

Corridor Shrub & Ground Cover Plantings

Secondary landscape plants for landscape corridors include shrubs, groundcovers, lawn, and lawn alternatives. These should be selected according to form, growth rate, texture, visual interest, and season interest, including color, flowers, and fragrance. Groundcovers are also to be selected based on compatibility with shrubs and trees, low maintenance, and erosion control. Lawn may be planted in planter strips. Lawn will also be planted in areas of high activity for maximum use potential. Alternatives to lawn may be planted as a lawn substitute for areas of low activity.



Figure 137- Streetscapes



Native perennial wildflower species may be planted in areas for seasonal enjoyment. Native species seeds (i.e., California poppy [*Eschscholzia californica*]) may be planted in a homogeneous batch or mixed with compatible clovers.

The following guidelines shall apply to shrubs and groundcover plantings:

- Shrubs may be planted from 1 gallon (50% of total) and 5 gallon (50% of total) containers. Groundcover may be planted from flats (at 12 inches o.c., typical) or one-gallon containers (at 4 feet o.c., typical). Low-growing shrubs planted as groundcover may be spaced further apart.
- Groundcover plants may range in mature heights from 6 inches to 2 feet.
- Drought tolerant species of shrubs and groundcovers are encouraged.
- Native species should be planted where transition with open space areas is desired.
- Shrub and groundcover species should conform to the water efficient landscape standards established by AB325 and calculations for the water use should be shown on plans.
- Slopes of 2:1 or greater will be planted with groundcover and secured with jute netting or another acceptance erosion control practice.
- Shrub planting areas should generally be located between back of walk and fences/walls. Shrub and/or groundcover planting between face of walks and back of curbs should be limited to areas too narrow to accommodate spray irrigation and/or lawn alternative or lawn plantings.

The following guidelines shall apply to lawn and lawn alternative:

- Lawn may be established from sod or hydroseeded; lawn alternative is to be hydroseeded.
- Water-efficient blends may be planted, such as dwarf fescue varieties.
- Lawn or lawn alternative may be planted at street intersections, including entrances into the plan area.
- Hydroseeded lawn or lawn alternative is to follow accepted weed-abatement procedures.
- Lawn or lawn alternative may be planted where parks or schools meet the landscape corridors.

The following guidelines shall apply to mulching:

- Mulch is to be spread over all planting areas (excluding lawn and lawn alternative areas) to decrease weed growth, retain moisture, and moderate soil temperature for root protection. Mulch should be ¾" to 1-1/2" diameter redwood, pine, or fir bark for highly visible areas, and other areas. Mulch is to be layered a minimum of 2 inches on all shrub and groundcover planting areas.

8.A.2. MEDIAN PLANTING CONCEPT

University Boulevard and 8th Street are the locations with medians within RUSP. The medians should have a formal planting of trees, shrubs and ground covers.

