



9 Community Design

Community Design, including architecture, landscaping and principles guiding the location of improvements and layout of developed properties is an important part of determining the quality of life for residents. Good design promotes civic pride, efficiency of services and transportation of goods and people, and a sense of identity.

These Design Guidelines are included as an integral part of the Valley View Specific Plan for use by persons, organizations and public agencies in planning and carrying out developments within the Plan. They are not intended to bring a uniformity to each part of the Plan area, but rather to promote quality and cohesiveness. Within the guidelines is found the general blueprint for development decisions affecting the siting of buildings, landscaping, parking and other design details. The Plan also establishes a process for the architectural review of proposed development of certain types of uses by an Architectural Review Committee to be established under Conditions, Covenants and Restrictions (CC&R's) in order to assure a compatibility of design, maintenance of a level of quality of development and compliance with the goals and policies of this Plan. These guidelines shall form the basis of any more detailed design policies which may be set by the CC&R's. For all residential developments, the Architectural Review Committee shall be solely responsible for the design approval of such projects, except where specific design criteria have been imposed by the County through conditions of approval of tentative maps.

These guidelines may also be employed by the County in its review of certain types of applications such as for all commercial development and Special Use Permits which involve the review of site plans or building plans. The guidelines are intended to be flexibly applied so that the creative process of design professionals engaged in the development of specific parts of the Plan can be fully realized within this general framework.

All developments which follow the adoption of the Valley View Specific Plan will be judged as to their consistency with the Plan and secondarily as to compliance with these guidelines. Where design review occurs, the approving authority for El Dorado County will apply the guidelines, not with the force of law, but rather, as a program

intended to firmly steer development in predictable directions. Judgment shall be retained by the approving authority as to whether a particular situation merits strict application of the rules and standards contained herein or whether deviation may be warranted. In applying this judgment, no specific development project nor portion of the Plan shall be entitled to a special privilege, lessening the achievement of the overall level of quality which the entire Plan area enjoys.

Sketches, plant lists and illustrations that appear in these Design Guidelines are to be considered typical of the features illustrated but not as precise designs. Where dimensions are given they may be considered as general minimums to be reduced by approval of the Architectural Review Committee, or approving authority when the committee, or county finds special circumstances in the particular situation under review.

All improvements shall meet the requirements of Title 24 of the State Administrative Code for energy conservation. To the extent that private architectural review requirements may conflict with this Title, other applicable sections of state law or local building codes, the provisions of such statutes or codes shall prevail.

Basic Provisions

Valley View is essentially a residential community with commercial, office and public uses largely intended to support the resident population. Residential areas are designed as three "villages" in a manner consistent with the pattern of the overall community of El Dorado Hills. Within each village, except for East Ridge, will be a number of neighborhoods designed to be accessible to limited access collector roads through identifiable entrances. In East Ridge Village, the prevailing lower densities and low traffic volumes makes the development of internal, limited access collectors unnecessary. Here neighborhoods will be more closely identified with terrain and the ultimate pattern of internal roads.

