

GENERAL

TREES PLANTED WITHIN THE STREET RIGHT-OF-WAY OR TREES PLANTED WITHIN SIX (6) FEET OF ANY STRUCTURE WHICH IS WITHIN THE RIGHT-OF-WAY SHALL BE SUBJECT TO THE CONDITIONS OF THIS STANDARD PLAN FOR PARKWAY AND MEDIAN TREES. IT IS REQUIRED THAT A LANDSCAPE PLAN BE PREPARED BY A LICENSED LANDSCAPE ARCHITECT EXCEPT FOR IMPROVEMENTS INVOLVING ONE SINGLE FAMILY RESIDENCE. THE PLAN SHALL SHOW ALL PROPOSED PLANTING AND IRRIGATION DETAILS AND THE MINIMUM PROPOSED PLANTING DISTANCE FROM ANY STRUCTURE FOR EACH SPECIES OF TREE.

DEFINITIONS

- STRUCTURE: ANY PERMANENT IMPROVEMENT; CURB, GUTTER, SIDEWALK, LIGHT POST, UNDERGROUND STRUCTURE, ETC.
- PLANTING WIDTH: THE MINIMUM ALLOWABLE DISTANCE BETWEEN STRUCTURES IN WHICH A TREE CAN BE PLANTED (I.E., BACK OF CURB TO BACK OF CURB OR BACK OF CURB TO SIDEWALK).
- SPACING: THE MINIMUM ALLOWABLE DISTANCE BETWEEN TREES.

USE OF TREE LIST AND OTHER TREES

SELECTION FROM THE LIST FOR SITE SUITABILITY SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE ARCHITECT PREPARING THE PLANS. TREES NOT SHOWN ON THE LIST MAY BE ALLOWED WITH WRITTEN APPROVAL FROM THE DIRECTOR OF ORANGE COUNTY PUBLIC WORKS. A WRITTEN REQUEST DOCUMENTING THE SUITABILITY OF THE PROPOSED TREE SHALL ACCOMPANY THE LANDSCAPE PLANS.

PLANTING CRITERIA

1. TREES SHALL BE PLACED IN ACCORDANCE WITH STD. PLAN 520-4 AND THE FOLLOWING CRITERIA:

HORIZONTAL PLANE:

A) NO TREE SHALL BE PLANTED WITHIN:

- FIFTY (50) FEET FROM AN INTERSECTING STREET MEASURED FROM THE INTERSECTING RIGHT-OF-WAY LINES.
- THIRTY-FIVE (35) FEET FROM A STREET LIGHT OR A COMMERCIAL, INDUSTRIAL OR MULTI-UNIT RESIDENTIAL (MORE THAN FOUR UNITS) DRIVEWAY.
- TEN (10) FEET FROM ANY SINGLE FAMILY OR MULTI-UNIT (FOUR UNITS OR LESS) DRIVEWAY, UTILITY POLE, FIRE HYDRANT, UTILITY SERVICE OR ROADWAY SIGN.
- FIVE (5) FEET FROM ANY WALKWAY CONNECTION OR BUILDING ENTRANCE.

B) TREES SHALL NOT BE PLANTED IN A PARKWAY OR MEDIAN SMALLER IN WIDTH THAN THE MINIMUM PLANTING WIDTH DENOTED ON THE LIST FOR EACH SPECIES.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

Khalid Bazmi
Khalid Bazmi, County Engineer

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STD. PLAN

1700

STREET TREE LIST

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C) TREES SHALL NOT BE PLANTED CLOSER TO THE BACK OF CURB OR EDGE OF SIDEWALK THAN ONE-HALF (1/2) THE MINIMUM ALLOWABLE PLANTING WIDTH DENOTED ON THE LIST FOR EACH SPECIES, AND IN NO CASE SHALL TREES BE PLANTED CLOSER THAN TWO AND ONE-HALF (2 1/2) FEET FROM THE BACK OF SIDEWALK WHERE SIDEWALK ABUTS THE CURB.

VERTICAL PLANE

A) TREES PLANTED UNDER OR ADJACENT TO UTILITY LINES SHALL BE SPECIES SELECTED WITH A MATURE GROWTH HEIGHT WHICH WILL NOT CONFLICT WITH THE OVERHEAD UTILITY LINES.

B) TREES SHALL BE PRUNED TO MEET THE FOLLOWING MINIMUM STANDARDS:

- ALL TRAFFIC CONTROL OR INFORMATIONAL SIGNS (OFFICIAL) SHALL BE CLEARLY VISIBLE.
- ALL BRANCHES OVERHANGING ROADWAY (BEYOND CURB FACE) SHALL HAVE A FOURTEEN (14) FOOT MINIMUM CLEARANCE.
- ALL BRANCHES OVERHANGING WALKWAYS SHALL HAVE A NINE (9) FOOT MINIMUM CLEARANCE.

2. TREES PLANTED WITHIN PARKWAYS OR TREE WELLS SHALL BE PLANTED IN ACCORDANCE WITH STANDARD PLANS 518-3-OC AND 1708.

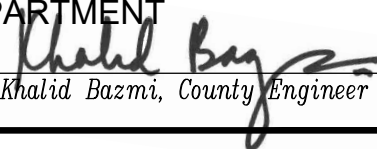
3. TREE WELLS WILL BE PERMITTED ONLY WHERE A MINIMUM OF FOUR (4) FEET OF CLEAR SIDEWALK IS PROVIDED IN ACCORDANCE WITH STANDARD PLAN 1410, AND SHALL COMPLY WITH STANDARD PLAN 519-3-OC.

4. CONTINUED MAINTENANCE INCLUDING TRIMMING, SPRAYING AND, IF NECESSARY, REMOVAL AND REPLANTING OF STREET TREES INSTALLED UNDER THE TERMS OF AN ENCROACHMENT PERMIT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE.

5. FAILURE TO INSTALL IN ACCORDANCE WITH THIS STANDARD PLAN, TO INSTALL WITHOUT AN ENCROACHMENT PERMIT, OR TO PROPERLY MAINTAIN AS REQUIRED SHALL BE SUBJECT TO PROVISIONS OF THE CALIFORNIA STREETS AND HIGHWAYS CODE AUTHORIZING CORRECTIVE ACTION BY THE DIRECTOR OF ORANGE COUNTY PUBLIC WORKS AT THE EXPENSE OF THE PERMITTEE OR PROPERTY OWNER.

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PARKWAY AND STREET MEDIAN TREES

<u>BOTANICAL NAME</u> <u>COMMON NAME</u>	<u>TYPE</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>MINIMUM PLANTING WIDTH</u>	<u>SPACING</u>	<u>SPECIAL CONDITIONS</u>
(ALL DIMENSIONS ARE IN FEET)						
AGONIS FLEXUOSA AUSTRALIAN WILLOW, PEPPERMINT	E	35	25	10	40	DROUGHT TOLERANT
ALNUS RHOMBIFOLIA WHITE ALDER	D	50+	30+	10	40	DEEP WATERING REQ'D
ARBUTUS X 'MARINA' MARINA MADRONE	E	35	35	4	40	LIKES GOOD DRAINAGE BEAUTIFUL PEELING BARK
ARCHONTOPHOENIX CUNNINGHAMIANA (KING PALM)	P	40	15	10	50	LOW MAINTENANCE MODERATE WATER
BAUHINIA BLAKEANA HONG KONG ORCHID TREE	D	30	25	4	30	NEEDS DEEP WATERING SHOWY FLOWERS
BRACHYCHITON ACERIFOLIUS FLAME TREE	D	60	30	10	45	DROUGHT TOLERANT ONCE ESTABLISHED
BRACHYCHITON POPULNEUS BOTTLE TREE	E	45	30	10	45	DROUGHT TOLERANT
BRAHEA ARMATA MEXICAN BLUE PALM	P	40	12	4	30	DROUGHT TOLERANT
BRAHEA EDULIS GUADALUPE PALM	P	30	15	4	30	DROUGHT TOLERANT
CALODENDRON CAPENSIS CAPE CHESTNUT	E	45	40	10	50	DROUGHT RESISTANT MAUVE FLOWERS
CEDRUS ATLANTICA ATLAS CEDAR	E	45	30	10	40	MOIST SOILS, TOLERANT OF DRY, SANDY SOILS
CHAMAEROPS HUMILIS MEDITERRANEAN FAN PALM	P	20	15	10	10	LOW MAINTENANCE
DRACAENA DRACO DRAGON TREE	E	20	20	10	30	SINGLE OR MULTIPLE TRUNK
ELAEOCARPUS DECIPIENS JAPANESE BLUEBERRY TREE	E	40	15	5	15	BLOOMS IN SUMMER

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STREET TREE LIST

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<u>BOTANICAL NAME</u> <u>COMMON NAME</u>	<u>TYPE</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>MINIMUM PLANTING WIDTH</u>	<u>SPACING</u>	<u>SPECIAL CONDITIONS</u>
(ALL DIMENSIONS ARE IN FEET)						
ERIOBOTRYA DEFLEXA BRONZE LOQUAT	E	-20	-20	4	25	Fruit can be messy
ERYTHRINA CAFFRA KAFFIR-BLOOM CORAL TREE	D	40	45	10	50	Deep watering req'd
ERYTHRINA CORALLIODES NAKED CORAL TREE	D	30	30	10	45	Deep watering req'd
EUCALYPTUS CITRIODORA LEMON-SCENTED GUM	E	50	35	6	45	Well-drained soil
EUCALYPTUS CLADOCALYX SUGAR GUM	E	60	35	6	45	Moderately drought tolerant
EUCALYPTUS FICIFOLIA RED FLOWERING GUM	E	40	25	6	35	DROUGHT TOLERANT
EUCALYPTUS LEUCOXYLON WHITE IRONBARK	E	50	35	6	45	DROUGHT TOLERANT
EUCALYPTUS MACULATA SPOTTED GUM	E	50	35	6	40	DROUGHT TOLERANT
EUCALYPTUS NICHOLLI WILLOWLEAF PEPPERMINT	E	40	30	6	30	DROUGHT TOLERANT
EUCALYPTUS POLYANTHEMOS SILVER DOLLAR GUM	E	45	25	6	40	DROUGHT TOLERANT
EUCALYPTUS RUDIS DESERT GUM	E	45	35	6	40	DROUGHT TOLERANT
EUCALYPTUS SIDEROXYLON RED IRONBARK	E	60	40	6	45	DROUGHT TOLERANT
GEIJERA PARVIFLORA AUSTRALIAN WILLOW	E	40	35	4	40	
GINGKO BILOBA GINGKO TREE	D	45	25	4	35	MALE PLANTS ONLY
JUBAEA CHILENSIS CHILEAN NINE PALM	P	70	15	10	10	DROUGHT TOLERANT

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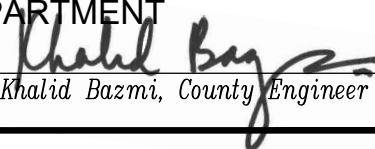
STREET TREE LIST