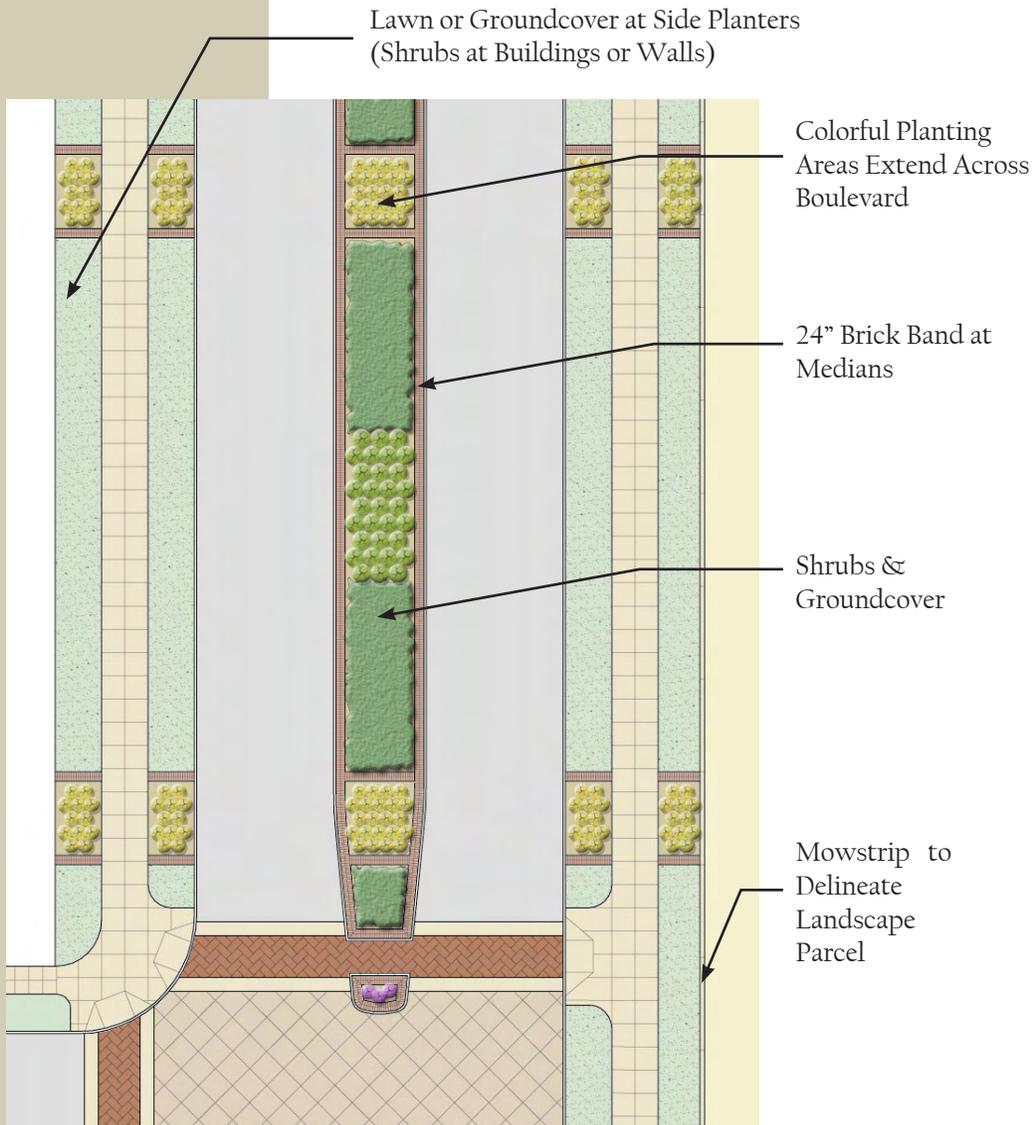


Figure 138 - Conceptual Streetscape Shrub Planting Concept

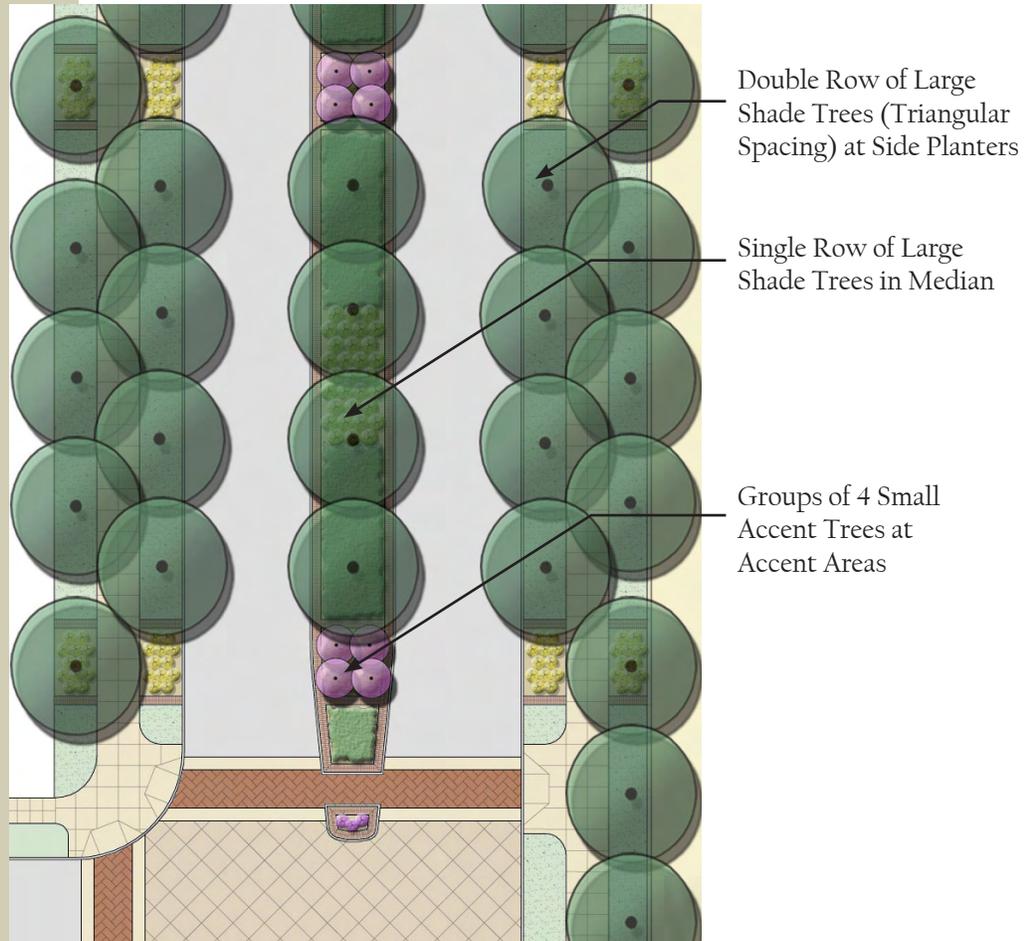


Figure 139 - Conceptual Streetscape Tree Planting Concept

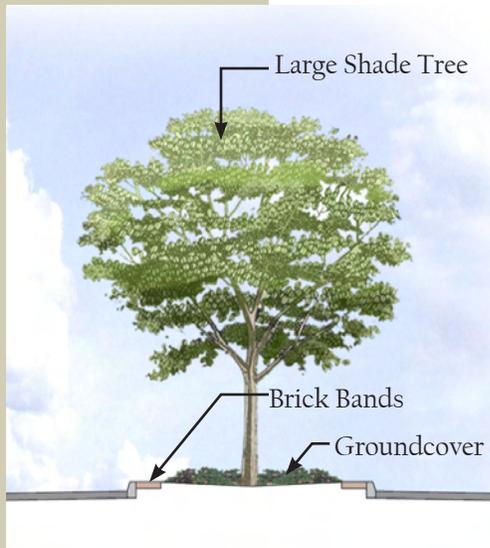


Figure 140 - Conceptual Median Section

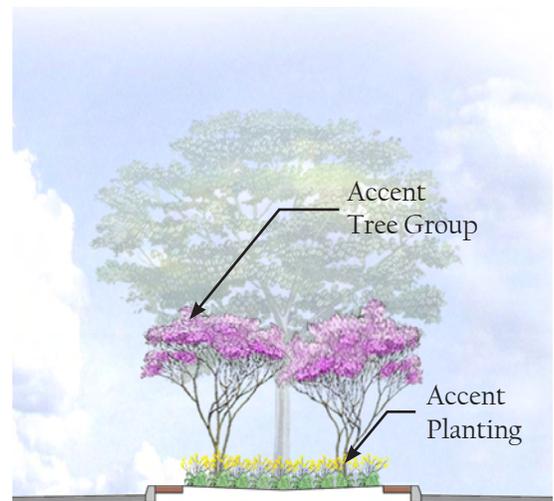


Figure 141 - Conceptual Median Section with Accent Trees and Shrubs

The following guidelines apply to median landscape planting:

- Trees are to be formally spaced at least 15 to 30 feet apart.
- Shrubs or groundcover plants should be spaced at 5 feet O.C. maximum; and should provide seasonal flowering or leaf color variation.
- A continuous 1'-2' wide paved edge should be located adjacent to the back of curb within the median planter to make it safe for maintenance personnel and to avoid irrigation over-spray into the roadway.

8.A.3. SECONDARY CORRIDOR PLANTING CONCEPT (LOCAL ROADWAYS)

The landscaping along the local roadways in RUSP is limited to the planter strip between the curb and walkway, landscape parcels and the front or side yard of the adjacent parcel (private).

Planter Strip: this area should be turf and trees. The trees should be selected and located based upon the plant matrix. Trees locations should be planned along with improvement plans of each parcel and defined on the tentative subdivision map.

Landscape Parcels: this area should be designed with the adjacent roadways and designed according to the adjacent land use and planting conditions. The conditions vary from open space to private yards and will need to be evaluated on a case by case basis.

Private Yard: this area should be designed by the homebuilder to meet the intent of these guidelines to have a consistent tree canopy along local roadways. The private yard landscape areas should be regulated by the Codes Covenants & Restrictions (CCR) established by the developer / builder of each neighborhood.

8.A.4. SPECIALIZED AREAS

8.A.4a. Roadways Adjacent to Internal Open Space

Where the public landscape along a roadway interfaces with the internal permanent open space sites there should be special consideration given to the planting selection and design. The manicured roadway landscape should be transitioned into the natural landscape within the open space. It is recommended that this transition happen along the back of walk using the paved edge of the walkway as the demarcation between these two distinct landscape types. Exceptions will be considered where other transitions make sense, such as multi-use trail heads or neighborhood entrances.

8.A.4b. Community and Neighborhood Entrances

Massings of plant materials at the Community entrances may serve as a backdrop for signage, while also creating screening between the residences and roadways. Accent trees and colorful annuals may be used to highlight this area as long as the square footage conforms to the water efficient landscape requirements.

Special consideration should be given to the height of the plant materials at entrances to preserve the sight lines at the intersections for both vehicles and pedestrians. The height of plants relative to directional signage and lighting should also be evaluated.

8.A.4c. Open Space Corridors

The plant materials within the open space corridors should be native plantings that re-establish indigenous trees, shrubs and ground covers. The plant matrix identifies some of these plantings options.

8.A.4d. Pedestrian Access Points

Pedestrian access points occur between residential neighborhoods and collector streets. These areas should provide a combination of seasonal color and year around interest. The plants should include flowering ornamental trees and shrub / ground cover plantings. Species should be selected to minimize the potential for overgrowth that would compromise the access and visual surveillance of the access points. These areas should also be embellished with stone pilasters, an enhanced pedestrian walk and site lighting.