Village Gateways

Figure 9.1

Village Gateways Illustrative

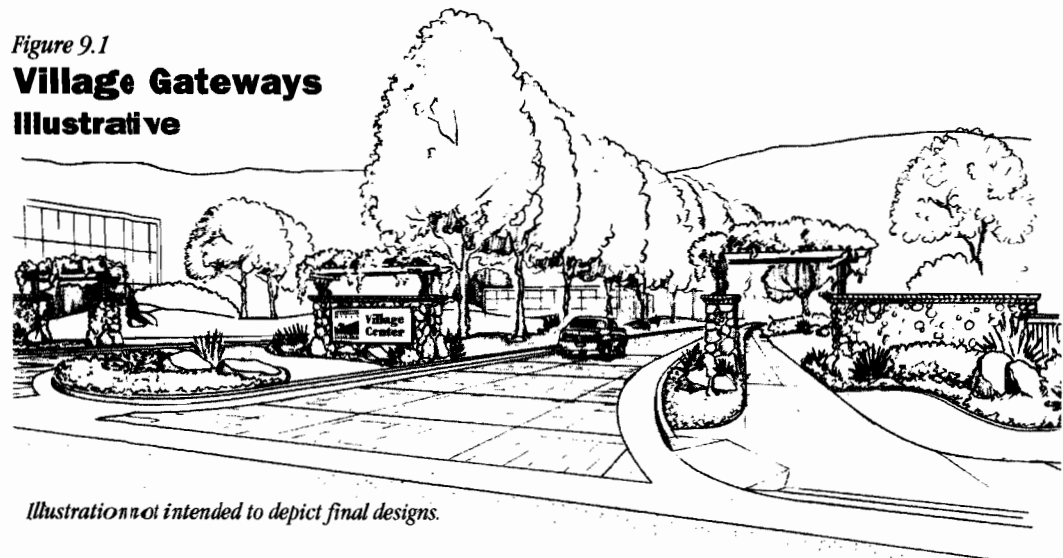


Illustration not intended to depict final designs.

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At the main entrance to West Valley Village and White Rock Village, defined gateways will be created into the community. This will be accomplished by landscaping, decorative walls and subdued signing within the right-of-way. At East Ridge, a similar gateway will be created at some point along the main collector access road ascending from White Rock Village. Figure 9.1 illustrates the Village entrance concept.

Neighborhood Entrances

Where defined entrances to neighborhoods are created off major collector roads, they may be developed with individualized signing and landscape treatment within a generalized framework. If such neighborhoods are developed as a single project, they may employ the marketing name of the project or may use such other identifying name as may be determined at the time of subdivision. Signing may be developed within landscape areas or on decorative wall surfaces but shall be illuminated by indirect light only. Designs may employ the use of wood; composites; metal sculpture; carved, polished or cast stone; or letters in bas-relief. Figure 9.2 is illustrative of neighborhood entrance detail.

Internal Streetscapes

At points other than entrances, landscaping will be installed within the parkways and medians of collector roads as shown in Figures 5.5 through 5.7 in Chapter 5. At major nodes and near entrances, landscaping may be elaborate, employing irrigation systems and such materials as turf and other high maintenance materials. The use of recycled treated effluent shall be preferred for landscape areas. Where such water cannot reasonably be provided, potable water may be used for entrances and high visibility design elements. Any other landscaping shall use low maintenance plant materials which require infrequent or no irrigation.

Figure 9.2

Neighborhood Entrances Illustrative

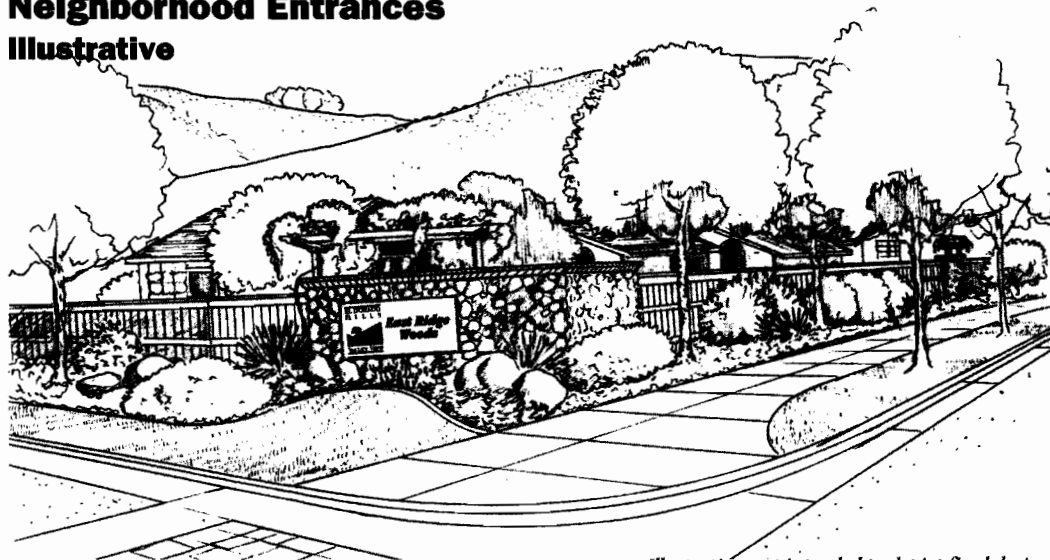


Illustration not intended to depict final designs.

