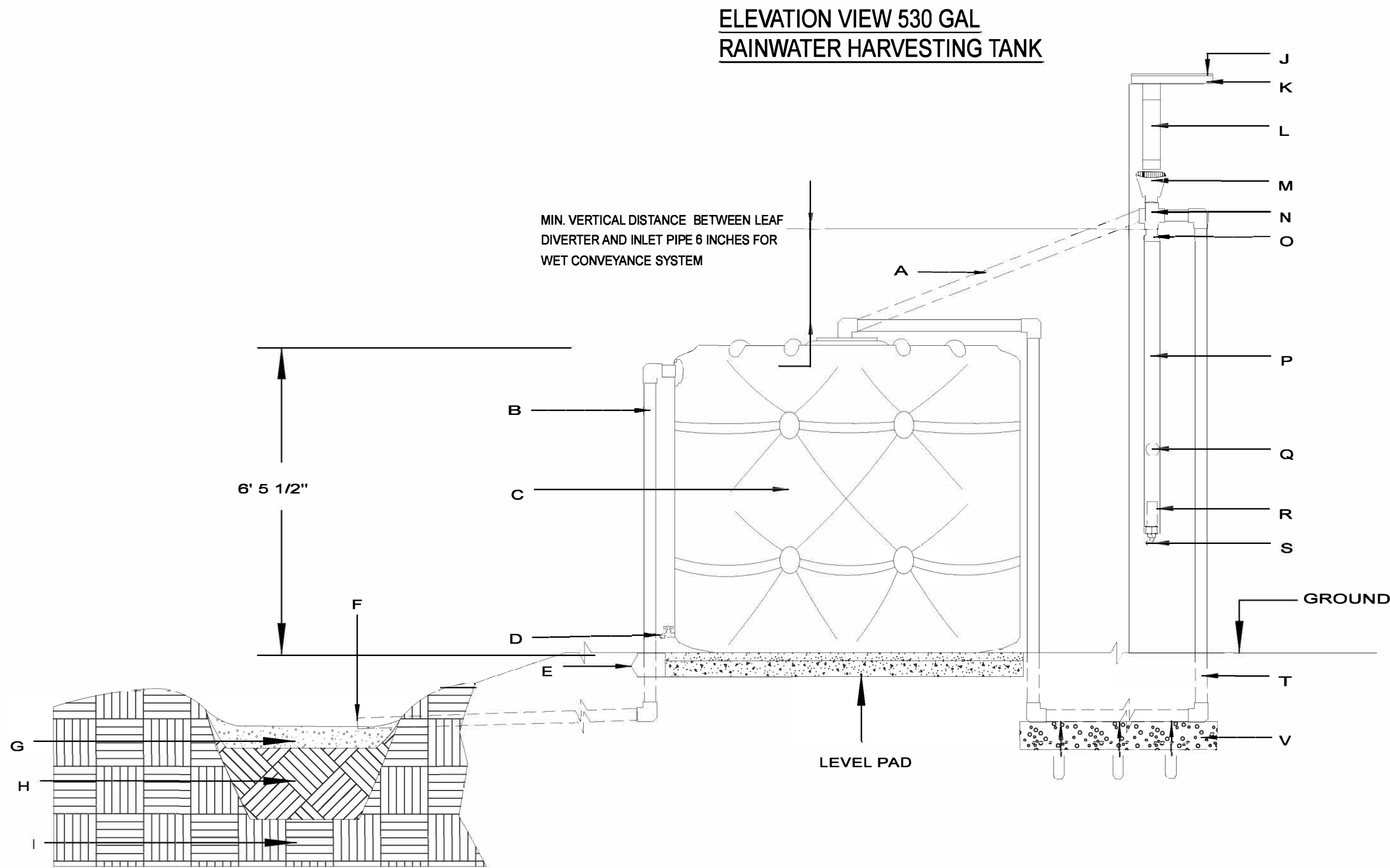
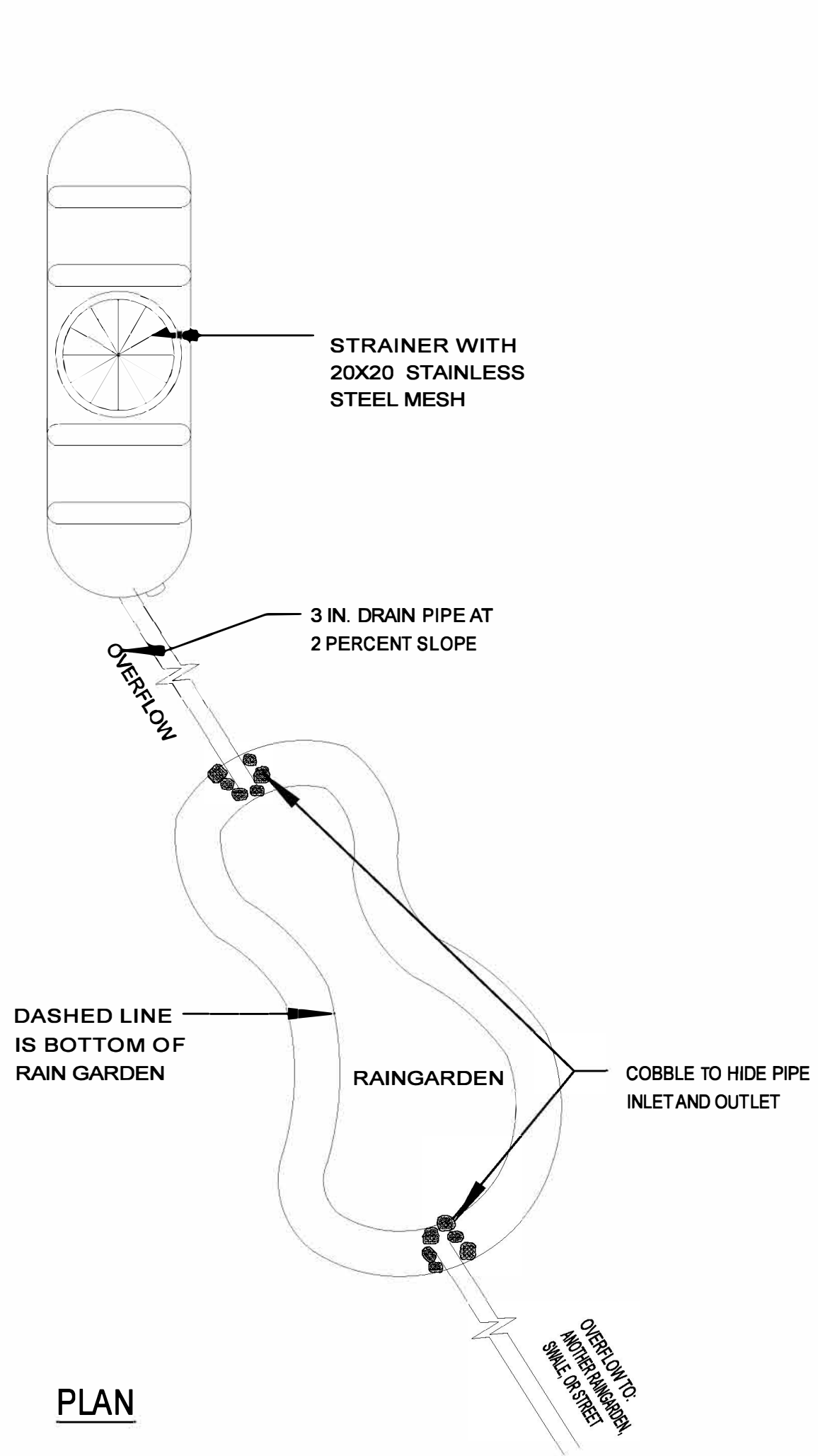
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SECTION VIEW RAIN GARDEN

- NOTES:
1. A RAINWATER CATCHMENT SYSTEM MAY NOT REQUIRE A BUILDING PERMIT PROVIDED ALL OF THE FOLLOWING ARE MET (CALIFORNIA PLUMBING CODE 1601.3 (1)):
    - WATER WILL BE USED FOR OUTDOOR NON-SPRAY IRRIGATION
    - MAXIMUM STORAGE CAPACITY OF 5,000 GALLONS
    - TANK IS SUPPORTED DIRECTLY UPON GRADE
    - RATIO OF HEIGHT TO DIAMETER OR WIDTH DOES NOT EXCEED 2 TO 1
    - DOES NOT REQUIRE ELECTRICAL POWER OR MAKEUP WATER SUPPLY CONNECTION (SEE NOTE 2 AND 3)
  2. ALL OTHER RAINWATER CATCHMENT SYSTEMS MUST BE SUBMITTED FOR BUILDING PERMIT.
  3. PUMP AND PRESSURE TANK LIKELY REQUIRE INEXPENSIVE, OVER-THE-COUNTER, ELECTRICAL PERMIT.
  4. 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.
  5. TANKS CAN BE DAISY CHAINED AT POINT "D" USING FLEXIBLE PIPE ONLY TO REDUCE CHANCE OF LEAKAGE IN EARTHQUAKES.
  6. THERE ARE NO REQUIRED SETBACKS FROM BUILDINGS OR SIDE/BACK PROPERTY LINES, THOUGH A CONVERSATION WITH YOUR NEIGHBOR COULD BE HELPFUL.

- 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
- M. OPTIONAL BUSHMAN LEAF DIVERTER (WITH 20X20 SCREEN IF USING WET CONVEYANCE) (REDUNDANT WITH LEAF GUARD ON GUTTERS)
- N. 3 IN. PVC DRAINAGE TEE
- 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" CONVEYANCE 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