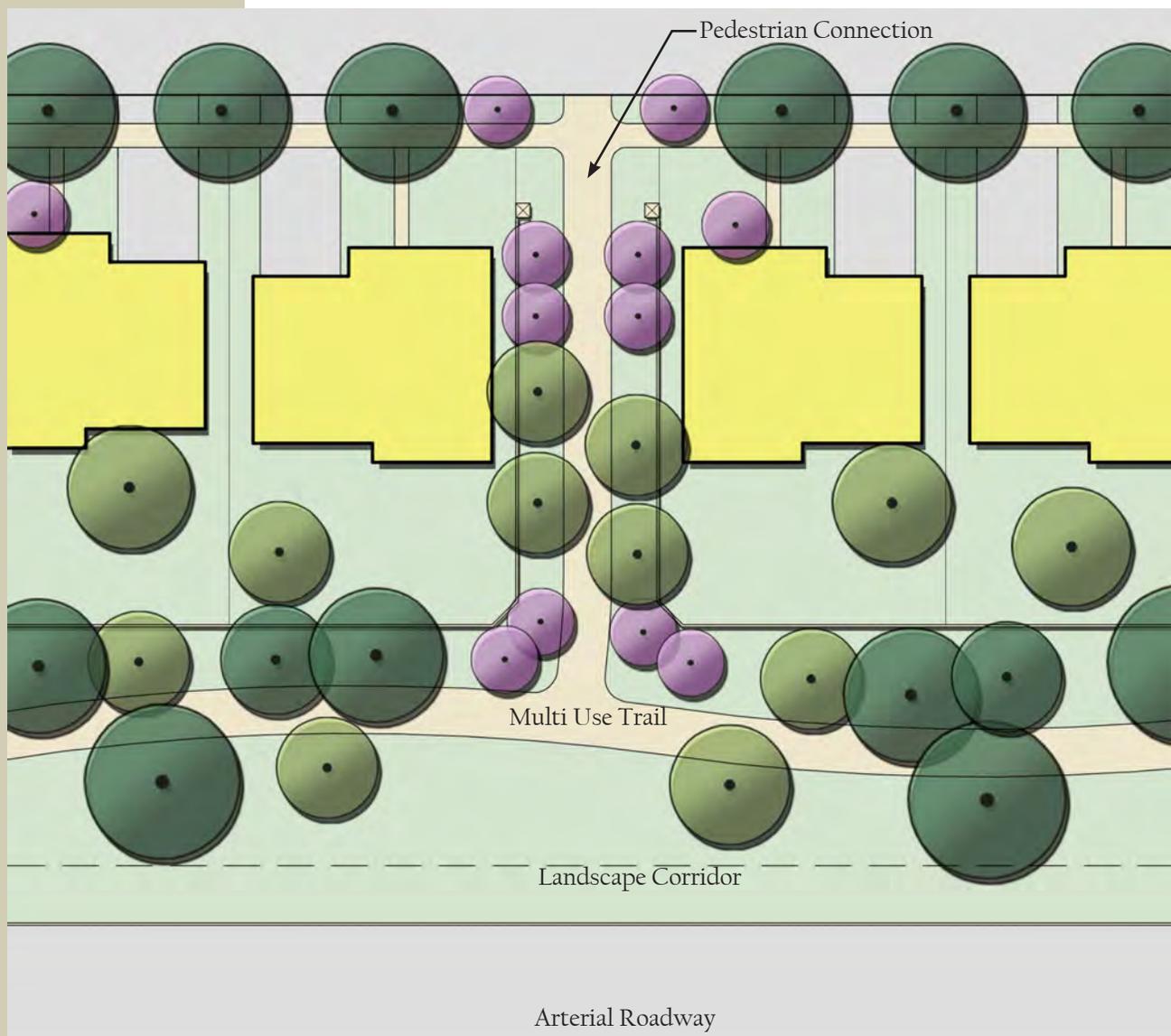


Figure 142 - Conceptual Pedestrian Access Points from Residential

8.A.4e. Planting Adjacent to Light Standards

Planting restrictions within the zone-of-light are as follows:

- Shrubs or trees which grow to a height greater than 4 feet at maturity are not to be planted in the zone-of-light.
- Trees planted outside the clear area should not have more than 20% of their canopy encroach within the zone-of-light. This 20% encroachment is based on the diameter of the tree's canopy at maturity.
- Planting restrictions within the zone-of-light should conform to electric provider standards.

8.A.4f. Planting Adjacent to Multi-use Trails

Plantings adjacent to multi-use trails should be designed to minimize hiding places. The plantings should be lower than 2' or pruned above 5' to reduce the potential for hiding places. The shrubs and ground covers should be setback from the trail a minimum of 3' for safety from tripping and bicycle interference.

8.B. Local Street Trees

Upon maturity, street trees should ultimately create a canopy over roadways, shade walks, and frame the streetscape. Trees should be selected and spaced based upon the unique characteristics of the adjacent street and the height and placement of the adjacent buildings. The plant matrix (appendix A provides a guideline for the species and general placement of the street trees but special attention should be given to the actual tree placement considering utilities, sight lines, signage and other elements of the streetscape.

Street trees should be planted from 15 gallon container minimum. Larger boxed trees (24" and 36") are encouraged, particularly in key locations that are civic in nature and considered to be part of the back-bone infrastructure of the Community. This might include Community and neighborhood entrances, roundabouts, medians, and pedestrian crossings.

Along LDR and MDR residential streets, at least 1 street tree per lot will be provided for interior lots and 2 street trees for each corner lot (1 per frontage). Along HDR sites the spacing should be governed by the plant matrix. The planting of the street trees will be coordinated with the Public Utility Easement and above ground structures as necessary.

8.C. Shade Requirements

Surface parking lots are should landscaped in accordance to the shade requirements contained in Appendix B: Parking Lot Shade Standards. Tree placement in parking areas should follow these requirements for tree shade. Landscaping within and along parking areas should respond to pedestrian and traffic needs.

8.D. Irrigation

8.D.1. WATER CONSERVATION

Landscape design should conform to Water Efficient Landscape Standards established by AB325. The water use calculations should be provided on the landscape plans for review and approval by the County during the Building Department and/or improvement plan review.

8.D.2. RECYCLED WATER

Irrigation systems to utilize recycled water should be marked with 3-inch wide purple marking tape on irrigation mainlines. Valve boxes and quick couplers to be used for recycled water should have purple caps for identification.

8.D.3. IRRIGATION SYSTEMS

The initial water source for irrigation is potable water, although it is possible that recycled water may be available sometime in the future. Consequently, major landscape areas within the Plan Area near recycled water mains should be designed for future conversion from potable to recycled water.

Irrigation systems may be spray, bubbler, or drip design, according to the needs of planting areas. Low precipitation heads should be used where possible.

Irrigation throughout the Plan Area need not be composed of a single type of system; a combination of different systems may be more practical. For example, areas of lawn may be watered with a spray system, where areas of trees and shrubs may be watered with only bubbler heads or drip emitters on separate valves.

The following guidelines apply to the irrigation systems:

- Check valves should be installed on all low-lying spray and bubbler heads as necessary to eliminate excess drainage or water damage, such as erosion, when the irrigation system automatically shuts off.
- Water spray and flow from irrigation systems is not to enter within driplines of existing oak trees to be preserved or into wetland preserve areas. Quick coupler(s) may be provided at oak trees for future watering needs.
- Irrigation head layout is to provide head-to-head coverage of spray to all areas, except where bubblers or driplines are used.
- Minimize spray irrigation within street medians.
- Compliance with the Electric Department's specifications for commercial construction.
- All public maintained landscape areas should be controlled by a centralized irrigation control system as specified by Placer County.

SECTION 9: ENTRANCES AND SIGNAGE

9.A. Community Entry Signs

“Community Entry Signs” are located at the plan area entrances on University, A Street, B Street and 8th Street and define the point of entry into the Community, as illustrated in Figure 151, Community Entry Sign Example. As with all other signs, landscaping may be placed around entry signs as a backdrop or to highlight the sign. Landscape plants displaying seasonal color may be used to attract attention. Lighting also can be incorporated for sign illumination or to create a special effect in the landscape.