Residential Development

Building architecture in single family neighborhoods shall reflect a blend of the compatible use of materials, combinations of colors, and architectural style with variety in setbacks and articulation of wall surfaces and roof lines. The repetition of simple roof lines on uniform setbacks and the dominance of large front-oriented multiple car garages on narrower lots are perhaps the two structural elements that most detract from pleasant and visually interesting neighborhoods. Architectural trim elements around windows, doors and defining building waist bands shall be continued on side and rear elevations which are visible from public vantage points. The degree of architectural detailing and finish shall generally be consistent throughout a production housing project from the least expensive to the most expensive unit.

The CC&R's for each tentative map for residential development shall contain provisions for the establishment of an architectural review committee. The purpose of this committee is to ensure that the Architectural Design Guidelines for single family development within the Specific Plan text are administered in conformance with the Specific Plan. These guidelines shall provide the minimum basis for review.

Architectural Guidelines for Single Family Residential

1. Architectural design of all structures shall consider the site on which buildings are constructed, their relationship to other structures in the area, climate orientation and natural vegetation.
2. Natural materials such as wood, masonry, stucco, stone and terra-cotta shall be incorporated. Finish colors shall be textural in nature, primarily natural tones, with accent trims on building openings and indentions.
3. Where rear facades of residential structures face a public open space or are visible from public roads or paths, that facade shall incorporate some of the same design elements as are used on the front of the house, such as window treatments and trim bands.
4. Walls of buildings shall have varied forms that provide visual interest and create texture, shadow patterns and avoid uninterrupted planes.
5. Trim materials shall be a minimum of three inches (3") in width and substantial thickness to create shadow patterns. Interesting window treatments are encouraged particularly on facades which face pedestrian and vehicular corridors.
6. Attractive attic and foundation vents, consistent with the architectural style shall be used in all cases. Plant shelves are encouraged.

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7. All roof flashings, gutters, downspouts and other related materials shall match adjacent materials and surfaces.
8. Openings in buildings shall be designed using architectural enhancements, indentations, roof variations and ornamentations.
9. Roofing materials are encouraged to be concrete tile, composition tile, slate, or similar tile materials. Because of the inherent danger of brush fires in foothill areas, the use of wood shake roofs shall not be permitted.
10. All mechanical equipment that is part of the residence, including cable boxes and electrical equipment shall be screened from view from any vehicular or pedestrian corridor, in all residential areas. No roof mounted equipment is allowed.

Single Family Residential Site Design

1. Pedestrian and bikeway systems within a residential neighborhood shall be designed to tie into the community systems wherever possible. Local sidewalk systems shall tie into the community pedestrian network at convenient locations, especially where commercial land uses abut a residential project.
2. When residential projects are adjacent to major drainage facilities or incorporate a drainage facility as a part of the project design, the overall site plan is encouraged to treat the facility as an amenity. The site design shall utilize an "eyes-on" concept as opposed to one which turns its back to the feature.
3. Attractive unit masonry walls may be used at all appropriate locations.
4. Single family production housing shall include installation of front yard landscaping for all units prior to occupancy. In lieu of developer-installed front yard landscaping, a home builder may allow for consumer-installed front yard landscaping through terms of sale including landscaping incentives such as credit or rebate programs. Such consumer-installed landscaping shall be installed within six months of initial sale.
5. Shrubs shall be planted near house walls to provide a cooling effect and to shade and screen outdoor air conditioning units.

Ridgelines

The following design treatments relate primarily to hillside and ridgeline locations since they are the areas of greatest visual concern. The intent is to reduce visual impacts from development in sensitive, exposed areas without adding prohibitive cost or limit flexibility to builder product.

These criteria are intended for use along the west slope of the primary ridgeline separating West Valley and East Ridge and two secondary ridgelines in West Valley.

Building Location—Primary Ridgeline

This section of criteria, Building Location, pertains to the west face of the primary ridgeline within East Ridge only. The remaining sections pertain to all designated ridgeline areas, including the East Ridge primary ridgeline.