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<u>BOTANICAL NAME</u>				MINIMUM			
<u>COMMON NAME</u>	<u>TYPE</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>PLANTING</u>	<u>SPACING</u>	<u>SPECIAL CONDITIONS</u>	
				<u>WIDTH</u>			
(ALL DIMENSIONS ARE IN FEET)							
KOELREUTERIA BIPINNATA CHINESE LANTERN TREE	D	35	25	6	40	LATE SUMMER FLOWER CLUSTERS	
LAGERSTROEMIA HYBRID 'MIAMI' CRAPE MYRTLE	D	25	12	5	12	HOT-PINK MILDEW RESISTANT	
LAGERSATROEMIA HYBRID 'MUSKOGEE' CRAPE MYRTLE	D	25	12	5	12	LIGHT LAVENDER MILDEW RESISTANT	
LAGERSTROEMIA HYBRID 'NATCHEZ' CRAPE MYRTLE	D	25	12	5	12	WHITE MILDEW RESISTANT	
LAGERSTROEMIA HYBRID 'TUSCORORA' CRAPE MYRTLE	D	25	12	5	12	PINK-RED MILDEW RESISTANT	
LAGERSTROEMIA HYBRID 'TUSKEGEE' CRAPE MYRTLE	D	25	12	5	12	PINK-RED MILDEW RESISTANT	
LAGERSTROEMIA INDICA CRAPE MYRTLE	D	25	30	3	30	TOLERATES DRY CONDITIONS	
LAURUS NOBILIS SWEET BAY	E	20	20	5	20	FREQUENT WATERING IN WELL-DRAINED SOIL	
LIQUIDAMBAR ORIENTALIS ORIENTAL SWEET GUM	D	30	25	4	30	DEEP WATERING REQ'D	
LIQUIDAMBAR STYRACIFLUA AMERICAN SWEET GUM	D	50	25	4	35	DEEP WATERING REQ'D	
LITHOCARPUS DENSIFLORA TANBARK OAK	E	50	35	6	45	COOL-MOIST COASTAL AIR WELL-DRAINED SOIL	
LYANTHAMNUS F. ASPLENIFOLIUS CATALINA IRONWOOD	E	30+	20+	6	30	CALIFORNIA NATIVE	
MAGNOLIA GRANDIFLORA SOUTHERN MAGNOLIA	E	60	40	6	50	WELL-DRAINED, ACIDIC SOILS	
MELALEUCA QUINQUENERVIA CAJEPUT TREE	E	35	25	4	40	MODERATE TO REGULAR WATER WIND AND SALT TOLERANT	
METROSIDEROS EXCELSUS NEW ZEALAND CHRISTMAS TREE	E	30	25	6	30	GOOD NEAR COAST	
OLEA EUROPAEA (FRUITLESS) EUROPEAN OLIVE	E	35	30	14	40	MODERATE WATER	

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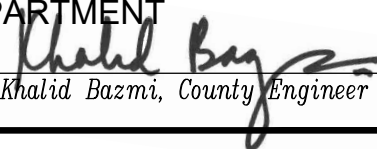
STREET TREE LIST

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<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>TYPE</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>MINIMUM PLANTING WIDTH</u>	<u>SPACING</u>	<u>SPECIAL CONDITIONS</u>
(ALL DIMENSIONS ARE IN FEET)							
PHOENIX CANARIENSIS CANARY ISLAND DATE PALM	P	60	35	12	50	DROUGHT TOLERANT ONCE ESTABLISHED	
PINDO PALM JELLY PALM BUTIA CAPITATA	P	20	15	6	10	TOLERATES HEAT, ARIDITY & POOR SOIL	
PINUS CANARIENSIS CANARY ISLAND PINE	E	60	30	6	45		
PINUS PATULA JELECOTE PINE	E	70	45	14	45	LOW MAINTENANCE	
PITTOSPORUM VIRIDIFLORUM CAPE PITTOSPORUM	E	25	15	4	35	MODERATE WATER	
PLATANUS ACERIFOLIA LONDON PLANE TREE	D	50	35	4	40	MODERATE WATER DO NOT OVER WATER	
PODOCARPUS GRACILIOR FERN PINE	E	35	20	4	35		
PODOCARPUS GRACILIOR YEW PINE	E	30	12	5	12	WELL DRAINED SOIL	
PODOCARPUS HENKELII LONG LEAFED YELLOW WOOD	E	40	18	5	18	MODERATE WATER	
PYRUS CALLERYANA 'BRADFORD' BRADFORD PEAR	D	50	30	5	30	BRITTLE SUSCEPTIBLE WIND DAMAGE/BREAKAGE	
QUERCUS AGRIFOLIA COAST LIVE OAK	E	50	35	14	50		
QUERCUS ILEX HOLLY OAK	E	50	40	6	40		
QUERCUS SUBER CORK OAK	E	50	45	14	45		
QUERCUS ENGELMANII MESA OAK	E	60	50	14	50		
RHUS LANCEA AFRICAN SUMAC	E	-30	-25	4	30		
STENOCARPUS SINUATIS FIREWHEEL TREE	E	30	15	4	30	MODERATE WATER DO NOT OVER WATER	

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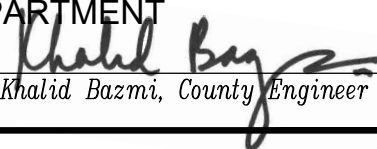
STREET TREE LIST

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<u>BOTANICAL NAME</u>				MINIMUM			
<u>COMMON NAME</u>	<u>TYPE</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>PLANTING</u>	<u>SPACING</u>	<u>SPECIAL CONDITIONS</u>	
				<u>WIDTH</u>			
(ALL DIMENSIONS ARE IN FEET)							
TIPUANA TIPU TIPU TREE	D	25	20	6	30	MODERATE WATER	
TRACHYCARPUS FORTUNEI WINDMILL PALM	P	25	10	3	25	DROUGHT TOLERANT	
TRISTANIA CONFERTA BRISBANE BOX	E	45	25	4	40	DROUGHT RESISTANT	
ULMUS PARVIFOLIA 'SEMPERVIRENS' EVERGREEN CHINESE ELM	E	40+	30+	4	40		
UMBELLULARIA CALIFORNICA CALIFORNIA BAY LAUREL	E	25	20	6	35	MOIST SOIL	

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STREET TREE LIST

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GENERAL

WHEN DROUGHT TOLERANT LANDSCAPING IS REQUIRED, THE OBJECTIVE IS TO PROVIDE LANDSCAPING WHICH IS AESTHETIC INITIALLY AND WILL RETAIN ITS AESTHETIC APPEAL WITH TIME, YET IS LOWER IN MAINTENANCE AND WATER REQUIREMENTS THAN TRADITIONAL PLANTING. IT IS REQUIRED THAT A LANDSCAPE PLAN BE DEVELOPED BY A LICENSED LANDSCAPE ARCHITECT AND THAT AN ANNUAL WATERING SCHEDULE, SHOWING SEASONAL WATER REQUIREMENTS, BE A PART OF THE PLAN.

DROUGHT TOLERANT PLANT LIST

THE DROUGHT TOLERANT PLANT LIST (SEE SHEETS 3 – 12) IDENTIFIES THOSE PLANTS WHICH THE OC PUBLIC WORKS HAS DETERMINED ARE DROUGHT TOLERANT.

DROUGHT TOLERANCE

IN ORDER TO CLARIFY ITEMS, THE FOLLOWING CLASSIFICATIONS ARE USED IN THE COUNTY’S DROUGHT TOLERANT PLANT LIST:

<u>PLANT TYPE</u>	<u>INCHES/YR.*</u>	<u>ACRE FT./YR.*</u>
NO SUMMER WATER PLANTS (NSW)	0	0
LOW SUMMER WATER PLANTS (LSW)	1–24	2

* THE AMOUNT OF WATER NEEDED BEYOND WINTER RAINFALL TO MAINTAIN ESTABLISHED PLANTS. IT SHOULD BE NOTED THAT PLANTS RATED AS NO SUMMER WATER MAY REQUIRE TEMPORARY WATERING FOR ONE GROWING SEASON TO BECOME ESTABLISHED. DETERMINATION OF TEMPORARY WATERING REQUIREMENTS IS THE RESPONSIBILITY OF THE LANDSCAPE ARCHITECT PREPARING THE PLANS.

AVAILABILITY OF PLANT MATERIAL

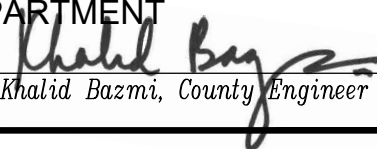
PLANT AVAILABILITY WAS NOT A FACTOR IN COMPILING THE LIST. IT IS HOPED THAT THERE WILL BE MORE INCENTIVE TO PROPAGATE MATERIAL NOT AVAILABLE TODAY. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE ARCHITECT TO VERIFY AVAILABILITY OF PLANT MATERIAL BEFORE SPECIFYING.

USE OF PLANT LIST

SELECTION FROM THE LIST FOR SITE SUITABILITY IS THE RESPONSIBILITY OF THE LANDSCAPE ARCHITECT PREPARING THE PLANS. PLANS ARE TO BE IN COMPLIANCE WITH ORANGE COUNTY FIRE AUTHORITY REQUIREMENTS AND APPROVED BY OCPW.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

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Khalid Bazmi, County Engineer

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1701

DROUGHT TOLERANT PLANTS

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USE OF OTHER PLANTS

IN AREAS WHERE DROUGHT TOLERANT PLANTS ARE REQUIRED, PLANTS NOT SHOWN ON THE LIST MAY BE INCLUDED ON THE PLANTING PLAN WITH WRITTEN APPROVAL BY THE DIRECTOR OF OC PUBLIC WORKS. A WRITTEN REQUEST DOCUMENTING THE SUITABILITY OF THE PROPOSED PLANT MATERIAL SHALL ACCOMPANY THE LANDSCAPE PLANS.

STREET TREE LIST

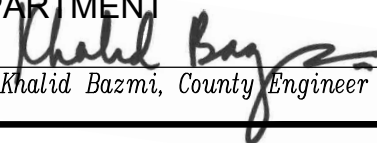
STREET TREES IN PARKWAYS AND STREET MEDIAN ISLANDS SHALL CONFORM TO STANDARD PLAN 1700.