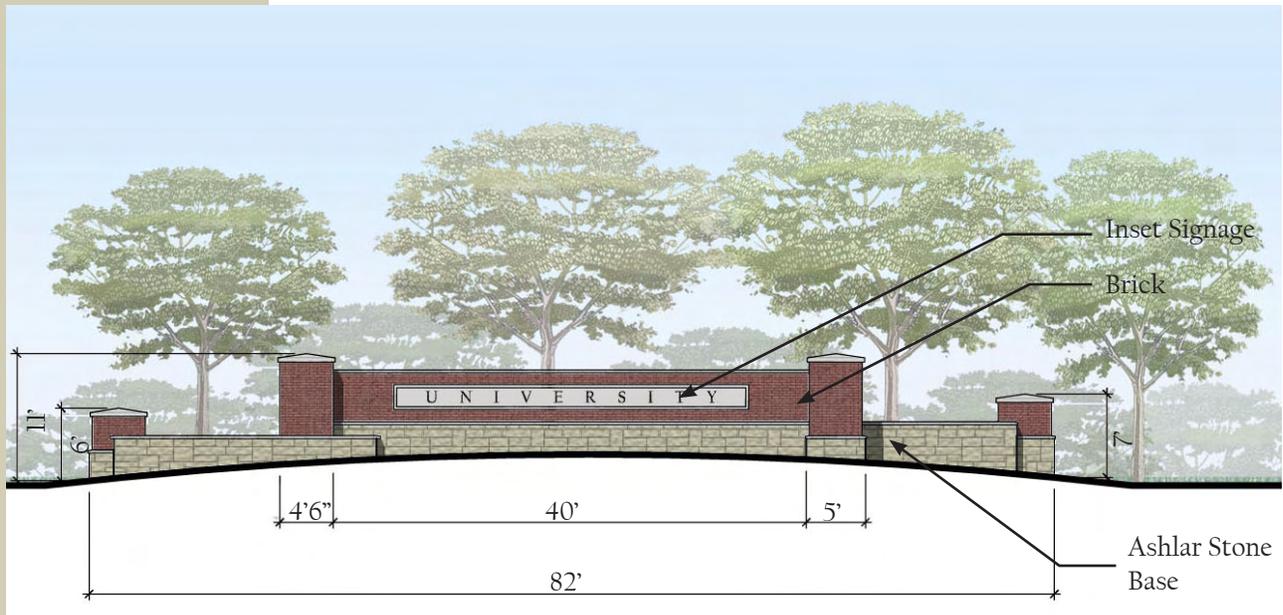


Figure 143 - Conceptual Community Entry Sign

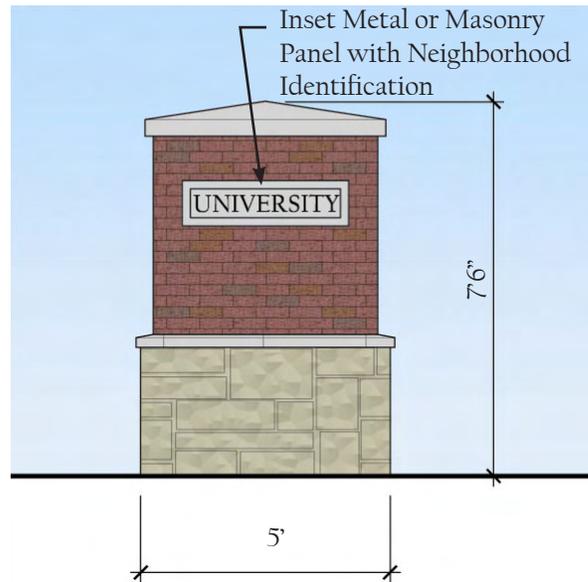


Figure 144 - Conceptual Neighborhood Entry

9.B. Neighborhood Community Entry Signs

Neighborhood Entry Signs are located at various neighborhood entrances. This sign is similar in appearance and function to the Community Entry Signs, only smaller in scale, as shown in Figure 152, Neighborhood Entry Sign Example.

9.C. Special Signage

9.C.I. AMENITY ENTRY IDENTIFICATION SIGNS

“Amenity Entry Identification Signs” identify certain Plan Area features, including the University campus, park sites, open space, University village, the sales pavilion and model home complex. At completion of marketing the Community, all sales pavilion and model home complex signs will be removed by the developer.

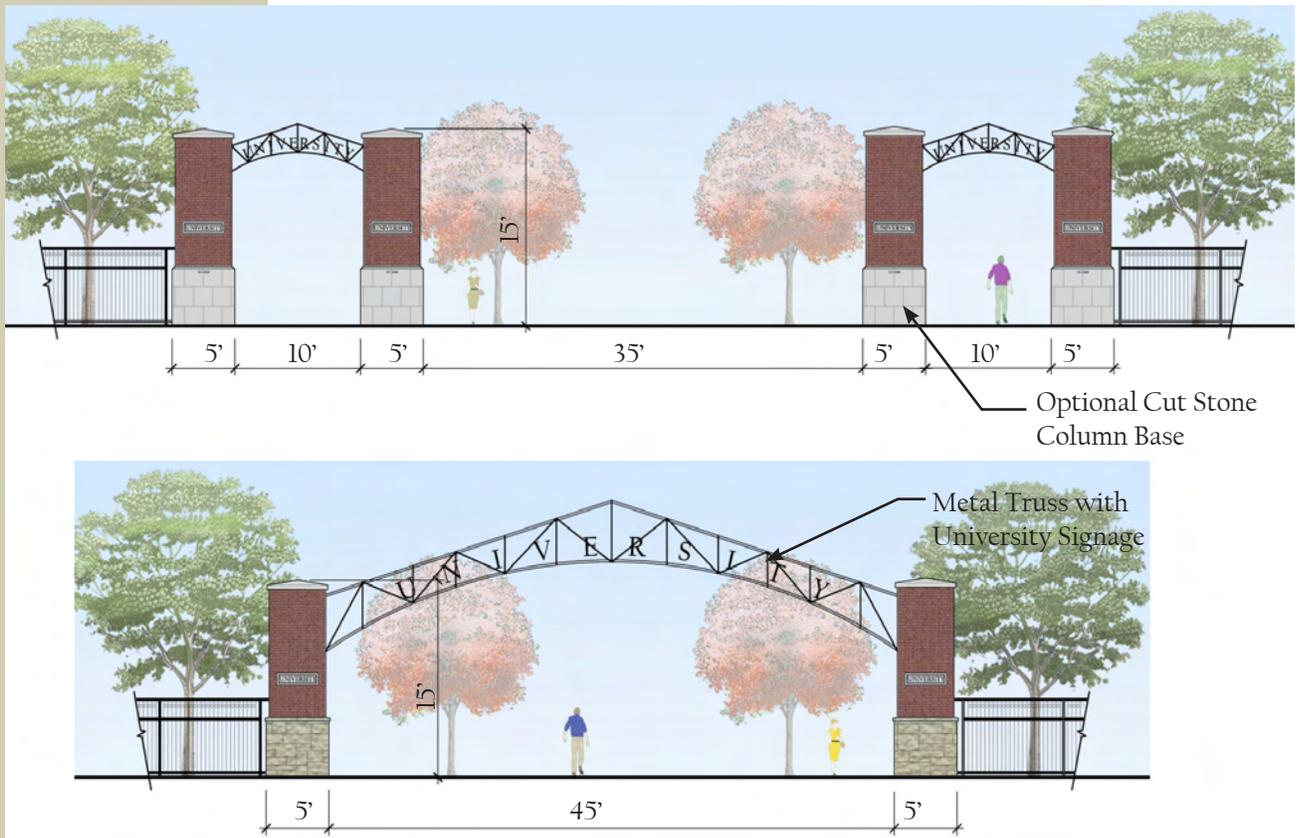


Figure 145 - Conceptual University Pedestrian Entry Gate (2 Options)