1. Residential and ancillary buildings shall only be located on *primary building area* as defined in the "Development Requirements Within Oak Woodlands" section of the Specific Plan. This restricts improvements in ER areas to an area of 12,000 square feet or 25% of the total lot area, whichever is greater.
2. Residential and ancillary buildings shall not be sited in locations that are outside the general perimeter of the oak tree woodlands located along the upper west facing slope of the ridge. Buildings shall be sited to blend in with the woodland and utilize the woodland as a screening device from views of the ridgeline from outside the community.
3. The *primary building area* for a residential building shall be carefully located to avoid the most significant and mature oak trees within a given lot boundary. The building pad shall be selected to maximize the screening effect of oak trees from viewpoints located generally west and north of the property.
4. The *primary building area* shall be located on the lot in a manner that minimizes grading and the extent of visible fill or cut slopes from points down-slope. A balance between tree removal and minimizing grading should be achieved in the site design process.
5. A *primary building area* location study should be undertaken as part of the tentative map review. The site location study would evaluate slope, vegetation, view exposure from below, adjacent residential massing and access. After identifying the optimal building location and envelope, the primary building area shall be designated on the building envelope diagram.

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6. The view from U.S. Highway 50 and Latrobe Road shall be preserved by restricting building placement location along the East Ridge primary ridgeline as follows: All structures shall be situated below the ridgeline and not on the crest of the ridgeline in such a way that the majority of the structure does not project above the ridgeline. Where tree canopy exists within 100 feet of the building site, the structure may be located upon the ridgeline only under the circumstance that this is the only location available to avoid unnecessary tree removal. "Ridgeline" shall be defined as the top or crest of the ridge.

Downslope Lots

This section of criteria, pertains to west-facing downslope lots adjacent to both the primary ridgeline at the western edge of East Ridge Village and west-facing downslope lots adjacent to the secondary ridgelines in West Valley.

1. Building massing shall generally "break" and "step" to reflect and reinforce the topography of the adjacent hillside and ridgeline. Stepping of building form on the down-slope side shall be provided where building pads are located on slopes in excess of 15% grade. "Steps" or offsets between vertical planes shall be at least six feet in depth.
2. Continuous, vertical building walls shall not exceed two floors in height on any downhill facade. Building facades that are greater than two floors in height due to slope conditions shall break the building face with terrace or stepped massing. Use of exposed "stilt" designs is prohibited, however, building pier systems may be utilized if integrated into the architectural design, covered by exterior wall and does not exceed ten feet in height.
3. Rooflines shall be "broken" and undulating in character and should generally reflect and reinforce the adjacent topography. Simple, full length, double gable rooflines are prohibited. Full width gables over two story massing is prohibited when facing directly down hill. Hip roofs, combination and multiple gable roofs are encouraged.
4. "Articulated massing" and detail are required on all downhill facing rear elevations. Massing shall be broken with off-setting planes, balconies, dormers, projections and other devices of sufficient scale to create shadow, character and interest when viewed from a distance. Large-bulk structures and box-like masses are to be avoided.
5. One story elements shall be incorporated into building massing to better blend with topography and transition from adjacent oak woodlands. To the extent possible, massing should "build up" from one to two stories, especially

where homes are exposed to downhill viewpoints or not screened by existing woodland.

6. Building massing should be compatible to adjacent residences and provide a gentle transition of height and volume. Strong contrasts and dramatic statements should be avoided.
7. Roof slopes should be flatter in slope rather than steeper to harmonize with adjacent topography and create a horizontal rather than vertical character.

White Rock Hillside Additional Design Criteria

The following design criteria applies exclusively to development of the ER-LL lots located on the immediate knoll at the northwestern section of White Rock Village, just southeast of the Multi-family Residential (MF) designated area.

1. The lot configuration shall take a radial form with the center being the top of the ridge.
2. Homes shall be located at the uppermost elevation of the lot, forming a "clustered" pattern of architectural massing.
3. To minimize unsightly massing in relation to slope, no building pads shall be located on slopes exceeding 25%.
4. Homes located on slopes between 15% and 25% shall "step up" the slope and provide a one story down hill massing element at least 12 feet in depth.
5. No more than 25% or 12,000 sf of the lot shall be improved or graded.
6. Lot line fencing shall be limited to within 75 feet of buildings.
7. Architectural styles for homes in this area shall be of a Ranch, Prairie or other style that is characterized by horizontal lines, flat roof pitches and moderate to dark earth tone colors.
8. Exterior walls shall be darker in tone utilizing earth tones such as brown, tan, green or warm gray. Flat white shall not be used except for trim.
9. Natural appearing roof materials, such as fire retardant shakes, flat tiles, slate, barrel tiles, should be utilized to create a diverse, rich visual character. Roof colors should be darker than wall colors.
10. Grading shall be feathered out around all edges of the cluster so that after re-vegetation has been completed, no scarring is evident.