INTERSECTION SIGHT DISTANCE

SIGHT DISTANCES SHALL BE MAINTAINED PER THE STANDARDS SET FORTH IN STANDARD PLAN 1117 & AASHTO.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

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DROUGHT TOLERANT PLANTS

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ORANGE COUNTY PUBLIC WORKS

DROUGHT TOLERANT PLANT LIST
STANDARD PLAN NO. 1701

LEGEND

NSW - No Summer Water FR - Fire Retarding NCN - No Common Name
 LSW - Low Summer Water CT- Clay Tolerant GC - Ground Cover
 Plant dimensions are considered ultimate size and are expressed as height x width

BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Acacia baileyana / Bailey Acacia	Shrub/ Tree	LSW	Most acacias need well drained soil
Acacia cultriformis / Knife Acacia	Shrub/ Tree	LSW	Susceptible to Black Spot, Caterpillars, Powdery Mildew, Root Rot, Scales.
Acacia podalyriaefolia / Pearl Acacia	Shrub	LSW	12'-20', spread 15-20', yellow flowers
Acacia pycnantha / Golden Wattle	Tree	LSW	12'-20', spread 15-20', yellow flowers
Acacia retinodes / Water Wattle	Shrub	LSW	High Allergen
Acacia redolens 'Desert Carpet'	Shrub	NSW, FR	Great ground cover on slopes
Acacia redolens 'Prostrata' / Low Boy Acacia	Shrub	LSW	Rapid coverage on slopes and for erosion control
Achillea filipendulina / Golden Yarrow	GC	LSW	2' tall, yellow flower clusters
Achillea millefolium / Common Yarrow	GC	LSW	3' tall, white flower clusters
Achillea tomentosa / Wooly Yarrow	GC	LSW	4"-5" tall
Aeonium arboreum 'Zwartkop' / NCN	Succulent	LSW	4' x 2', yellow flower
Aeonium decorum / NCN	Succulent	LSW, FR	1' x 2', pink flower
Aeonium haworthii / NCN	Succulent	LSW	2' x 2', pale yellow flower
Aeonium 'Pseudotabulaeforme' / NCN	Succulent	LSW	1'-1.5' x 1.5', yellow flowers
Aeonium simsii / NCN	Succulent	LSW, FR	Light shade inland, full sun on coast
Aeonium urbicum 'Dinner Plate' / NCN	Succulent	LSW	6' x 3', pink or white flowers
Agave Americana / Century plant	Succulent	LSW, FR	5'-7' x 8"-12", spike-like leaves
Agave americana 'Variegata' / Variegated Century Plant	Succulent	LSW, FR	7' x 12', spike-like leaves
Agave attenuata / Foxtail Agave	Succulent	NSW, FR	5' x 8', spike leaves
Agave vilmoriniana / Octopus Agave	Succulent	NSW, FR	3'-4' x 3'-4'
Agave vilmoriniana 'Variegata' / Variegated Octopus Agave	Succulent	NSW, FR	4' x 4'
Agonis flexuosa / Peppermint tree	Tree	LSW, CT	25'-35' x 10'-15'
Aloe arborescens / Tree Aloe	Succulent	LSW, FR	Large shrub or small tree, up to 16 feet, saw tooth edges
Aloe brevifolia / Short Leaf Aloe	Succulent	LSW	2' x 2', orange/red flower
Aloe striata / Coral Aloe	Succulent	NSW, FR	3' x 2', spike-like leaves, should consider other
Aloe vera / Medicinal Aloe	Succulent	NSW, FR	5' x 8', spike-like leaves, should consider other
Alyogyne huegelii / Blue Hibiscus	Shrub	LSW	Not a true hibiscus
Anigozanthus 'Bush Gold' / Kangaroo Paw	Shrub	LSW	Striking tubular flowers in golden yellow
Anigozanthus 'Harmony' / Kangaroo Paw	Shrub	LSW	Striking tubular flowers in red and yellow

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1701

DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Arbutus menziesii / Madrone	Tree	LSW	Native to California
Arbutus unedo / Strawberry Tree	Tree	LSW	White Flowers - Low water
Arctostaphylos andersonii pallida / Pale Heartleaf Manzanita	Shrub	NSW	Arctostaphylos require good drains no salts in soil or water, no fertilizer
Arctostaphylos densiflora "Howard McMinn" / Sonoma Manzanita	GC	LSW	8' x 12', attracts birds
Arctostaphylos edmundsii / Little Sur Manzanita	GC	LSW, FR	1' x 5', red berries
Arctostaphylos franciscana / Francis Manzanita	Shrub	LSW	Proposed endangered
Arctostaphylos hookeri / Monterey Manzanita	Shrub	LSW	4' x 6'+, good on hillsides
Arctostaphylos pumila / Dune Manzanita	Shrub/ GC	LSW	3' x -4', attracts birds
Arctostaphylos pungens / Manzanita	Shrub	NSW	Tolerates alkaline soil, sand and clay
Arctostaphylos uva-ursi / Bearberry	GC	LSW	12" x 15', salt air tolerant
Atriplex canescens / Four-Wing Saltbush	Shrub	NSW, FR	Heat and salt tolerant
Atriplex glauca / Waxy Saltbush	Shrub	LSW	Perennial, introduced
Atriplex lentiformis breweri / Brewer Saltbush	Shrub/GC	NSW, FR, CT	Highly adaptable
Baccharis 'Centennial' / Trailing Desert Broom	Shrub	LSW, FR	Resistant to root rot.
Baccharis pilularis "Twin Peaks" / Dwarf Coyote Brush	Shrub	LSW, FR	2' x 6'. Dark green leaves. Good bank stabilization
Baccharis pilularis 'Pigeon Point' / Dwarf Coyote Brush	Shrub	LSW, FR	3' x 9'. Lighter green and faster than Twin Peaks.
Baccharis pilularis ssp. consanguinea / Chaparral Broom	Shrub	NSW, CT	6' x 5', upright variety
Berberis darwinii / Darwin's Barberry	Shrub	LSW	10' x 7', thorny
Berberis dictyota / Chaparral Barberry	Shrub	LSW	Use only male plant
Berberis fremontii / Fremont Barberry	Shrub	LSW	8' x 8'
Berberis mentorensis / Mentor Barberry	Shrub	LSW	Naturalizes
Berberis nevinii / Nevin Barberry	Shrub	LSW, CT	10' x 12', yellow flowers
Berberis pinnata / Coast Barberry	Shrub	LSW	3' x 3', slow growing
Bougainvillea spectabilis / Bougainvillea	Shrub	LSW, FR	Thorny, not recommended along sidewalks, messy
Brachychiton acerifolius / Flame Tree	Tree	LSW	Brachychiton need deep soils
Brachychiton populneus / Bottle Tree	Tree	LSW	40' x 20', messy high maintenance
Brahea armata / Mexican Blue Palm	Palm	LSW, FR, CT	Slow to 40' x 20'
Brahea brandegeei / San Jose Hesper Palm	Palm	NSW, FR, CT	Slow to 40' x 15'
Brahea edulis / Guadalupe Palm	Palm	NSW, FR, CT	Slow to 30' x 15'
Caesalpinia gilliesii / Yellow Bird of Paradise	Shrub	LSW	8' x 6', fast growing
Caesalpinia spinosa / Tara Gum	Shrub	LSW	5' x 5', not hardy
Calliandra eriophylla / Fairy Duster	Shrub	LSW	3' x 3', native
Callistemon citrinus / Lemon Bottlebrush	Shrub/ Tree	LSW	Messy pollen drop, high maintenance
Callistemon rigidus / Stiff Bottlebrush	Shrub/ Tree	LSW	Messy pollen drop, high maintenance

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DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Callistemon viminalis / Weeping Bottlebrush	Shrub/ Tree	LSW	Messy pollen drop, high maintenance
Calocedrus decurrens / Incense Cedar	Tree	LSW, CT	No summer water at full maturity-30 years+
Calothamnus quadrifidus / Net Bush	Shrub	LSW	3' x 3', pine like needles, flowers messy
Cassia artemisioides / Feathery Cassia	Shrub	LSW	6' x 5', yellow flowers, low maintenance
Cassia odorata / Spreading Cassia	Tree	LSW	8' x 12', bright yellow flowers
Ceanothus 'Concha' / Ceanothus	Shrub	LSW	7' x 8', one of the best for gardens
Ceanothus 'Dark Star' / Ceanothus	Shrub	LSW	6' x 10'
Ceanothus griseus horizontalis / Carmel Creeper	GC	LSW	1.5'-2.5', spread 5'-15', light blue flowers, low maintenance
Ceanothus g. h. 'Yankee Point' / Carmel Creeper	GC	LSW	3' x 10' great ground cover
Ceanothus impressus 'Joyce Coulter' / Ceanothus	Shrub	LSW	5' x 12', one of the best bloomers
Ceanothus 'Ray Hartman' / Ceanothus	Shrub	LSW	To 20' x 20'
Centaurea gymnocarpa / Dusty Miller	Shrub	LSW	3' x 3', low maintenance
Ceratonia siliqua / Carob	Tree	NSW, FR	50' x 50'
Cercidium floridum / Blue Palo Verde	Tree	NSW, FR	35' x 35'
Cercidium microphyllum / Little Leaf Palo Verde	Tree	NSW, FR	20' x 18', twiggy branches
Cercis occidentalis / Western Redbud	Shrub	LSW	15' x 15'
Cercocarpus betuloides / Mountain Mahogany	Shrub	NSW	15' x 15'
Chamaelaucium uncinatum / Geraldton Waxflower	Shrub	LSW	8' x 6'
Carex sprissa / San Diego Sedge	Shrub	LSW	Low water, grass-like
Cistus corbariensis / White Rockrose	Shrub	LSW, FR	Cistus require good drainage.
Cistus x cyprus / Cyprus Sunrose	Shrub	LSW, FR	6' x 5', white flowers
Cistus incanus / Hairy Rockrose	Shrub	LSW, FR	4' x 4', pink flowers
Cistus purpureus / Purple Rockrose	Shrub	LSW, FR	4', spread 4-6', rose/purple flowers
Cistus salvifolius / Sageleaf Rockrose	Shrub	LSW, FR	3' x 3', white flowers
Cistus ladanifer / Gum Rockrose	Shrub	LSW, FR	3' x 3', white flowers
Cistus corsicus	Shrub	LSW, FR	3' x 6', mauve/purple flower
Comarostaphylis diversifolia / Summer Holly	Shrub	NSW	Needs summer water to establish
Convolvulus cneorum / Bush Morning Glory	Shrub	LSW	2' x 4', rapid growth
Convolvulus sabatius / Ground Morning Glory	Shrub	LSW	12" x 3', blue flower
Coprosma kirkii / Creeping Mirror Plant	Shrub/ GC	LSW, CT	Tolerates saline soil, subject to dieback after 3-4 years
Cordyline indivisa / Blue Dracaena	Tree	LSW, CT	25' x 10', reddish sword-like leaves
Cotinus coggygria / Smoke Tree	Tree	LSW	15' x 15', dark purple foliage
Cotoneaster congestus / Pyrenees Cotoneaster	Shrub	LSW	12" x 3', red berries
Cotoneaster horizontalis / Rock Cotoneaster	Shrub	LSW	3' x 15', red berries
Crassula arborescens / Silver Dollar Plant	Succulent	NSW, FR	Pink & white flowers
Crassula ovata (C. argentea) / Jade Plant	Succulent	NSW, FR	6' x 3', pink & white flowers
Cupressus forbesii / Tecate Cypress	Tree	NSW, CT	15' x 8', evergreen
Cupressus sempervirens / Italian Cypress	Tree	NSW	60' x 10'
Dalea spinosa / Smoke Tree	Tree	NSW	Tolerates inland heat