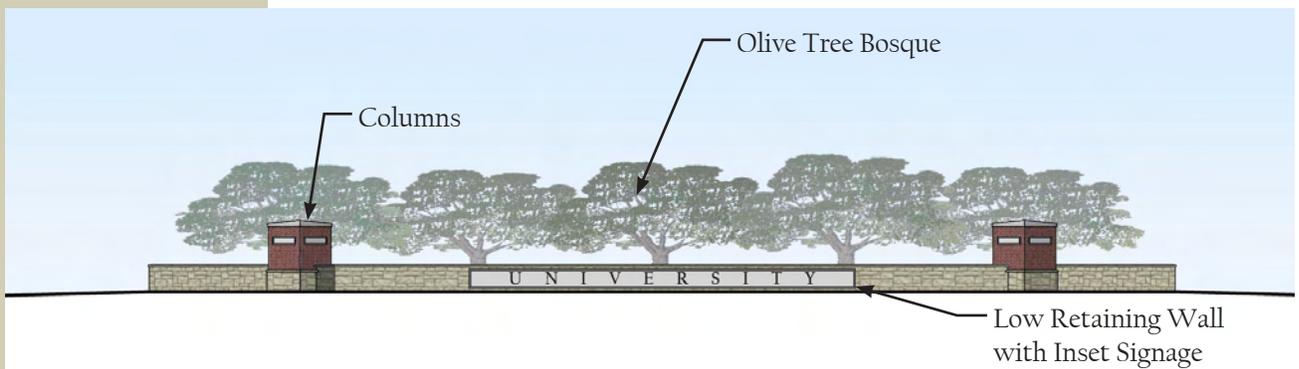


Figure 146 - Conceptual Roundabout Elevation

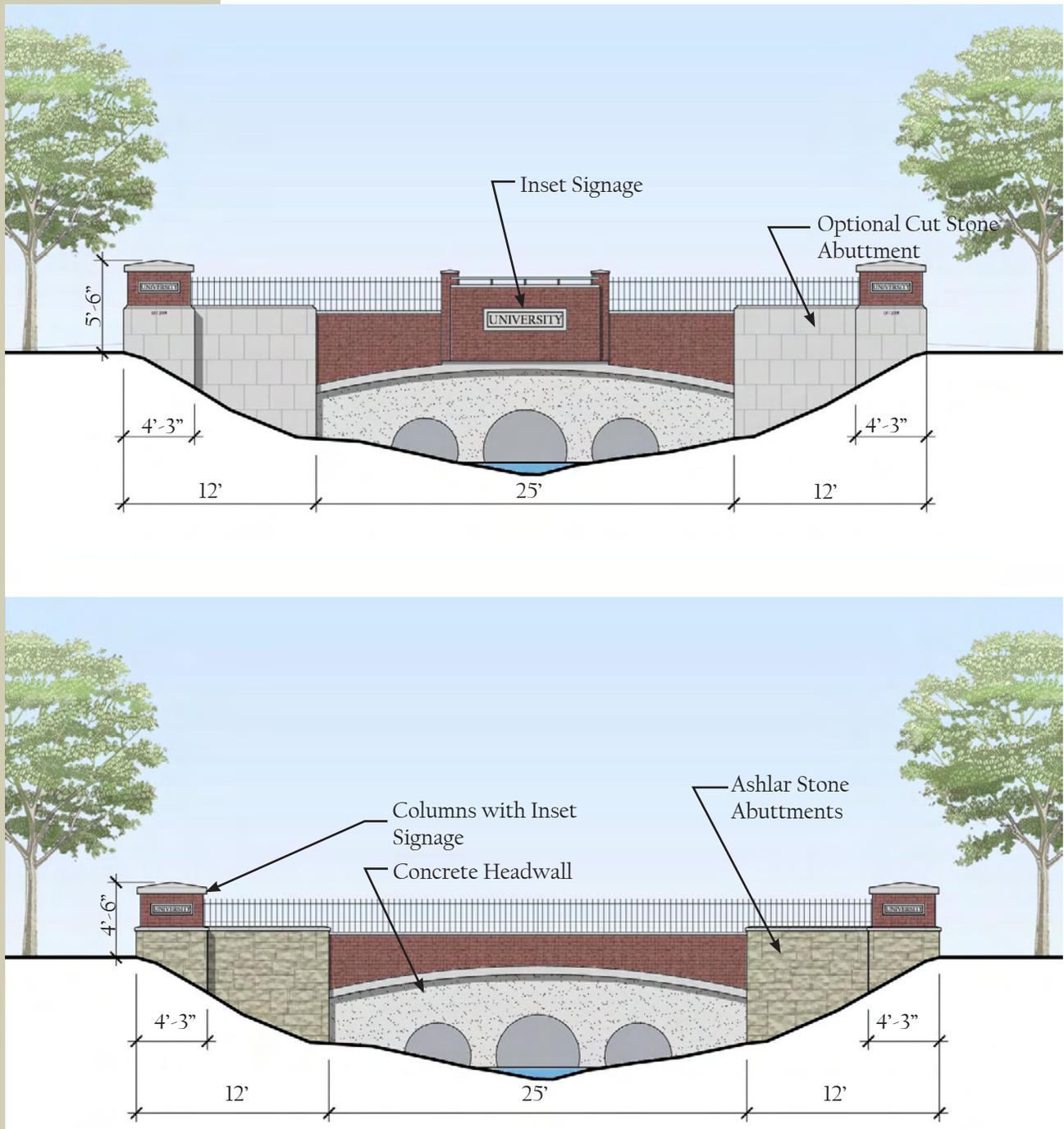
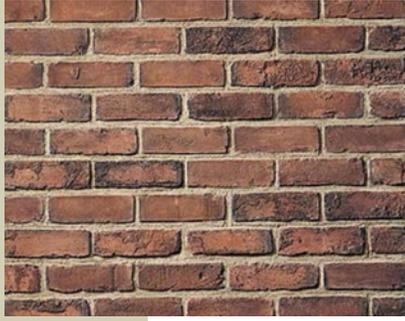


Figure 147 - Bridge Concepts(2 Options)



Brick

Figure 148 - Materials



Ashlar Stone

9.C.2. INTERPRETIVE SIGNAGE

Signage that interprets the open space habitat is encouraged along the multi-use trails adjacent to the open space corridors. Interpretation could include the plant and animal species, ecological succession of riparian corridors and water-quality / stormwater management principals.

9.C.3. GENERAL PROVISIONS

Additional signs may be used within the commercial and religious facility sites, and also within certain Plan Area Community spaces. Commercial and religious facility signage should be consistent with the design concept presented herein. All such signage will comply with the Placer County Sign Ordinance and should be pre-approved by the Planning Department.

The following guidelines apply to the RUSP sign program:

- Sign dimensions should be in scale with the surroundings and with the desired purpose.
- Sign embellishments may include bollards, uplighting, spotlighting, or downlighting. Lighting is not to glare at passing vehicles and should be shielded as necessary.
- For signs on lawn areas, a concrete mow strip, flush with grade around the base of the sign, is encouraged.
- Signage should be posted along the multipurpose trails identifying approved speed and uses as well as distances to various Community areas.
- Predominant sign construction materials should match or compliment those nearby walls and/or building architecture.
- All other wall signs, directional, and directory signs should comply with Placer County Sign Ordinance.
- Standard sign permits should be obtained prior to installation of any signage.

APPENDIX A:

PLANTING DESIGN MATRIX

Plant Use Key: A = Accent M = Median P = Park Grounds TZ = Park Transition Zone SC = Screen ST = Street Tree T = Turnabout Circle ● = General Usage	East Village and University Village (Commercial, CPD, CMU, LDR, MDR, HDR)		Parks		Circulation								
	Entrances	Adjacent to Open Space	Interior	Parking Lot	Path-ways	Community Park	Neighborhood Park	Open Space	Pocket Parks	University Boulevard	Watt Avenue	Other Major Arterials	Collector, Secondary and Local Streets
TREES – Large Deciduous													
Acer rubrum 'Autumn Blaze'	●		●	●	●	P	P		●	M	A	A	
Acer saccharinum						TZ		●					
Carpinus betulus		●	●		●	TZ		●					
Celtis australis		●	●										
Celtis occidentalis		●	●										
Crataegus phaenopyrum					●								ST
Ginkgo biloba			●			P	P		●		ST	ST	
Gleditsia triacanthos var. inermis			●										
Koelertheria paniculata						P	P						
Liriodendron tulipifera						P	P	●					
Pistacia chinensis			●			P	P		P				ST
Platanus acerifolia 'Bloodgood'				●		P	P			ST			
Platanus racemosa						TZ	TZ	●					
Populus spp.						TZ	TZ	●					
Pyrus calleryana 'Redspire'	A		●			P	P		P				ST
Quercus douglasii						TZ	TZ	●					
Quercus lobata						P	P	●					ST

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	Entrances	Adjacent to Open Space	Interior	Parking Lot	Path-ways	Community Park	Neighborhood Park	Open Space	Pocket Parks	University Boulevard	Watt Avenue	Other Major Arterials	Collector, Secondary and Local Streets
Quercus rubra			●	●		TZ	TZ	ST		ST	ST	ST	ST
Salix species													
Sophora japonica			●		●	P	P		P			A	A
Tilia cordata	●		●			P	P			ST	ST		
Ulmus hybrids (DED Resistant)				●		P	P	●			ST		
Ulmus parviflora				●									ST
Zelkova serrata 'Halka'				●		P	P			ST			
TREES – Large Evergreen													
Calocedrus decurrens						TZ	TZ	●					
Cinnamomum camphora		●	●			P	P						
Cedrus deodara	●			SC		P	P	●		M	M		
Pinus Pinea						P	P	●					
Pinus Eldarica			●			P	P	●			M		
Populus nigra 'Italica'	A		A									A	
Quercus suber						P	P	●				M	
Quercus wislizenii			●			P	P	●					
TREES – Small to Medium Deciduous													

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	Entrances	Adjacent to Open Space	Interior	Parking Lot	Path-ways	Community Park	Neighborhood Park	Open Space	Pocket Parks	University Boulevard	Watt Avenue	Other Major Arterials	Collector, Secondary and Local Streets
Acer griseum			●		●	P	P	●	P				
Acer buergeranum		●		●	●	P	P	●	P				A
x Chitalpa tashkentensis	A		A			P	P		P				
Cornus florida	A				●	P	P		P				
Cornus kousa	A	●				P	P	●	P		A		
Cotinus cogygia													
Crataegus laevigata	A					P	P		P			A	
Koeleruteria bipinnata			●			P	P		P				
Lagerstroemia spp.	A					P	P		P	M	A		A
Malus spp.	A				A	P	P		P				
Prunus spp.					●	P	P	●	P				
TREES – Small to Medium Evergreen													
Acacia baileyana						P	P	●	P				
Arbutus unedo		●			●	P	P	●	P	A			
Arctostaphylos 'Dr. Hurd'					●	P	P	●	P				
Cupressus sempervirens 'Stricta'	A		A										A
Eriobotrya deflexa			●										
Leptospermum scoparium	A		●		●								A

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			Minor Neighborhood Entries	Streets							Major Neighborhood Entries
Rhaphiolepis spp. Viburnum tinus Xylosma congestum SHRUBS – Medium to Small Abelia g. 'Edward Goucher' Artemisia spp. Cistus spp. Loropetalum Chinense Dietes spp. Escallonia x exoniensis 'Frades' Felicia fruticosa Gardenia spp. Arctostaphylos Densiflora 'Howard McMinn' Hemerocallis hybrid Iris germanica Juniperus spp.	Path-ways	Pocket Parks	Minor Neighborhood Entries	Streets							
	Parking Lot		Streets								
	Interior	Neighborhood Park	Major Neighborhood Entries								
	Adjacent to Open Space	Community Park	Streets								
	Entrances		Entrance								
			Street								
			Community Entry								
			Street								