Architectural Character

Residential architecture shall be primarily controlled under a private process for Architectural Review administered under the authority of Conditions, Covenants and Restrictions (CC&R's). In order to respond to changing availability of materials and the latest construction technologies, specific architectural requirements shall not be set within this Specific Plan, however the following general guidelines shall be followed in the administration of the architectural review process.

1. In general, the design of residential exteriors shall be harmonious with the character of the communities natural landscape.
2. Building materials and colors shall be subdued to minimize contrast. Colors shall be limited to both light and dark shades of warm earth tones. A variety and diversity in color is, however, encouraged.
3. Selection of dominant building colors shall take into consideration adjacent building, foreground natural landscape and adjacent woodland tones.
4. Colors not normally found in the natural landscape, such as white, blue, cool gray and black shall be avoided.
5. Rooftop appurtenances (jacks, vents, etc.) shall be located and grouped to conceal them from offsite vantage points below, and from direct view of neighboring homes.
6. Cantilevered decks and balconies on any visible downslope lots shall be limited in size or avoided entirely.
7. Reflective windows and building materials shall be prohibited.
8. Building designs should in general be horizontal in character and attempt to blend and connect with the adjacent landscape and topography. Deep overhangs, horizontal roof lines and hip roofs should be considered over towers, turrets, and styles that require steep vertical roof forms.
9. Accent materials should be considered that are harmonious with the natural landscape, such as cobble, cut stone, random stone, medium and rough timber and warm tone brick.

Grading Criteria

1. Buildings should be sited on the lot in a location and configuration that minimizes the extent of grading and the height of resulting cut and fill slopes.

2. Cut and fill slopes over twelve feet in height that are visible from adjacent streets or offsite vantage points should be avoided.
3. Cut and fill slopes over six feet in height and that are visible from adjacent streets or offsite vantage points shall be rounded and blended into adjacent, natural grades.
4. Creative architectural solutions should be pursued that adapt the building to the existing topography and minimize grading. It is, however, understood that grade-adaptive solutions can be prohibitively expensive. A balance between economic feasibility and land form adaptation should be a primary goal.

Multi-family Development

Multi-family development is permitted in the MFR, VC, MU, and CR land use districts and may occur within close proximity to commercial or single family uses. In order to ensure that a harmonious neighborhood character is achieved, the following design standards shall be met:

1. Exterior materials, colors and architectural styles shall utilize earth tones such as brown, tan, green or warm gray. Flat white shall not be used except for trim elements.
2. Roofs shall be "full roof" design consisting of barrel tile, flat tile, retardant shake or other natural appearing material.
3. Buildings shall be set back a minimum of 20 feet from adjacent property lines and shall be buffered through a combination of fencing and landscaping.
4. Multi-family housing shall not be located on slopes steeper than 15% without "stepping" the building with minimum 8 foot wide single story elements.
5. Parking shall be sited away from adjacent single family uses, or shall be buffered through a minimum 10 foot landscaped setbacks or other screening such as fences or walls.
6. Trash containers shall be screened from view through the use of 6 foot masonry walls or solid wood fencing and shall not interfere with parking or internal circulation.

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7. All other parking is subject to the requirements set forth in Chapter 17.18, *Off-street Parking and Loading*, of the El Dorado County Code.
8. Wall materials shall have a natural appearance such as wood, masonry, stucco, stone or simulated stone.
9. Bright wall colors, such as flat white, pink or yellow, are not allowed.
10. Single, unbroken roof lines shall not exceed 60 feet in length.
11. A combination of hip and gable roof types shall be utilized within each multi-family neighborhood.

Commercial Development

Commercial uses are planned in two locations, the Village Center and the Mixed Use area. Both locations are adjacent to Latrobe Road in West Valley Village. In both cases, commercial uses may be combined vertically with high density residential development as well as occurring separately. Comprehensive review of the site design, density and architectural features of commercial development shall be accomplished by the County through the Specific Plan Review process, as determined by the provisions of this Plan.

Commercial Architecture

1. The theme and building forms of proposed structures shall be consistent within each commercial center.
2. Architectural materials that have a natural appearance such as wood, masonry, stucco, stone and simulated stone are encouraged. The use of textured or patterned concrete is acceptable if enough visual interest is incorporated.
3. The architectural design of buildings shall consider the site, relationships to other structures, circulation, climatic orientations and natural vegetation.
4. Buildings shall not have long unarticulated exterior surfaces. Walls shall have varied forms and or texture to create visual interest.
5. Entrances to buildings shall be accentuated architecturally.
6. Horizontal orientation of roof planes is encouraged with attractively detailed parapets or similar elements incorporated to hide roof mounted equipment with emphasis on views from Latrobe Road.