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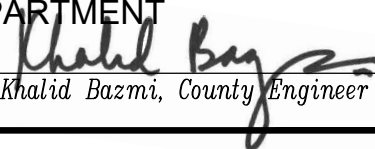
DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Dasylium quadrangulatum (D. longissima) / Mexican Grass Tree	Shrub	NSW, FR	Needs well drained soils.
Dasylium wheeleri / Desert Spoon	Shrub	NSW, FR	Needs well drained soils.
Delosperma 'Alba' / White Trailing Iceplant	GC	LSW, FR	Good ground and bank cover
Dendromecon harfordii / Island Bush Poppy	Shrub	LSW	Needs good drainage, short lived
Dietes bicolor / Fortnight Lily	Shrub	LSW	3' x 3', pale yellow flower
Dietes iridioides (D. vegeta) / African Iris	Shrub	LSW, CT	4' x 4', whitish flowers
Dodonaea viscosa / Hopseed Bush	Shrub	LSW, CT	15' x 15', hardy evergreen
Echeveria elegans / Hens and Chicks	Succulent	LSW	12" x 12", pink flowers
Echium candicans (E. fastuosum) / Pride of Madeira	Shrub	LSW	Good for coastal plantings
Elaeagnus pungens / Silverberry	Shrub	LSW	Tolerates heat and wind
Encelia californica / Bush Sunflower	Perennial	NSW	Cut back after spring bloom
Encelia farinosa / Incienso	Perennial	NSW	3' x 3', yellow flowers
Eriobotrya japonica / Loquat	Tree	LSW	Needs good drainage
Eriobotrya deflexa / Bronze Loquat	Tree	LSW	20' x 15'
Eriogonum arborescens / Santa Cruz Island Buckwheat	Shrub	NSW	Hydro-seeding, naturalize on slopes
Eriogonum crocatum / Saffron Buckwheat	Shrub	NSW	3' x 3'
Eriogonum fasciculatum / California Buckwheat	Shrub	NSW	3' x 3', good erosion control
Eriogonum giganteum / St. Catherine's Lace	Shrub	NSW	3'-4', spread 3-4', pink flowers
Eriogonum grande rubescens / Red Buckwheat	Shrub	NSW	12" x 3' mounds, pink flowers
Eriogonum umbellatum / Sulfur Flower	Shrub	NSW	12" x 3' yellow flowers
Eriophyllum confertiflorum / Golden Yarrow	Perennial	LSW, CT	Naturalizes
Eriophyllum nevinii / Catalina Silver Lace	Perennial	LSW, CT	Naturalizes
Escallonia bifida / White Escallonia	Shrub	LSW	12' x 15', white flowers
Escallonia laevis / Pink Escallonia	Shrub	LSW	20' x 15'
Escallonia x exoniensis 'Fradesi'	Shrub	LSW	6' x 6'
Eschscholzia californica / California Poppy	Perennial	LSW	12" x 12", sandy, loamy soil, California state flower
Eucalyptus citriodora / Lemon Scented Gum	Tree	LSW, CT	50' x 35'
Eucalyptus cladocalyx / Sugar Gum	Tree	LSW, CT	40' x 20', messy high maintenance
Eucalyptus ficifolia / Red Flowering Gum	Tree	LSW	40' x 40', showy
Eucalyptus leucoxylon / White ironbark	Tree	LSW, CT	50' x 35'
Eucalyptus nicholii / Nichol's Willow-Leafed Peppermint	Tree	LSW, CT	40' x 30', weeping
Eucalyptus polyanthemus / Silver Dollar Gum	Tree	LSW, CT	60' x 40'
Eucalyptus rudis / Flooded Gum	Tree	LSW, CT	45' x 35'
Eucalyptus sideroxylon / Red Ironbark	Tree	LSW	80' x 50'
Eucalyptus viminalis / Manna Gum	Tree	LSW	100' x 40', shedding bark
Fallugia paradoxa / Apache Plume	Shrub	LSW	4' x 4', eco friendly
Feijoa sellowiana / Pineapple guava	Shrub/ Sm. Tree	LSW	15' x 15' pinkish flowers
Festuca californica / California Fescue	Perennial Grass	LSW	Flower stalks Late Spring Early Summer
Festuca glauca / Common Blue Fescue	Perennial Grass	LSW	10" x 10", blue-green grass

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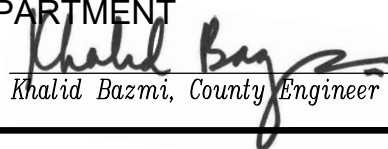
DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Festuca glauca 'Elijah Blue' / Dwarf Blue Fescue	Perennial Grass	LSW	10" x 10", blue-green grass
Fremontodendron californicum / Common Flannel Bush	Shrub	NSW	Fremontodendron need excellent drainage
Fremontodendron mexicanum / Southern Flannel Bush	Shrub	NSW	10' x 15', yellow flowers
Fremontodendron hybrids "California Glory', 'Pacific Sunset', 'San Gabriel'	Shrub	NSW	Cross between F. californica and F. mexicana
Galvezia speciosa / Island Bush Snapdragon	Shrub	LSW, CT	5' x 10', red flowers
Garrya elliptica / Coast Silktassel	Shrub	LSW	10' x 10'
Garrya fremontii / Fremont Silktassel	Shrub	LSW	Flowering shrub, native
Gazania hybrids / South African Daisy	GC	LSW, FR	12" clumps
Gazania rigens leucolaena / Trailing Gazania	GC	LSW	Spreading
Geijera parviflora / Australian Willow	Tree	LSW	35' x 20'
Grevillea banksii / NCN	Shrub	LSW	9' x 6', red flowers
Grevillea 'Canberra' / NCN	Shrub	LSW	12" x 15' red flowers
Grevillea lanigera / Woolly Grevillea	Shrub	LSW	5' x 5', red/brown flowers
Grevillea 'Noellii' / NCN	Shrub	LSW	4' x 5', pink/white flowers
Grevillea robusta / Silk Oak	Tree	LSW	50' x 40', brittle branches
Grevillea rosmarinifolia / Rosemary Grevillea	Shrub	LSW	4' x 4', reddish flowers
Grevillea thelemanniana / Hummingbird Bush	Shrub	LSW	6' x 6', red flower
Hakea laurina / Pincushion Tree	Shrub/ Tree	LSW	25' x 30', round crimson pincushions stuck with golden pins
Hakea suaveolens / Sweet Hakea	Shrub	LSW	20' x 15'
x Halimlocistus sahuicii / Sahuc Rockrose	Shrub	NSW	White flowers with prominent yellow stamens
Helianthemum nummularium / Sunrose	Shrub	LSW, CT	12" x 18", hardy perennial
Helianthemum scoparium / Rushrose	Shrub	LSW, CT	Best along coast
Hesperaloe parviflora / Red Yucca	Shrub	LSW, FR	3' x 4' low maintenance
Heteromeles arbutifolia / Toyon	Shrub/ Tree	LSW, FR, CT	8' x 5', red berries
Heuchera sanguinea / Coral Bells	GC	LSW	OC Native
Hypericum beanii / St. John's Wort	Shrub	LSW	Drought tolerant on coast
Hyptis emoryi / Desert Lavender	Shrub	NSW	Needs good drainage
Isomeris arborea / Bladder Pod	Shrub	LSW	Good in desert climate
Iva hayesiana / San Diego Marsh-Elder	Shrub		2' x 6' fast growing
Juglans californica / California Black Walnut	Tree	LSW	30' x 20'
Juglans c. hindsii / California Black Walnut	Tree	LSW	Used as commercial rootstock for English Walnut
Juniperus spp./Junipers	G.C Shrub, tree	LSW, CT	Many species and varieties, dieback concerns
Koelreuteria paniculata/Golden Rain Tree	Tree	LSW, CT	Showy yellow flowers
Lagerstroemia indica / Crape Myrtle	Tree	LSW, CT	Subject to mildew along coast. Several varieties
Lampranthus aurantiacus / Bush Iceplant	GC	LSW, CT	Not recommended on steep slopes
Lampranthus filicaulis / Redondo Creeper	GC	LSW, CT	2' x 2', pink violet/lavender flower

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Lampranthus spectabilis / Trailing iceplant	GC	LSW, CT	12" x 2'
Lantana camara / Lantana	Shrub	LSW	Water deeply but infrequently
Lantana montevidensis / Trailing Lantana	Shrub	LSW, CT	2' x 10', purple flowers
Lavandula angustifolia / English Lavender	Shrub	LSW, FR	2' x 2', blue-purple flowers
Lavandula dentata / French Lavendar	Shrub	LSW, CT	Long blooming season
Lavandula stoechas / Spanish Lavender	Shrub	LSW, FR	3' x 3' with bloom, dark purple flowers
Lavandula vera / Lavender	Shrub	LSW, CT	2' x 2', purple flowers
Lavatera assurgentiflora / Tree Mallow	Shrub	LSW	8' x 12', short-lived
Leptodactylon californicum / Prickly Phlox	Shrub	LSW	1-3', spread 1-3', pink flowers
Leptospermum laevigatum / Australian Tea Tree	Tree	LSW	30' x 30', small white flowers
Leptospermum scoparium / New Zealand Tea Tree	Shrub	LSW	Good drainage required, invasive
Leucophyllum frutescens / Texas Ranger	Shrub	LSW	Shorter lived in cultivation
Leymus condensatus / Giant Wild Rye	Shrub	LSW	Silver/gray foliage
Limonium perezii / Sea Lavender	Shrub	LSW, FR, CT	3' x 3', different color flowers
Lithocarpus densiflorus / Tanbark Oak	Tree	LSW	Good near coast
Lonicera japonica / Common Honeysuckle	GC	LSW, CT	Can be invasive
Lupinus arboreus / Lupine	Shrub	NSW	Needs well drained soils.
Lupinus macrocarpus densiflorus / Lupine	Shrub	LSW	Short lived, best along coast
Lupinus nanus / Sky Lupine	Shrub	NSW	Annual purple/blue flower
Lyonothamnus floribundus asplenifolius / Fernleaf Catalina Ironwood	Tree	LSW	Needs good drainage, Red peeling bark
Malephora lutea / Trailing Iceplant	GC	LSW	Becomes difficult to control
Maytenus boaria / Mayten Tree	Tree	LSW, CT	Best along coast
Melaleuca armillaris / Drooping Melaleuca	Shrub	LSW, CT	Melaleuca excellent along seacoast.
Melaleuca decussata / Lilac Melaleuca	Shrub	LSW, CT	20' x 20', light lavender flowers
Melaleuca elliptica / Granite Bottlebrush	Shrub	LSW, CT	16' x 15', reddish flowers
Melaleuca ericifolia / Heath Melaleuca	Shrub	LSW, CT	30 x 15', messy
Melaleuca linarifolia / Flaxleaf Paperbark	Tree	LSW, CT	30' x 20'
Melaleuca nesophila / Pink Melaleuca	Tree	LSW, CT	20' x 12' mauve flowers. Good near coast
Melaleuca quinquenervia / Cajeput Tree	Tree	LSW, CT	40' x 25', white flowers
Melaleuca styphelioides / Black Tea Tree	Tree	LSW	40' x 20', white flowers
Metrosideros excelsus / New Zealand Christmas Tree	Shrub/ Tree	LSW, CT	30' x 30' rounded red flowers
Mimulus aurantiacus / Monkey Flower	Perennial		3' x 3', orange flower
Miscanthus transmorrisonensis / Evergreen Miscanthus	Grass	LSW	6' x 4', fast growing
Muhlenbergia capillaris 'Regal Mist' / Pink Muhly	Grass	LSW	4' x 4', large, purplish inflorescences, up to 12 in.
Muhlenbergia rigens / Deer Grass	Grass	LSW	3' x 3', sharp leaves
Muhlenbergia rigida 'Nashville' / Purple Muhly	Grass	LSW	3' x 3'
Myrica californica / Pacific Wax Myrtle	Shrub		15' x 15'
Myoporum parvifolium 'prostrata'	GC	LSW, FR	12" x 9' white flower. Resistant to thrips.