Circulation	Collector, Secondary and Local Streets	Minor Neighborhood Entries							
		Streets							
	Other Major Arterials	Major Neighborhood Entries							
		Streets							
	Watt Avenue	Entrance							
		Street							
	University Boulevard	Community Entry							
		Street							
	Parks	Pocket Parks	Park Grounds						
			Open Space						
		Neighborhood Park	Park Grounds						
		Community Park	Park Grounds						
East Village and University Village (Commercial, CPD, CMU, LDR, MDR, HDR)	Path-ways								
	Parking Lot								
	Interior								
	Adjacent to Open Space								
	Entrances								
Plant Use Key: A = Accent M = Median P = Park Grounds TZ = Park Transition Zone SC = Screen ST = Street Tree T = Turnabout Circle ● = General Usage			Clytostoma callistigioides	Ficus pumila	Lonicera japonica	Parthenocissus tricuspidata	Parthenocissus quinquefolia	Rosa 'Cecile Brunner'	Wisteria sinensis

APPENDIX B:
PARKING LOT TREE SHADING DESIGN
AND MAINTENANCE GUIDELINES

1. INTRODUCTION / PURPOSE:

This document provides standards and guidance for the planting, maintenance, protection, removal and replacement of trees planted.

2. SHADING REQUIREMENTS AND CALCULATIONS:

The parking lot tree shading design & maintenance guidelines require that all new parking lots include tree plantings designed to result in 50 percent shading of parking lot surface areas within 15 years.

The shading requirements calculations apply to all new impervious surfacing on which a vehicle can drive including:

- Parking stalls
- All drives within the property line (regardless of length)
- All maneuvering areas (regardless of depth)

Exceptions to the shading calculation include:

- Single family and two family residential parking areas
- Parking structures
- Truck loading areas in front of overhead doors
- Truck maneuvering and parking areas unconnected to and exclusive of any vehicle parking
- Surfaced areas not to be used for vehicle parking, driving or maneuvering, provided they are made inaccessible to vehicles by a barrier such as bollards, curb, or fencing
- Vehicle display, sales, service, and storage areas (parking facilities for these uses are subject to shading requirements)
- Parking areas under covered stalls and in garages

Shading Calculations:

1. If a site has two or more unconnected parking areas, shade is calculated separately for each area. If they are connected by a joining drive, they are calculated as one lot.
2. The amount of shade provided by a given tree is determined by using the appropriate percentage and square footage of the tree crown as indicated on the approved shade tree list. Shading credit is given in 25 percent increments based on the amount of the tree crown that shades the parking area.
3. Overlapping shade does not count twice.
4. Street trees and existing on-site trees that shade parking lots will be given credit.
5. Provide shade calculations and shade legend. The planting plan may be used as the shade plan provided all required information is listed and the trees are drawn to scale at the size indicated on the approved shade list.

Shade calculations should indicate:

1. Tree Symbols
2. Tree Type
3. Tree Quantity
4. Surfaced Area (including carports, garages, etc.)
5. Shade Area Required
6. Shade Area Proposed
7. Shading Credit Accorded to Each Tree (F or 100%, TQ or 75%, H or 50%, Q or 25%)

Sample Parking Lot Shade Calculation Table:

Symbol	Botanical Name/ Common Name	Quantity @ Full Shade/Sq. Ft.	Quantity @ 3/4 Shade/Sq. Ft.	Quantity @ 1/2 Shade/Sq. Ft.	Quantity @ 1/4 Shade/Sq. Ft.	Total (sq. ft.)
T1	<i>Laurus nobilis</i> / Sweet Bay	1 @ 491	2 @ 368	5 @ 246		2457
T2	<i>Quercus agrifolia</i> Coast Live Oak		2 @ 722	2 @ 481	2 @ 240	2886
T3	<i>Pinus Patula</i> Jelecote Pine		1 @ 530	7 @ 354		3008
TOTAL TREE SHADE						8351
Surfaced Area:	Parking Lot		16240			
	Covered Stalls (garages, carports, etc.)		1500		TOTAL SURFACED AREA=	17740
SHADE AREA REQUIRED =						8870
If applicable, TOTAL AUXILIARY SHADE* =						1450
TOTAL SHADE PROVIDED =						9801
PERCENT SHADE =						55.2%

*NOTE: Auxiliary shade is the total parking area under covered stalls (carports, garages, etc.), not the total covered area.

This method allows easy follow-up and coordination when a discrepancy is found in the plan check process.

3. TREE PLANTING PRACTICES:

Proper planting practices are essential in achieving the best growth of a tree and shall be utilized in the development of each new parking lot. These practices include, but are not limited to, the following measures:

1. Inside dimensions of tree wells should be a minimum of 6 feet by 6 feet. Irregular tree well design may be allowed if a minimum of 36 square feet of surface area is provided and adequate rootable soil volume (minimum 85 cubic feet) is incorporated into the tree well planting. Smaller dimensions may be considered subject to the approval of the County Landscape Architect.
2. Trees should be planted at a distance of one half the required planter size behind a curb. Where a walk falls adjacent to a curb, any 35-foot crown diameter tree within 10 feet of the curb face receives 50 percent shade credit. The tree should be planted at a distance of one half the required planter size behind a walk for this credit to apply.
3. Two feet of vehicle overhang into a planter area is allowed, provided the planter is the correct minimum width of six feet. Vehicle overhang is not allowed into required setback areas.
4. Provide a mix of tree types (species or cultivars) if more than ten trees are required.
 - o If 20 to 40 trees are required, no more than 50 percent of the trees may be of the same type
 - o If more than 40 trees are required, then no more than 25 percent of the trees may be of the same type.
5. The County encourages 20 percent of the tree selection for a site to be oak or other native tree species.
6. Parking lot lighting should not conflict with required shade tree locations or growth. Light standards no greater than 16 feet in height are strongly encouraged. Buildings located close to streets will reduce potential conflicts between trees and free-standing signs.
7. Trees should be planted and soil volume should be amended as described below.
 - o Tree wells should be excavated to a depth of three feet or greater before being backfilled.

- Root barriers, where provided, should be of a material specifically designed for containing tree roots.
 - Irrigation in tree wells shall be adapted for deep watering
 - Backfill in planting pit shall be 75 percent native soil and 25 percent soil amendment.
 - Fertilizer tabs should be of slow-release design lasting for a minimum of ten months.
 - Entire planters, including backfill, shall be free of aggregate base (or other materials or construction debris detrimental to optimal plant growth).
 - Tree stakes shall be two inches below the lowest scaffold branch and be made of rot resistant material.
 - Trees should be tied loosely in a figure-8 pattern at the lowest point required to keep the tree in an upright position. Trees with trunks too weak to stand alone may be tied at two positions. If a single stake is used, it should be on the side of prevailing winds. If two stakes are used, they should be parallel to prevailing winds.
 - Tree wells and continuous planting islands may include root barriers (24 inches deep) to prevent potential root damage to parking lot surfaces.
8. Continuous planting islands are encouraged to allow for multiple tree plantings and increased rootable soil volume. These islands might also be designed to incorporate surface water runoff treatment measures such as bio-swales.
 9. The use of structural soil mixes is encouraged to promote root growth, especially where irregular tree wells are proposed, or extra shading credit is desired.

Note: The use of structural soil mixes is encouraged as they will increase the rootable soil volume as well as reduce the potential for root invasion into parking lot paving.

4. DRAINAGE / WATER QUALITY OPTIONS:

With early planning and design it is possible for areas required for tree planting to also be used to satisfy the County's requirement to provide on-site treatment of stormwater. In accordance with the Federal Clean Water Act and Federal and State NPDES stormwater regulations, the County is required to implement a Comprehensive Stormwater Management Program in order to reduce pollutants in urban runoff to the maximum extent practicable.

Parking lots which are part of new developments with 5,000 sf. or more of impervious area or 25 or more parking spaces generally required to provide treatment control measures that capture and treat stormwater runoff through settling, filtration, and/or biodegradation. The treated runoff is then released to the storm drain system or percolated into the ground.

Trees planted within stormwater runoff areas should only be species adapted to heavy to moderate irrigation, such as riparian species.