SPECIFIC PLAN

Commercial Circulation

1. Site access shall be minimized to limit disruption to off site traffic flows.
2. Access driveways shall be designed to provide sufficient stacking capabilities to minimize site congestion.
3. Clearly identifiable pedestrian routes from parking areas to buildings shall be incorporated. Textured or patterned paving materials are preferred.
4. Where the community pedestrian and bikeway system fronts a proposed project site, the on-site circulation system shall integrate and provide clearly defined routes for both types of transportation.

Commercial Site Design

1. Parking areas shall be designed so that exterior landscaped buffers are not encroached upon. Berming and landscaping, within the landscape setback, shall be used to partially screen parking areas from view.
2. Service areas, if present, shall be designed to have clear and convenient access without interfering with vehicular and pedestrian circulation.
3. Service areas will be screened from roadways with six foot masonry walls, landscaping or architectural elements.
4. Buildings will be located in such a manner so as to enhance the projects visibility and identity, maintain compatible relationships with adjacent projects, provide convenient access to entrances and to address unique site opportunities.
5. Design of both parking areas and open spaces shall be done so that either element is not concentrated in one area. Large expanses of parking will be discouraged, smaller linked clusters of separated parking lots are preferred. Larger parking areas may be developed provided that landscaping is a minimum of 10% of the lot area and planters and landscape strips are a minimum of 5 feet.
6. Shade trees shall be required to provide the following minimum coverage of parking lots within 15 years of issuance of building permits:

5-24 spaces	30%
25-49 spaces	45%
50 or more	50%

Sign Guidelines

Freestanding Commercial and Office Signing

1. Freestanding pole signs are prohibited.
2. At each street entrance to the Village Center, one detached sign on each side of the street shall be permitted. The information displayed on the signs shall be limited to the name and symbol or logo of the center. No advertising should be permitted on these signs.
3. Such signs shall be low-profile signs less than 6 feet in height with maximum message area of approximately 100 square feet.
4. Such signs shall be located in the landscape setback at least 10 feet from the street right-of-way line and comply with site distance requirements.
5. Wood and other natural earth materials such as concrete, aggregate, stone, brick slumpstone, or other acceptable material of a natural character may be used for these signs. Predominantly plastic signs shall not be permitted. Signs shall be integrated with landscaping.

Detached Business Identification Signs

1. One detached sign shall be permitted on each development site for the purpose of identifying the occupant or occupants of the site. The information displayed on these signs shall be limited to the name and symbol of the business occupying the site or the name and symbol of the businesses occupying the site and the street and street number. No advertising shall be permitted on these signs.
2. Signs shall be less than 4 feet in height with a maximum message area of 32 sq. ft. When multiple businesses are proposed to occupy a single site, signs may be 6 feet in height with a maximum message area of 40 square feet.
3. Wood and other natural earth materials such as concrete, aggregate, stone, brick slumpstone, or other acceptable building materials for these signs are acceptable. The choice of materials should match major building materials. Signs shall have back-lighting or be externally illuminated. District identifications signs shall not be combined with business identification signs.

Mounted Business Identification Signs

1. One mounted sign shall be permitted on each structure, or in the case of multiple businesses in a single structure, the wall frontage for that business, for the purpose of identifying the occupant. The information displayed on this sign shall be limited to the name and symbol of the occupant and address.
2. Mounted signs attached to vertical surfaces of a building or building-associated wall shall be allowed, with the provision that such signs appear as an integral part of the overall architectural and site design concept. Sign materials shall complement those of the structure to which they are attached. The attached sign area shall not exceed three percent (3%) of the total area of the walls on any face of the building to which they are attached.

Fencing

Fencing within the Valley View Plan is intended to provide a consistent design and level of quality throughout the Plan area. Because the Plan includes both natural and man-made environments, fencing shall respect the landscape by blending harmoniously and unobtrusively with its surroundings. The following fencing standards are established for a number of different applications. While a consistent use of materials and finish is intended, modifications from the following specifications shall be permitted to be approved by the Architectural Review Committee to accommodate changes in the availability of materials and the introduction of new products.