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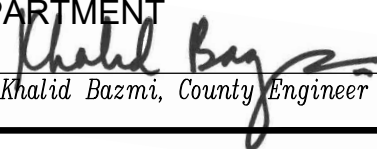
DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Myrtus communis / Common Myrtle	Shrub	LSW, CT	5' x 4', white flowers
Nasella lepida / Foothill Needle Grass	Grass	NSW, FR	Perennial
Nasella pulchra / Purple Needle Grass	Grass	NSW, FR	Perennial
Nasella tenuissima (Stipa) / Mexican Feather Grass	Grass	LSW	2' x 2', native bunch grass
Nerium oleander / Oleander	Shrub	LSW, CT	Subject to leaf gall in large groupings. Poisonous
Nolina longifolia / Mexican Grass Tree	Shrub	LSW	10' x 6', white flowers
Nolina parryi /NCN	Shrub	LSW	8' x 4' , serrated leaves
Olea europaea 'Swan Hill' / Fruitless Olive	Tree	LSW	Needs good drainage
Opuntia littoralis / Prickly Pear	Cacti	NSW, FR	Native, cactus thorns keep away from sidewalks
Osmanthus fragrans / Sweet Olive	Shrub	LSW, CT	10' x 6', white flowers
Parkinsonia aculeata / Mexican Palo Verde	Tree	NSW	15' x 15', yellow flowers
Pennisetum messiacum / Red Bunny Tails	Grass	LSW	3' x 3', pink flowers, annual
Pennisetum orientale / Fountain Grass	Grass	LSW	Cut back to ground in winter.
Pennisetum setaceum 'Red Riding Hood' / Dwarf Purple Fountain Grass	Grass	LSW	Cut back to ground in winter. Seldom self sowing
Pennisetum setaceum 'Rubrum' / Purple Fountain Grass	Grass	LSW	Cut back to ground in winter. Seldom self sowing
Penstemon heterophyllus 'Margarita' / Penstemon	Shrub	LSW	Sky blue flowers
Penstemon spectabilis / Royal Beard Tongue	Shrub	LSW	4' x 3', Rose/purple flowers
Phormium tenax / New Zealand Flax	Shrub	NSW, CT	10' x 6', red flowers
Photinia x fraseri / Photinia	Shrub	LSW	15' x 15'
Photinia serratifolia (P.serrulata) / Chinese Photinia	Shrub	LSW	40' x 30', white flower, mildew on coast
Phyla nodiflora / Lippia	GC	LSW	12" x 12", purple flowers
Pinus brutia / Calabrian Pine	Tree	LSW, CT	80' x 25', thrives in heat, wind, poor soil
Pinus canariensis / Canary Island Pine	Tree	LSW	80' x 30', needs good drainage
Pinus eldarica / Mondell Pine	Tree	LSW	80' x 30', good in desert
Pinus halepensis / Aleppo Pine	Tree	NSW	60' x 40', low maintenance
Pinus pinea / Italian Stone Pine	Tree	NSW	80' x 60', heat tolerant
Pinus torreyana / Torrey Pine	Tree	LSW, CT	60' x 40', native to San Diego coast
Pistacia atlantica / Mt. Atlas Pistache	Tree	LSW, CT	Pistacia need deep well drained soil
Pistacia chinensis / Chinese Pistache	Tree	LSW, CT	35' x 35'
Pittosporum crassifolium / NCN	Shrub	LSW	Tolerates seaside conditions
Pittosporum phillyreoides / Willow Pittosporum	Tree	LSW, CT	20' x 15', weeping appearance
Pittosporum rhombifolia / Queensland Pittosporum	Shrub/ Tree	LSW	35' x 35'
Pittosporum t. 'Crème de Mint' / Variegated Dwarf Tobira	Shrub	LSW	3' x 3', does not look good sheared.
Pittosporum t. 'Variegata' / Variegated Tobira	Shrub	LSW	Does not look good sheared.

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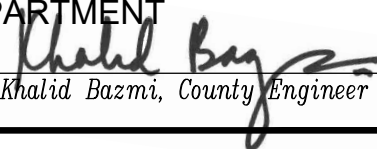
DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Pittosporum t. 'Wheeler's Dwarf' / Wheeler's Dwarf Tobira	Shrub	LSW	Does not look good sheared.-
Pittosporum tenuifolium 'Silver Sheen' /NCN	Shrub	LSW	16' x 8'
Pittosporum viridifolium / Cape Pittosporum	Shrub/ Tree	LSW	25' x 25'
Platanus mexicana / Mexican Sycamore	Tree	LSW, FR, CT	Riparian area, open branches
Platanus racemosa / California Sycamore	Tree	LSW, FR, CT	Native, riparian area
Plumbago auriculata / Cape Plumbago	Shrub	LSW, CT	Needs good drainage
Portulacaria afra / Elephant's Food	Shrub	LSW, FR, CT	6' x 4', pale pink flowers
Prunus caroliniana / Carolina Laurel Cherry	Shrub	LSW	36' x 20', cream/white flowers
Prunus ilicifolia / Hollyleaf Cherry	Shrub	NSW	Takes extreme drought
Prunus lyonii / Catalina Cherry	Shrub/ Tree	NSW	45' x 30', low maintenance
Psidium littorale / Strawberry Guava	Shrub	LSW	20' x 15'
Pterocarya stenoptera / Chinese Wingnut	Tree	LSW	Good in compacted soil / high traffic areas
Pyracantha spp. / Firethorn	Shrub	LSW	12' x 12', red berries. Several hybrids to choose from.
Pyrostegia venusta (P. ignea) / Flame Vine	Vine	LSW, CT	12" x 10', orange flowers. Thrives in heat
Quercus agrifolia / Coast Live Oak	Tree	NSW, CT	All Quercus require good drainage. 70' x 70'
Quercus douglasi / Blue Oak	Tree	NSW	50' x 40'
Quercus engelmannii / Mesa oak	Tree	NSW, CT	50' x 50'
Quercus ilex / Holly Oak	Tree	LSW, FR	Clay, loam, sandy soils
Quercus kelloggii / California Black Oak	Tree	LSW	Native, tolerates rich acidic soils 50', deciduous
Quercus lobata / Valley Oak	Tree	NSW, CT	35' x 35', deciduous
Quercus suber / Cork Oak	Tree	NSW, CT	60' x 50'
Quercus virginiana / Southern Live Oak	Tree	LSW, FR	80' x 160'. Best oak for lawns
Rhamnus alaternus / Italian Buckthorn	Shrub	LSW	Require good drainage
Rhamnus californica / Coffeeberry	Shrub	LSW, CT	Require good drainage
Rhamnus Crocea / Redberry	Shrub		4'-10', drought tollerant
Rhapheolipis indica 'Ballerina' / Indian Hawthorn	Shrub	LSW, FR	3' x 3', pink flowers
Rhapheolipis indica 'Clara' / Indian Hawthorn	Shrub	LSW, FR	4'-5', spread 4'-5', white
Rhapheolipis indica 'Pinkie' / Indian Hawthorn	Shrub	LSW, FR	5' x 6', pink flowers
Rhus integrifolia / Lemonade Berry	Shrub	NSW	8' x 20', lilac flowers
Rhus lancea / African Sumac	Tree	LSW	25' x 25', greenish-white flowers
Rhus laurina / Laurel Sumac	Shrub	NSW	18' x 18', privacy hedge
Rhus ovata / Sugar Bush	Shrub	NSW	20' x 20', attracts wildlife
Ribes indecorum / White Flowering Currant	Shrub	LSW	All Ribes prefer shade
Ribes sanguineum / Red Flowering Currant	Shrub	LSW	12' x 12', pink flowers
Ribes speciosum / Fuchsia-Flowered Currant	Shrub	LSW	12' x 12', red flowers
Ribes viburnifolium / Evergreen Currant	Shrub	LSW	3' x 8', purple/pink flowers

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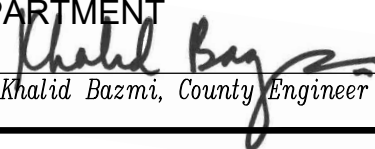
DROUGHT TOLERANT PLANTS

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BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Robinia x ambigua / Locust	Tree	LSW	Robinia have invasive roots, naturalize easily
Romneya coulteri / Matilija Poppy	Shrub	NSW	8' x 6', showy white flowers
Rosa californica / California Wild Rose	Shrub	LSW	Native, up to 20' tall
Rosa banksiae / Lady Banks' Rose	Shrub	LSW	Disease resistant
Rosa 'Flower Carpet' / Carpet Rose	Shrub	LSW	Prune at end of dormant season
Rosmarinus officinalis 'Arp' / Rosemary	Shrub	LSW	5' x 3'
Rosmarinus officinalis 'Huntington Carpet' / Rosemary	Shrub	LSW	2' x 8', fragrant
Rosmarinus officinalis 'Prostratus' / Dwarf Rosemary	Shrub	LSW, FR	3' x 6', attracts bees
Rosmarinus officinalis 'Tuscan Blue' / Rosemary	GC	LSW	6' x 4', attracts birds
Salvia apiana / White Sage	Shrub	NSW	Salvias are highly flammable
Salvia clevelandii / California Blue Sage	Shrub	NSW	4' x 8', blue flowers
Salvia greggii / Autumn Sage	Shrub	LSW, FR	3' x 3', perennial
Salvia leucantha / Mexican Bush Sage	Shrub	LSW	Cut back hard before Spring.
Salvia leucophylla / Purple Sage	Shrub	NSW, CT	5' x 8', erosion control
Salvia sonomensis / Creeping Sage	GC	LSW	3' x 3', lavender flowers
Sambucus mexicana / Blue Elderberry	Shrub/ Tree	LSW	25' x 25', cream flowers
Santolina chamaecyparissus / Lavender Cotton	Shrub	LSW, CT	3' x 3', yellow flowers, deer tolerant
Santolina virens / Green Lavender Cotton	Shrub	LSW, FR	2' x 3', creamy yellow flowers
Schinus molle / California Pepper	Tree	LSW, CT	40' x 40',
Sedum album / Green Stonecrop	Succulent	LSW, FR	Well-drained soil
Sedum confusum / Stonecrop	Succulent	LSW, FR	12" x 12", showy flower
Sedum dendroideum / Stonecrop	Succulent	NSW, FR	3' x 4', easy care
Sedum rubrotinctum / Pork and Beans	Succulent	LSW, FR	12" x 12"
Sedum spathulifolium / Stonecrop	Succulent	NSW	California native
Senecio cineraria / Dusty Miller	Shrub	LSW	3' x 3', yellow flowers
Senecio mandraliscae / NCN	Succulent	NSW	2' x 3', low maintenance
Senecio serpens / NCN	Shrub	LSW	12" x 3', white flowers
Simmondsia chinensis / Jojoba	Shrub	LSW	6' x 10'
Solanum jasminoides / Potato Vine	vine	LSW, CT	15'-20' vining, light blue/white flowers
Stenocereus thurberi / Organ Pipe Cactus	Grass	LSW, FR	20' x 12'. Needs good drainage
Tagetes lemmonii / Bush Marigold	Shrub	LSW	Flowers winter/spring
Tecomaria capensis / Cape honeysuckle	Shrub	LSW	8' x 5', orange flowers. Heat, wind, salt air
Teucrium chamaedrys / Germander	GC	LSW, FR, CT	Lavender Flowers in Spring
Teucrium fruticans / Bush Germander	Shrub	LSW, CT	8' x 10', blue flowers
Trachycarpus fortunei / Windmill Palm	Tree	LSW, CT	
Trichostema lanatum / Woolly Blue Curls	Shrub	NSW	Needs good drainage
Tristania conferta / Brisbane Box	Tree	LSW, CT	40' x 30', reddish bark
Umbellularia californica / California Laurel	Tree	LSW	70' x 40', pale yellow flowers
Verbena spp. and hybrids / Verbena	GC	LSW, CT	2' x 2', hardy
Viburnum suspensum / Sandankwa	Shrub		Pinkish/Peer resistant white flowers
Viburnum tinus / Laurustinus	Shrub	LSW	Susceptible to pests.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