5. GENERAL SHADING PLAN REQUIREMENTS:

All projects submitted for building permits must include site grading plans, landscape planting plans and irrigation plans with irrigation calculations. All plans that include parking must also include a shade plan. The planting plan may be used as the shade plan provided the trees are drawn to scale at the size indicated on the approved shade list, and shade calculations are included. Plans will not be accepted into the building permit plan check process unless these items are included. Calculations of how these areas meet shade requirements must be shown and all areas and their dimensions used in shading calculations must be shown on the shading and/or landscape planting plan.

All landscape, irrigation and shade plans shall be approved by Placer County (Landscape Architect) or authorized representative. This approval occurs as part of the building permit plan check process.

All plan submittals must include the following information:

1. Name and address of project, assessor's parcel number(s) and locator/vicinity map
2. Property lines and easements (Project limits if other than property lines)
3. All site dimensions (This includes planters, parking layout, walks, building distances, covered parking areas, etc. Planter dimensions must be indicated on the inside of the face of curb).
4. Adjoining property use(s) and existing building setbacks
5. Structures (existing and proposed)
6. Walls and fences
7. Roads, walks, curbs and wheelstops
8. Mowing strips and header boards
9. Drop inlets, catch basins, maintenance holes, power poles, etc.
10. Mounds, banks and swales
11. Location of lighting fixtures

Each sheet must include the following information:

1. Sheet number and title
2. Scale of drawing
3. North arrow
4. Date drawn
5. Date of revision (Each revision must be submitted with clouds, deltas and dates).
6. Tree legends, plant legends, and/or shade calculations where appropriate
7. Appropriate stamp and signature

A. Irrigation Plans:

1. Sprinkler spacing shall not exceed the manufacturer's recommendation.
2. Include irrigation legend defining all symbols used. For each sprinkler head, provide diameter of throw, GPM, precipitation rate and type of head. Denote any other pertinent information such as low angle spray, adjustable spray, diameter, etc.
3. Irrigation system should be designed to meet the County standard pressure flow of 40 psi.
4. Provide backflow prevention device in accordance with the list of approved devices published by the University of California Foundation of Hydraulic Research and Cross-Connection Control. This list is on file in the Building Inspections Division, Commercial Permits counter.
5. Install all valves with threaded unions for easy replacement.
6. Provide controller with at least two programs and at least three start times per station.
7. Provide an irrigation schedule.
8. Provide shut-off valve at point-of-connection.
9. Show locations of all irrigation components and points of connection. Include symbols for each component in a legend (i.e., quick couplers, hose bib and washer boxes).
10. Indicate all main and lateral line sizes. Include class or schedule.
11. Provide Maximum Applied Water Allowance (MAWA) calculations.
12. No sprinklers on risers shall be installed next to walks, streets and/or pavement. Sprinklers in hazardous locations shall be flush mounted or only high-pop models mounted on single or double swing joints are to be used.
13. Irrigation systems shall comply with the County Water Conservation Ordinance.
14. All public maintained landscape areas shall be controlled by a centralized irrigation control system as specified by Placer County.

B. Landscape Plans:

1. Identify any existing tree species, street trees, or covered parking on site for consideration in shade credit calculations.
2. Show location and size of all existing trees and identify those that are to be removed. Existing trees shall be preserved whenever possible and shall be given shading credit, if applicable. No tree over two feet in diameter at breast height shall be removed without specific approval of the County Arborist. A tree removal permit is required for County street trees and heritage trees.
3. Planters in parking lots shall be protected with minimum six inch high/wide concrete curbs. Identify type of curb (extruded or poured). If extruded curbing is used, a detail must be provided to clarify planter width available. All reference to planter size is to clear inside soil width, excluding surrounding curbing and asphalt or foundation intrusions.
4. Show location of all proposed trees and shrubs. All shrubs shall be drawn to reflect the average specimen size at maturity. All shade trees shall be drawn to the size indicated on the Shade Tree List which shows the specimen size at 15 years of age.
5. The soil surface of all planters shall be covered with living groundcover and/or mulch within two years. Exceptions include areas covered with pedestrian pathways and decorative hardscape (i.e., art, archways, arbors, etc.). If mulch is used, spread two inches to six inches of shredded mulch (no wood chips), not to exceed curb or retaining device. Bark mulch is not allowed in a planter area adjacent to a public right-of-way unless six inch curbing is provided.
6. Show the types, quantities and sizes of all trees, shrubs and groundcover. Parking lot shade trees shall be a minimum 15 gallon size.
7. All plants and trees shall be listed by correct botanical name and common name.
8. Lawn shall be indicated by common name of species and method of installation (seed, sod or hydromulch). Sloped areas specifically designed for grass shall be sodded or hydromulched.
9. All parking lots must be screened from view of County streets by either a three foot high earth berm or shrubbery, or combination of both, that can be easily maintained at 30 inch height. Minimum inside planter width is four feet.
10. No tree shall be planted within the sight clearance area of driveways or street/alley intersections. Coniferous trees shall not be planted within five feet of the sight clearance areas.
11. Shrubs must be maintained at a 30 inch maximum height in site clearance areas.
12. Provide landscape details (i.e., soil preparation, tree staking, etc.) where appropriate.

Note: When planting under power lines, consider tree height. Use species with a maximum height of 25 feet.

C. Grading Plans:

1. Grading plans showing drainage of all planting areas and heights of mounds shall be provided. Include contour intervals.
2. Mounds and berms shall not have slopes that exceed 3:1 slope. The toe of any sloping section shall be a minimum 24 inches behind a curb or sidewalk.

3. Mounds over 30 inches high shall not be placed in sight clearance areas.

D. Maintenance:

1. Tree trimming and removal permits are required from Placer County to prune or remove parking lot shade trees. There is no cost associated with these permits.
2. All pruning work shall be completed pursuant to International Society of Arboriculture (ISA) and American National Standards Institute (ANSI) standards.
3. Removed trees must be replaced. The formula for replacement shall be as follows:

Any required trees or other plantings that die or are improperly maintained shall be replaced with healthy specimens of similar species and size. However, replacement trees shall not be required to exceed 48" box size. Removal and replacement of trees that have caused damage to County sidewalks or other county infrastructure shall be reviewed and approved by the County Arborist prior to tree removal. If the removed tree is greater than 48 inch boxed tree size, then a 48" box tree shall be planted.

6. TREES FOR PARKING LOT SHADING:

The list of trees for parking lot shading, identified in Appendix A, was compiled to aid in species selection. Any trees proposed to be planted that are not on the list must receive approval from the County Landscape Architect or the County Arborist. Such requests must be submitted through the County Building Division of the Planning and Building Department.

Selection of the trees listed is based on adaptability to parking lot conditions. The characteristics identified in the tree list are provided to help select a good shade tree. The species listed are not suitable for all situations. Consultation with a nursery representative or landscape architect is desirable before any selections are made. Professional guidance is recommended to assure that optimal design is achieved to meet the needs of each development. Proper planting procedures, optimal spacing distance, soil, water requirements and maintenance programs should be ascertained at the start of the landscape project. It is important to note that proper planting procedures may include digging past the hardpan layer to assure deeper and proper growth.

All other energy conservation ordinances, resolutions and measures are available from the Planning and Building Department. Building permit plan approval will be based on these guidelines.

Tree List

35' DIAMETER TREES

Shading Calculations: 100% = 962 SQ. FT. 75% = 722 SQ. FT. 50% = 481 SQ. FT. 25% = 240 SQ. FT.