A number of differing applications are illustrated. Perimeter fencing along collector roads will be installed at the time adjacent private lands are developed to provide security, limit access and to complement the streetscape. Where a collector road is adjacent to an open space area a more open design is proposed. Fencing of interior lot lines and, for East Ridge, to enclose development envelopes of larger, estate parcels shall be more informal. In East Ridge, such fencing shall also be less opaque, allowing for a less intrusive visual element in the landscape.

Perimeter Fencing and Walls

High quality wood fencing and decorative stone accent features shall be provided in perimeter fencing surrounding commercial centers and residential neighborhoods in West Valley and White Rock Villages.

Figure 9.3 illustrates the fencing standard to be used along arterial and collector streets where no access is allowed. Figure 9.4 shows a perimeter fence along collector streets in Residential Neighborhoods in West Valley and White Rock Villages.

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Interior Fencing

Within the SFR, CR and MFR districts and in ER districts within West Valley Village, interior fencing shall conform to Figure 9.4 except that masonry pilasters and trellis details shall not be required except at exposures facing street sides or other public views. Two by six inch mid-rails may be eliminated for any fence 6 feet in height or less.

Figure 9.3

Commercial Fencing Perimeter Site Applications

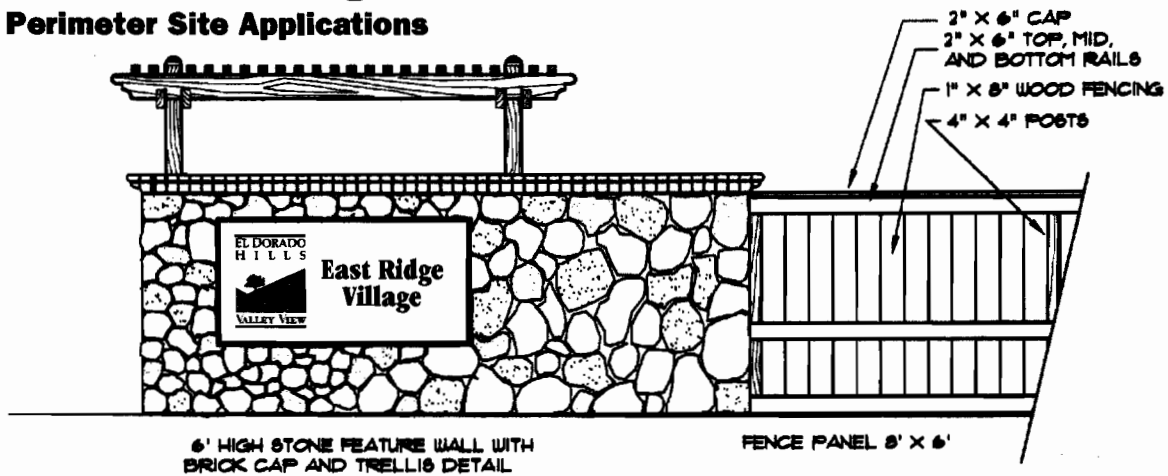


Illustration not intended to depict final designs.