Revision: August 2018

STD. PLAN

1701

DROUGHT TOLERANT PLANTS

SHT. 11 OF 12

BOTANICAL / COMMON NAME	TYPE	QUALITIES	REMARKS
Vitex agnus-castus / Chaste Tree	Shrub	LSW, CT	15' x 15', purplish flowers
Washingtonia filifera / California Fan Palm	Tree	NSW, CT	50' x 15', hardy
Westringia fruticosa / Coast Rosemary	Shrub	LSW, FR	6' x 12', white flowers
Xylosma congestum / Shiny Xylosma	Shrub/ Tree	LSW, CT	20' x 15', low maintenance
Xylosma congestum 'Compacta' / Compact Shiny Xylosma	Shrub	LSW, FR	5' x 5', hedge
Yucca aloifolia / Spanish Bayonet	Shrub	LSW, FR	Sharp leaves
Yucca elephantipes / Giant Yucca	Shrub	NSW, FR	Sharp leaves. Well drained soil
Yucca filamentosa / Adam's Needle	Shrub	LSW, FR	Sharp leaves
Yucca flaccida 'Golden Sword' / Golden Sword Yucca	Shrub	LSW, FR	Sharp leaves
Yucca gloriosa / Spanish Dagger	Shrub	LSW, FR	Sharp leaves
Yucca recurvifolia (Y. pendula) / Yucca	Shrub	NSW, FR	Sharp leaves.
Yucca whipplei / Our Lord's Candle	Shrub	LSW, FR	Native
Zauschneria californica / California Fuchsia	Perennial	LSW	3' x 5', attracts hummingbirds
Zelkova serrata / Sawleaf Zelkova	Tree	LSW	60' x 70', Susceptible to Dutch Elm Disease
Ziziphus jujuba / Jujube	Tree	LSW, CT	Needs deep soils & deep watering

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

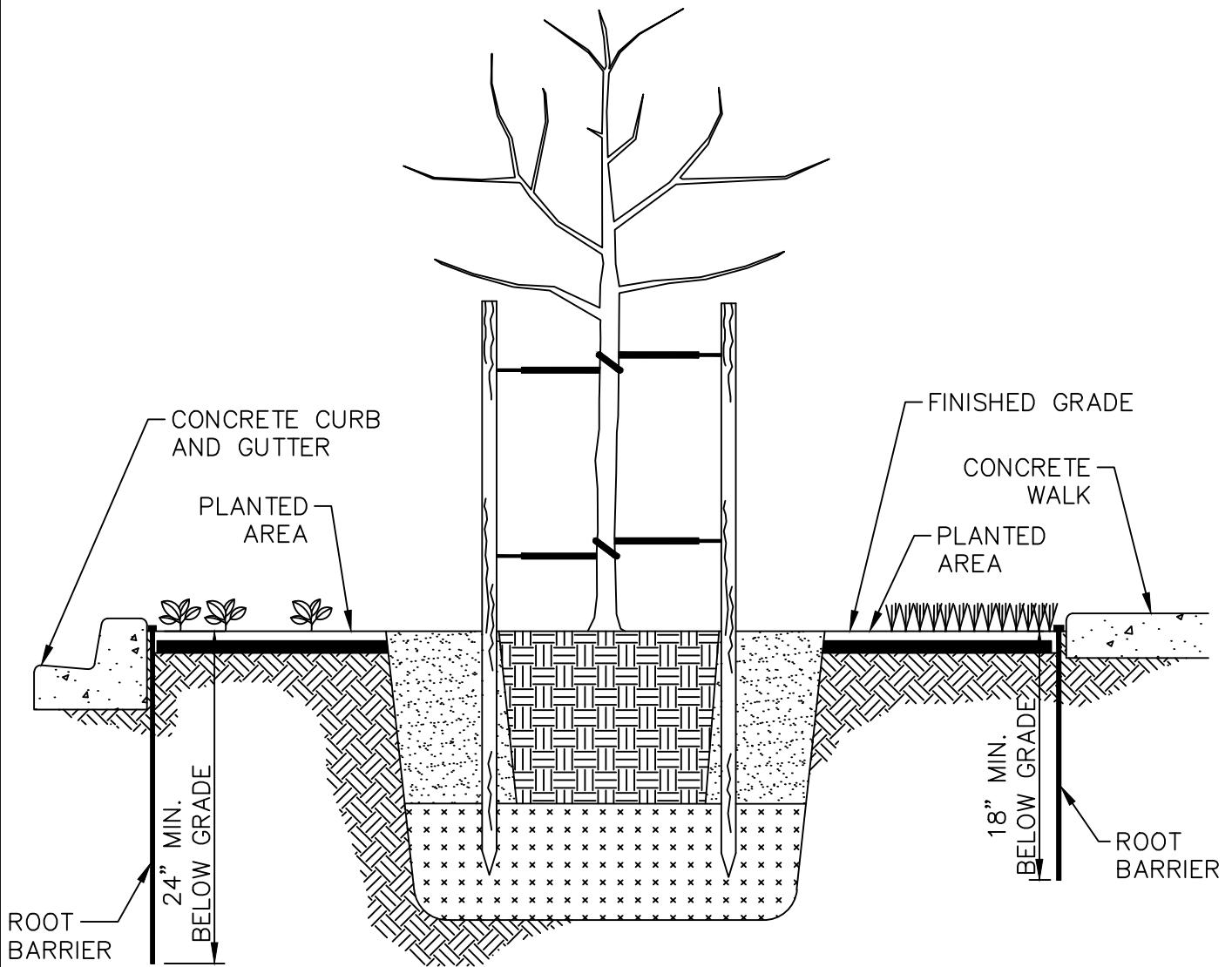
Revision: August 2018

STD. PLAN

1701

DROUGHT TOLERANT PLANTS

SHT. 12 OF 12



NOTES:

1. TOP OF ROOT CONTROL BARRIER MUST BE AT GRADE.
2. POSITION ROOT CONTROL BARRIER ADJACENT TO STRUCTURE.
3. RAISED ROOT DEFLECTORS MUST BE FACING PLANTED AREA.
4. PROVIDE A MIN. OF 12 INCHES OF ROOT BARRIER EACH SIDE OF TREE TRUNK.
5. TREE PLANTING AND STAKING SHALL BE PERFORMED IN ACCORDANCE WITH OCPW STANDARD PLAN 518-3-OC.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

Khalid Bazmi
 Khalid Bazmi, County Engineer

Revision: August 2018

STD. PLAN

1708

TREE ROOT BARRIER

SHT. 1 OF 2

NOTES:

I. TREE TRIMMING

PRIOR TO ROOT PRUNING, EACH TREE SHALL BE TRIMMED TO REDUCE ITS OVERALL SIZE BY ONE-THIRD (1/3) AND TO PROMOTE IMPROVED GROWTH. TRIMMING SHALL ALSO PROVIDE:

- A. REMOVAL OF ALL DEAD, DAMAGED, DISEASED, OR STRUCTURALLY DEFICIENT LIMBS;
- B. THINNING TO REDUCE INTERIOR WIND RESISTANCE;
- C. VERTICAL CLEARANCE OF 14.0 FEET OVER ROADWAYS AND 9.0 FEET OVER SIDEWALKS;
- D. VISUAL CLEARANCE AROUND ALL TRAFFIC CONTROL DEVICES AND SIGNS;
- E. AN OVERALL BALANCED APPEARANCE;
- F. TRIMMING SHALL BE DONE UNDER THE SUPERVISION OF A LICENSED ARBORIST IN ACCORDANCE WITH CURRENT ARBORIST STANDARDS.

II. ROOT PRUNING

ROOT PRUNING CUTS SHALL BE MADE IMMEDIATELY ADJACENT TO THE SIDEWALK AND SHALL BE 4 INCHES WIDE, 16 INCHES DEEP (MEASURED FROM THE TOP OF THE FINAL GRADE OF THE SIDEWALK) AND 16 INCHES LONG, CENTERED 8 INCHES EITHER SIDE OF THE CENTER OF THE TREE. THE BOTTOM 13 INCHES OF THE ROOT PRUNE CUT SHALL BE FILLED WITH PEA GRAVEL, TO PROMOTE DEEPER WATERING, WITH THE TOP 3 INCHES FILLED WITH NATIVE SOIL FREE FROM ROCKS OR OTHER MATERIALS THAT WOULD INTERFERE WITH LANDSCAPE MAINTENANCE TASKS. AT LEAST 18 MONTHS SHALL TRANSPIRE BEFORE ROOT PRUNING THE OPPOSITE SIDE OF THE TREE. IN GENERAL, ROOT PRUNING WOULD NOT BE PERFORMED ADJACENT TO THE CURB DUE TO THE NORMAL DEPTH OF THE CURB.

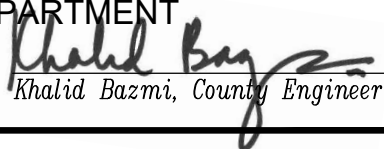
III. ROOT CONTROL BARRIER

BARRIER SHALL BE FABRICATED FROM A HIGH DENSITY, HIGH IMPACT PLASTIC, I.E. POLYSTYRENE, POLYETHYLENE, POLYVINYL CHLORIDE, (PVC), OR ACRYLONITRILE-BUTADIENE-STYRENE (ABS). THE INTERIOR SURFACE SHALL HAVE 1/2 INCH HIGH (MINIMUM) RAISED VERTICAL RIBS SPACES 6 INCHES TO 8 INCHES APART THE FULL DEPTH OF THE BARRIER AND SHALL BE EXPRESSLY DESIGNED FOR ROOT DEFLECTION.