Botanical Name COMMON NAME	Minimum Planter Width	Height To:	Growth	Roots	Remarks
Celtis australis EUROPEAN HACKBERRY	6'	50'	Moderate	Deep	Deciduous, mod. irrigation, fruit
Fraxinus Americana 'Autumn Purple', 'Chicago Regal' WHITE ASH	6'	40'	Fast	Shallow	Deciduous, fall color, some insect & disease damage Mod. irrigation
Fraxinus pennsylvanica 'Patmore', 'Leprechaun', 'Centerpoint' GREEN ASH	6'	40'	Fast	Shallow	Deciduous, some insect and disease damage
Fraxinus uhdei EVERGREEN ASH	6'	40'	Fast	Medium	Evergreen, prone to insect and disease damage
Platanus acerifolia 'Yarwood', 'Bloodgood', x hispanica 'Columbia' LONDON PLANE TREE	6'	70'	Fast	Shallow	Deciduous, red spider, powdery mildew, anthracnose, smog tolerant
*Platanus racemosa CALIFORNIA SYCAMORE	6'	60'	Moderate	Medium	Deciduous, red spider, powdery mildew, anthracnose
*Quercus agrifolia COAST LIVE OAK	6'	40'	Moderate	Deep & greedy	Evergreen, drought tolerant
Quercus coccinea SCARLET OAK	6'	60'	Fast	Deep	Deciduous
Quercus ilex HOLLY OAK	6'	50'	Moderate	Deep	Evergreen, has caterpillars, drought tolerant
*Quercus lobata VALLEY OAK	6'	60'	Moderate	Deep	Deciduous, litters
Quercus macrocarpa BUR OAK	6'	50'	Moderate	Deep	Deciduous, litters
Quercus robur ENGLISH OAK	6'	50'	Moderate	Deep	Deciduous, litters
Quercus rubra RED OAK	6'	60'	Moderate	Deep	Deciduous, avoid clay soils
Quercus suber CORK OAK	6'	70'	Moderate	Deep	Evergreen, drought tolerant
Quercus virginiana SOUTHERN LIVE OAK	6'	60'	Moderate to Fast	Deep	Evergreen, tolerates moisture

*California native

30' DIAMETER TREES

Shading Calculations: 100% = 706 SQ. FT. 75% = 530 SQ. FT. 50% = 354 SQ. FT. 25% = 177 SQ. FT.

Botanical Name COMMON NAME	Minimum Planter Width	Height To:	Growth	Roots	Remarks
Acer fremanii 'Autumn Blaze' AUTUMN BLAZE MAPLE	6'	50'	Moderate	Deep	Deciduous, fall color, mod. irrigation
Acer platanoides 'Crimson Sentry' color CRIMSON SENTRY MAPLE	6'	40'	Moderate	Shallow	Deciduous, fall
Acer rubrum 'October Glory' OCTOBER GLORY RED MAPLE	6'	50'	Moderate	Medium	Deciduous, deep watering to keep roots down
Eucalyptus microtheca Coolibah	6'	40'	Fast	Medium	Drought and soil Tolerant
Ginkgo biloba MAIDENHAIR TREE	6'	40'	Slow	Deep	Deciduous, gawky when young, use male tree only
Koelreuteria paniculata, bipinnata, elegans GOLDENRAIN, CHINESE FLAME, FORMOSAN FLAME	6'	35'	Slow Moderate	Deep	Deciduous, mod. irrigation, flowers, litters
Magnolia grandiflora SOUTHERN MAGNOLIA	6'	50'	Slow	Deep	Evergreen, litters, Moist, well drained, slightly acid soil
Pinus patula JELECOTE PINE	6'	30'	Fast	Medium	Evergreen, drought tolerant
Pistacia chinensis CHINESE PISTACHE	6'	50'	Moderate	Deep	Deciduous, drought tolerant, fall color, young tree lopsided and gawky
Quercus frainetto 'Forest Green' FOREST GREEN OAK	6'	50'	Fast	Deep	Deciduous, drought tolerant, acorns
Quercus shumardii SHUMARD RED OAK	6'	70'	Moderate	Medium	Deciduous, more drought tolerant than other red oaks
Taxodium distichum BALD CYPRESS	6'	50'	Moderate	Deep	Deciduous, mod. Irrigation
Tilia Americana AMERICAN LINDEN	6'	50'	Slow to Moderate	Deep	Deciduous, deep rich soil, plenty of water, aphids
Tilia cordata LITTLE LEAF LINDEN	6'	40'	Slow to Moderate	Deep	Deciduous, aphids
Ulmus 'Frontier', 'Prospector' FRONTIER, PROSPECTOR ELM	6'	40'	Fast	Medium	Deciduous, mod. irrigation, Disease resistant
Ulmus parvifolia 'Athena', 'Allee' ATHENA, ALLEE CHINESE ELM	6'	40'	Fast	Medium Medium	Deciduous, mod. irrigation, Frequent pruning
Zelkova serrata 'Green Vase' GREEN VASE ZELKOVA tolerant	6'	50'	Moderate		Deciduous, drought

*California native

25' DIAMETER TREES

Shading Calculations: 100% = 491 SQ. FT. 75% = 368 SQ. FT. 50% = 246 SQ. FT. 25% = 123 SQ. FT.

Botanical Name COMMON NAME	Minimum Planter Width	Height To:	Growth	Roots	Remarks
Carpinus betulus EUROPEAN HORNBEAN	6'	40'	Moderate	Medium	Deciduous, densely pyramidal, availability problems
Laurus nobilis SWEET BAY	6'	30'	Slow	Deep	Evergreen, good drainage, drought tolerant
Nyssa sylvatica TUPELO OR SOUR GUM	6'	40'	Slow	Deep	Deciduous, fall color tolerate poor drainage
Pyrus calleryana 'Trinity', 'Chanticleer', 'Redspire' CALLERY PEAR	6'	40'	Moderate to Fast	Medium	Deciduous, flowers
*Umbellularia californica CALIFORNIA BAY	4-6'	25'	Slow	Medium	Evergreen, drought tolerant, deep soil

*California native

20' DIAMETER TREES

Shading Calculations: 100% = 314 SQ. FT. 75% = 236 SQ. FT. 50% = 157 SQ. FT. 25% = 79 SQ. FT.

Botanical Name COMMON NAME	Minimum Planter Width	Height To:	Growth	Roots	Remarks
Acer buergerianum TRIDENT MAPLE	6'	25'	Moderate	Shallow	Deciduous
Acer campestre HEDGE MAPLE	6'	30'	Slow	Shallow	Deciduous
Acer palmatum JAPANESE MAPLE	4-6'	30'	Moderate	Shallow	Deciduous, fall color, part to full shade
Acer truncatum 'Norwegian Sunset' NORWEGIAN SUNSET MAPLE	6'	30'	Slow	Deep	Deciduous, fall color
Cercis Canadensis EASTERN REDBUD	4'	35'	Moderate	Medium	Deciduous, moderate irrigation
Lagerstroemia indica x L. faurei clones CRAPE MYRTLE (Catawba, Cherokee, Pecos, etc.)	4-6'	25'	Slow	Shallow	Deciduous, full sun, mildew, summer flowers
Prunus 'Cascade Snow' CASCADE SNOW CHERRY	4-6'	20'	Moderate	Medium	Deciduous, white flowers, ample water
Prunus cerasifera 'Krauter Vesuvius', CHERRY PLUM	4-6'	20'	Fast	Medium	Deciduous, dark purple leaves, white flowers, fruit
Quercus buckleyi TEXAS RED OAK	6'	30'	Moderate	Deep	Deciduous, fall color, drought tolerant
Vitex agnus-castus CHASTE TREE	4-6'	20'	Fast	Deep	Deciduous, drought tolerant, flowers
Pyrus kawakamii EVERGREEN PEAR	4-6'	20'	Fast	Medium	Deciduous, white flowers, moderate irrigation.

Note: Other tree species may be considered on a case-by-case basis, subject to the approval of the County Landscape Architect or County Arborist.

Definitions

Amended Soil - Soil that is brought to the site to enhance plant growth and typically contains approximately 33 percent clay, 33 percent silt and 33 percent sand.

Clone – Asexually propagated plants with distinguishing characteristics identical to the parent plant.

Continuous Planting Island - Long strips of pervious material that contains trees, shrubs, and ground covers.

Crown - The leaves and branches of a tree or shrub; the upper portion of a tree from the lowest branch on the trunk to the top.

Cultivars - Seed propagated plants that have certain distinguishing characteristics such as fruitlessness, form and pest/disease resistance.

Irregular Tree Well - Tree wells with less than a 6 feet by 6 feet (square) interior dimension.

Native Top Soil - Top soil from the construction site. Native soil may not be suitable for growing plants if it has been altered by previous construction.

Root Barrier – a tool used to deflect tree roots downward as they grow in order to prevent and mitigate damage to land and hardscapes caused from migrating roots that may uplift streets and sidewalks.

Rootable Soil Volume - The volume of soil in and around tree wells and planting islands that tree roots utilize.

Structural Soil- Soil mix that is a load bearing matrix of coarse stone aggregate, topsoil, and binding polymer (to bond top soil with aggregate) that can be extended out under asphalt from the tree well to increase rootable soil volume.

Tree Well - An isolated planting area for a tree to provide limited soil volume for tree roots and rainfall infiltration.