BARRIER USED FOR ROOT PRUNING SHALL HAVE A MINIMUM DEPTH OF 12 INCHES WITH A MINIMUM THICKNESS OF 0.06 INCH. BARRIERS SHALL BE 16 FEET LONG IN ONE CONTINUOUS PIECE (PREFERRED) OR IN A COMBINATION OF PIECES SECURELY FASTENED WITH ADHESIVE AT LAP JOINT POINTS.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

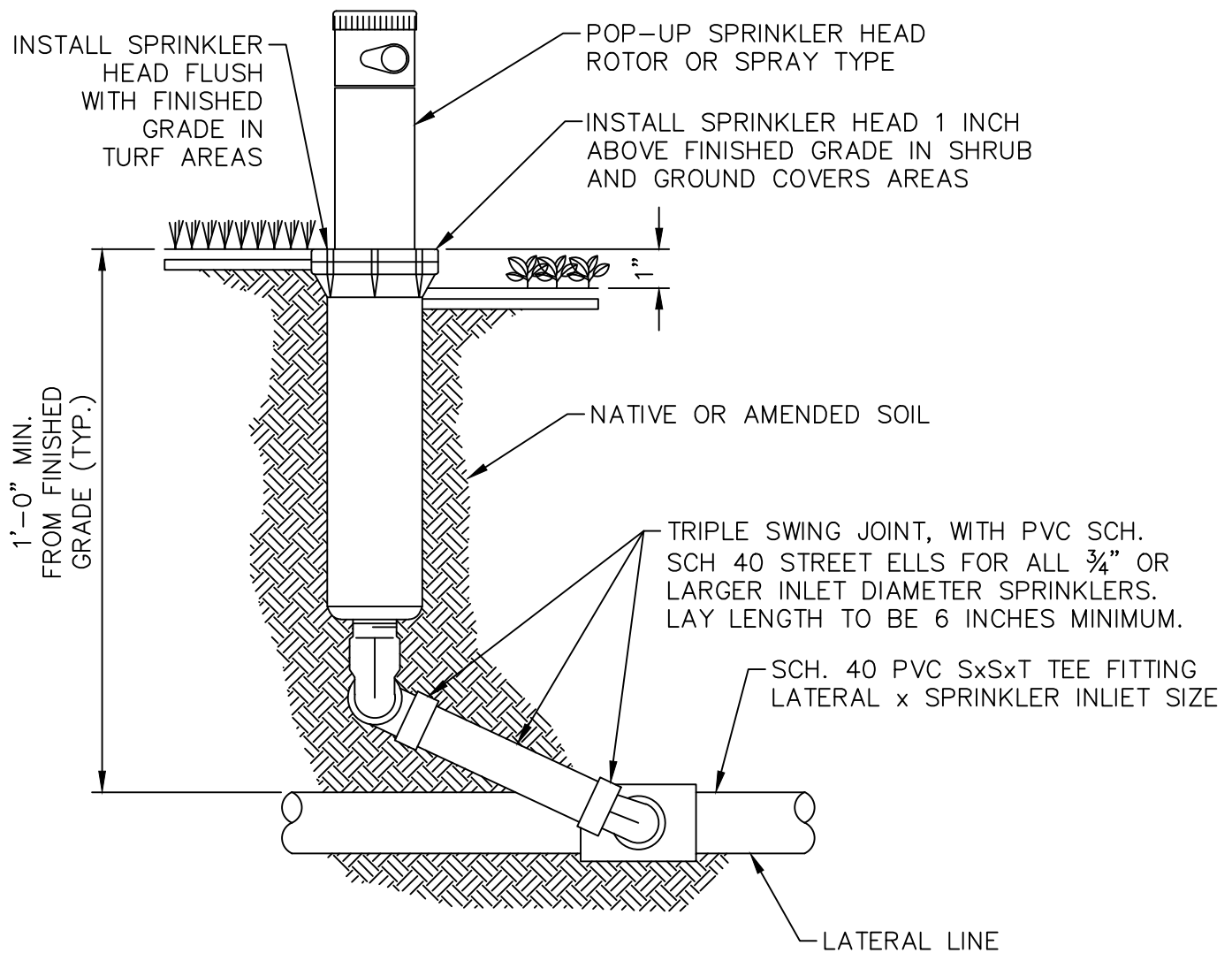
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STD. PLAN

1708

TREE ROOT BARRIER

SHT. 2 OF 2



NOTES:

1. INSTALL SPRINKLER HEADS 24 INCHES FROM PAVING EDGE
2. INSTALL SPRINKLER HEADS 3' FROM PAVING EDGE WHERE PERMISSIBLE BY THE COUNTY OF ORANGE WATER EFFICIENT LANDSCAPE ORDINANCE, SECTION 2.6(A)(1)(U).
3. INSTALL SPRINKLER HEADS PLUMB, ADJUST NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS OR BUILDINGS.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

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Khalid Bazmi, County Engineer

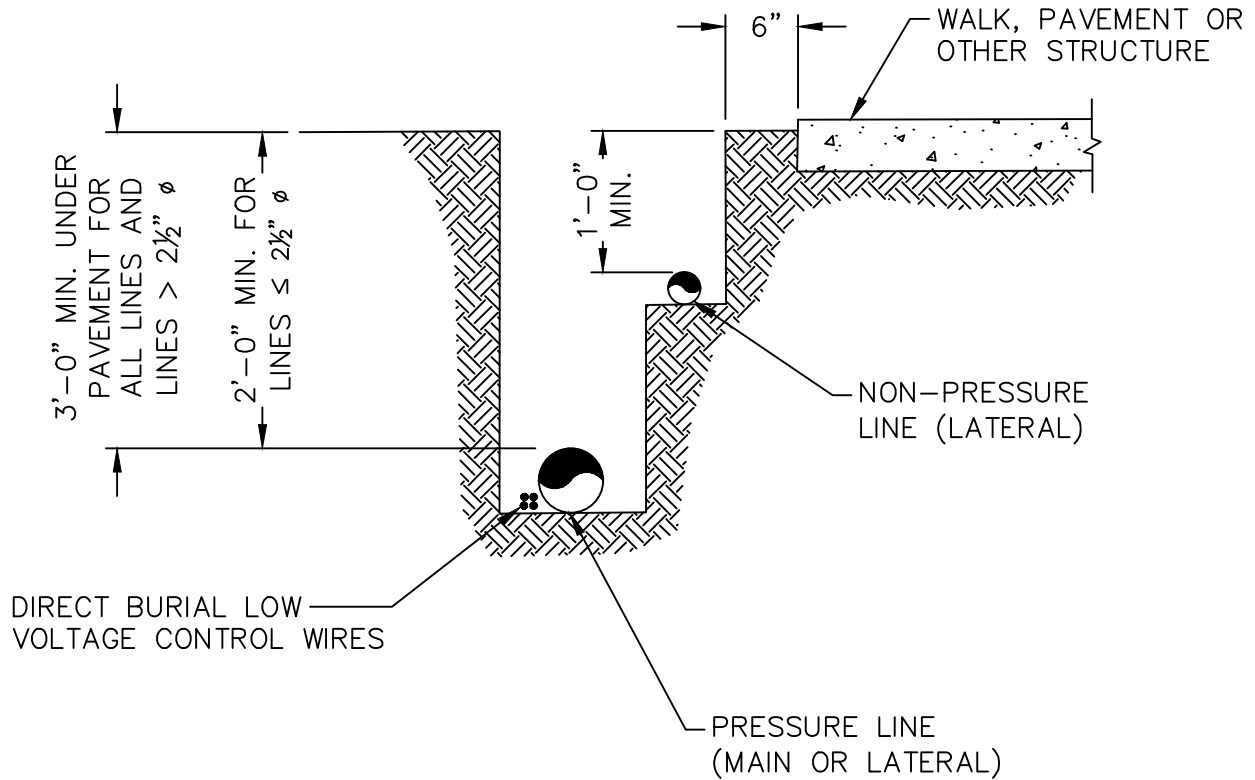
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1753

POP-UP SPRINKLER (6 INCH)

SHT. 1 OF 1



NOTES:

1. TRENCHING AND BACKFILLING SHALL BE PER GREENBOOK.
2. MINIMUM BACKFILL RELATIVE COMPACTION SHALL BE 90 PERCENT PER STANDARD PLAN 1801.
3. BUNDLE CONTROL WIRES TOGETHER AND TAPE TO PIPE AT 10 FOOT INTERVALS.
4. INSTALL IDENTIFICATION WARNING TAPE PER STANDARD PLAN 1602.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

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Khalid Bazmi, County Engineer

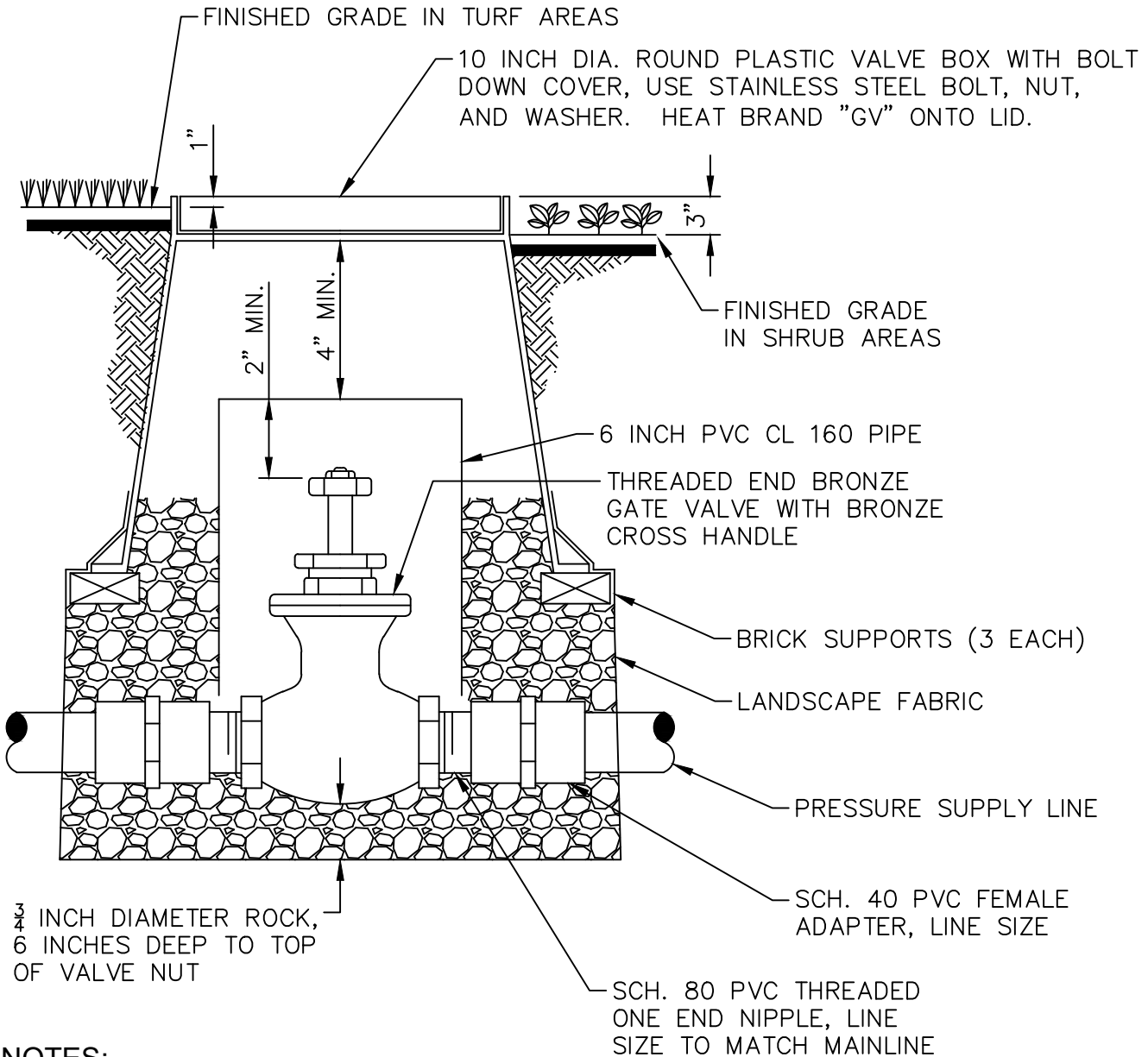
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STD. PLAN

1760

IRRIGATION LINE TRENCHING

SHT. 1 OF 1



NOTES:

1. INSTALL VALVE BOX AND PIPE EXTENSION AS REQUIRED TO ACHIEVE PROPER VALVE INSTALLATION AT MAIN LINE DEPTH.
2. WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.
3. RECYCLED WATER SYSTEMS SHALL CONFORM TO THE LATEST CALIFORNIA PLUMBING CODE CHAPTER 16, PART II.

GATE VALVE 2 INCHES AND SMALLER

SYMBOL ON PLAN



COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

Khalid Bazmi
Khalid Bazmi, County Engineer

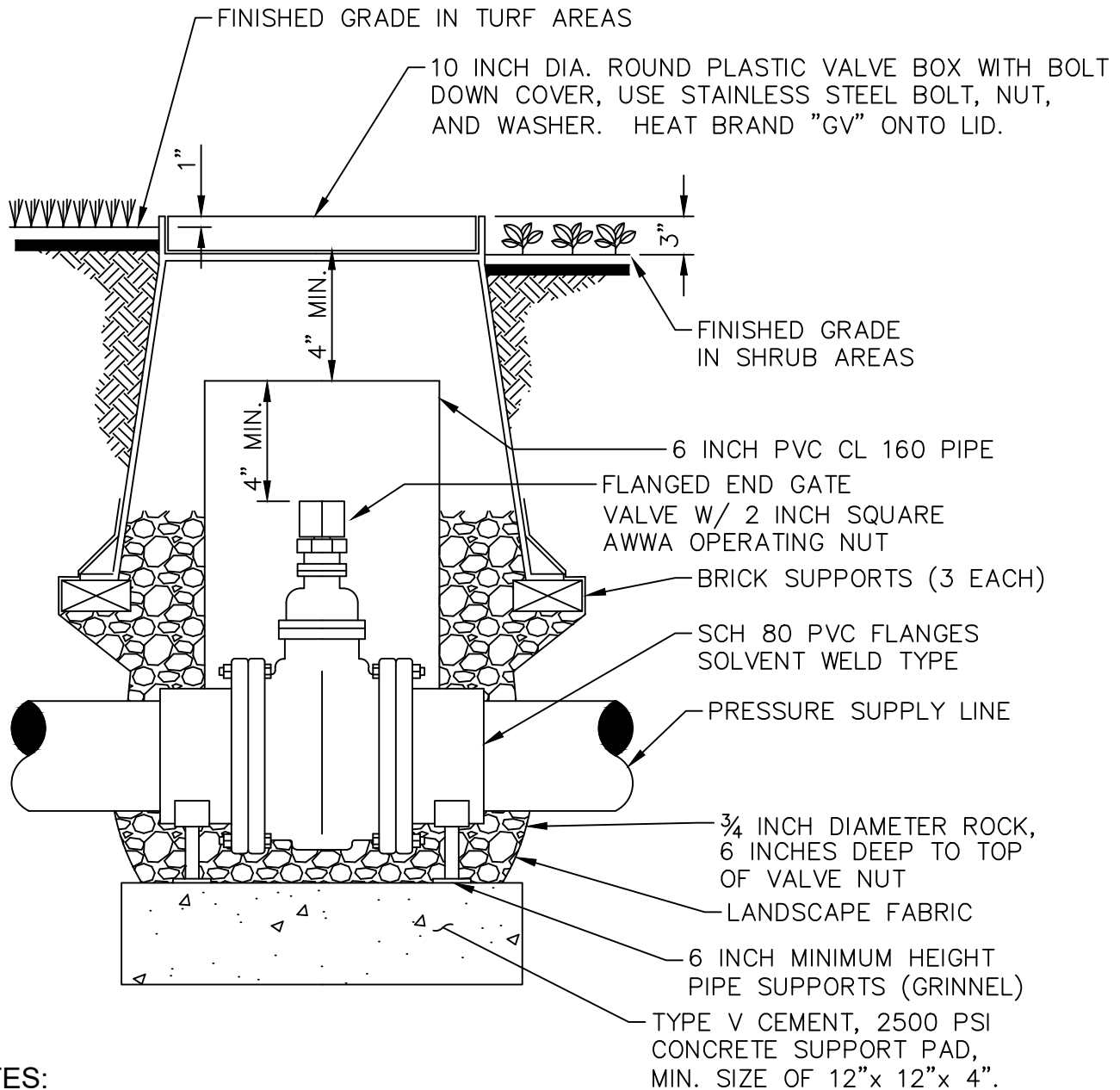
STD. PLAN

Revision: August 2018

1761

GATE VALVE

SHT. 1 OF 3



NOTES:

1. CONTRACTOR TO PROVIDE ONE 5 FOOT LONG TEE WRENCH WITH SQUARE NUT ADAPTER FOR THE OPERATION OF GATE VALVES
2. INSTALL VALVE BOX AND PIPE EXTENSION AS REQUIRED TO ACHIEVE PROPER VALVE INSTALLATION AT MAIN LINE DEPTH.
3. WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.
4. RECYCLED WATER SYSTEMS SHALL CONFORM TO THE LATEST CALIFORNIA PLUMBING CODE CHAPTER 16, PART II.

GATE VALVE 2 1/2 INCHES AND LARGER

SYMBOL ON PLAN



COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

Khalid Bazmi
Khalid Bazmi, County Engineer

STD. PLAN

1761

Revision: August 2018

GATE VALVE

SHT. 2 OF 3

GENERAL NOTES

1. VALVES UP TO 2 INCHES DIAMETER SHALL HAVE MALLEABLE IRON "TEE" HANDLES. VALVES LARGER THAN 2 INCHES SHALL HAVE SQUARE OPERATING NUTS.
2. PROVIDE TWO OPERATING KEYS TO VALVES BURIED 18 INCHES OR DEEPER.
3. ALL GATE VALVES AND ENCLOSURES SHALL BE LOCATED OUTSIDE THE DESIGNATED PLAYING FIELD (I.E., BALL DIAMOND, SOCCER, ETC.)
4. VALVE BOX SHALL BE ONE OF THE FOLLOWING CASES AS SPECIFIED ON PLANS

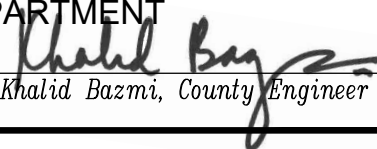
CASE 1: CONCRETE BOX WITH CONCRETE COVER

CASE 2: CONCRETE BOX WITH LOCKING CAST IRON COVER

CASE 3: PLASTIC BOX WITH LOCKING PLASTIC COVER

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

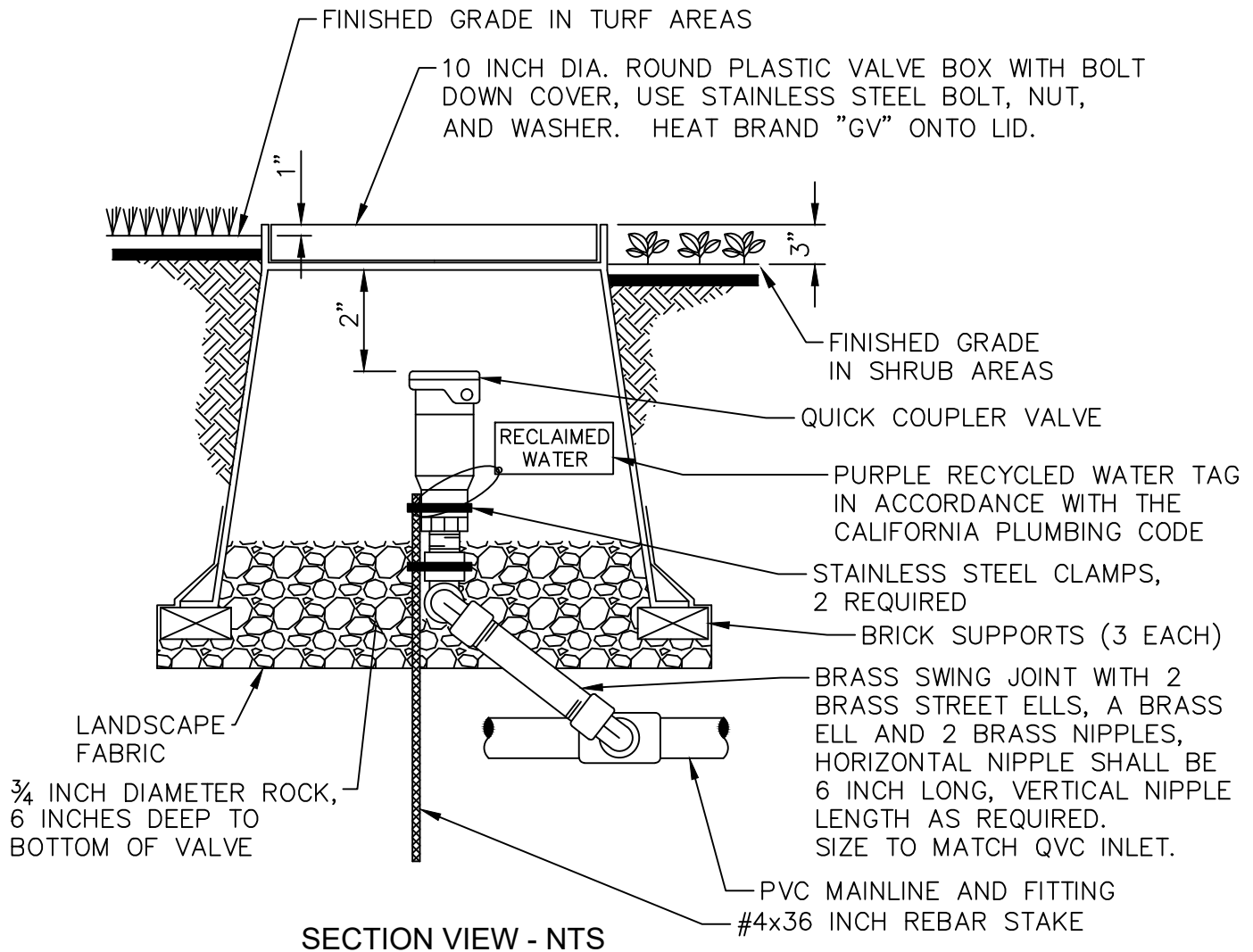
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GATE VALVE

STD. PLAN

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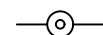
SHT. 3 OF 3



NOTES:

1. USE TEFLON TAPE ON ALL THREADED FITTINGS.
2. QUICK COUPLER KEY MUST CLEAR VALVE BOX.
3. WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.
4. RECYCLED WATER SYSTEMS SHALL CONFORM TO THE LATEST CALIFORNIA PLUMBING CODE CHAPTER 16, PART II

SYMBOL ON PLAN



COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved

Khalid Bazmi
Khalid Bazmi, County Engineer

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STD. PLAN

1762

QUICK COUPLER VALVE IN BOX

SHT. 1 OF 1