Figure 9.4

Perimeter Residential Fencing Collector Street Applications

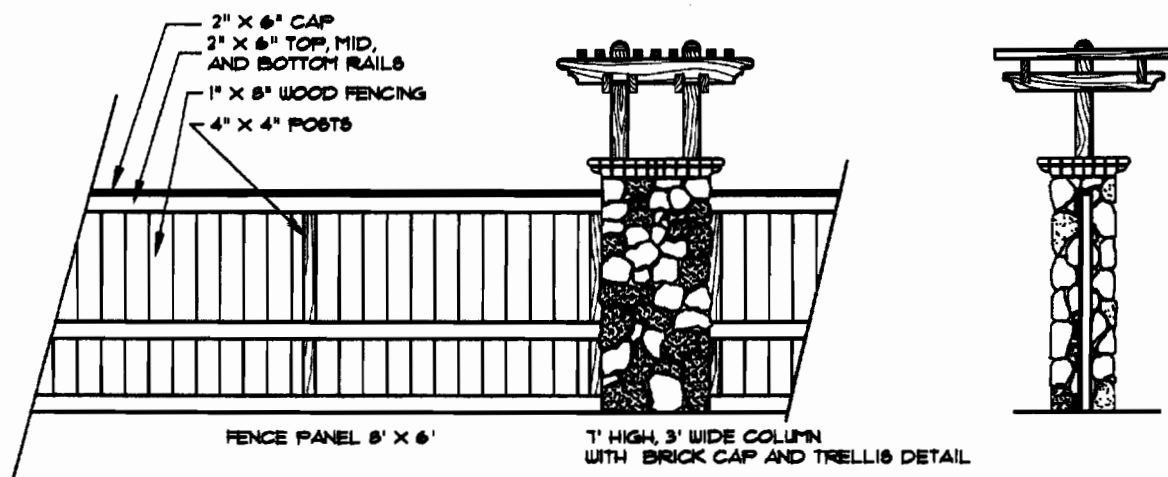
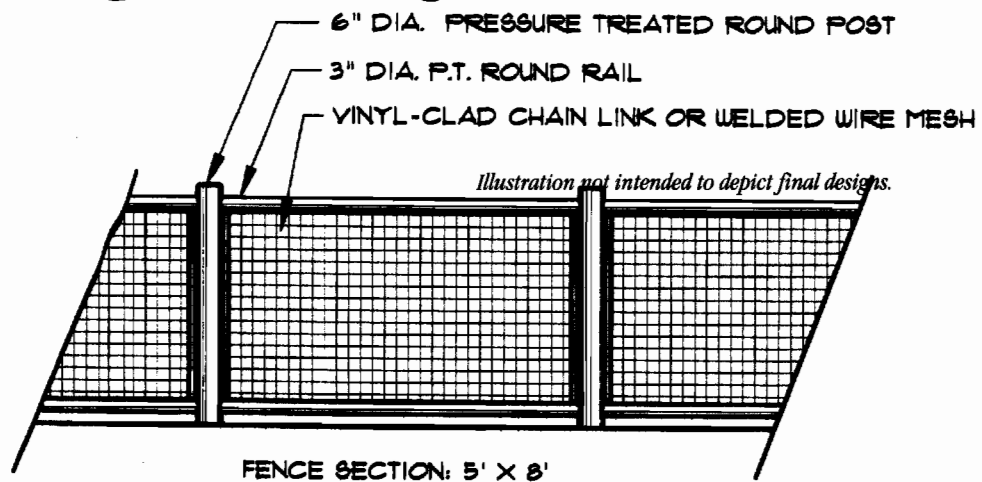


Illustration not intended to depict final designs.

In ER districts in East Ridge Village, fencing shall be provided according to the design illustrated in Figure 9.5 or such other design as may be approved by the Architectural Review Committee. On parcels containing woodland resources, the area fenced may be limited to a portion of the lot as described in Chapter 8, *Development Requirements Within Oak Woodlands*.

Figure 9.5

East Ridge Interior Fencing

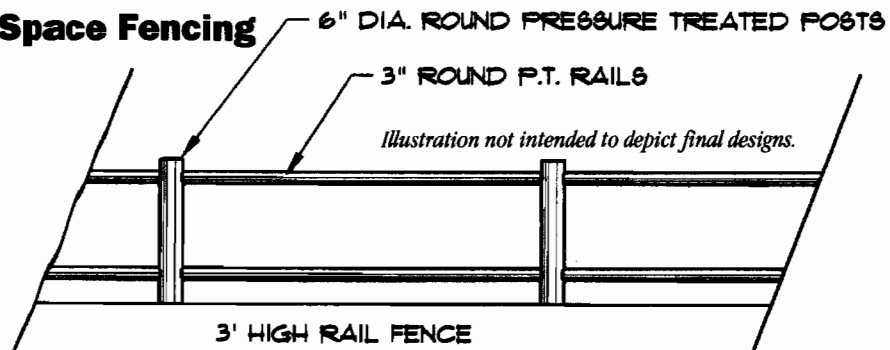


Special Fencing Applications

Fencing adjacent to open spaces, where necessary, should allow for the visual enjoyment of the open area while providing a barrier to vehicular access. Figure 9.6 shows a simple two rail fence to be employed adjacent to open space areas where such access, particularly vehicular access is to be discouraged.

Figure 9.6

Open Space Fencing



Lighting

Lighting fixtures in outdoor public spaces will be designed to harmonize with the overall design theme and prevent undesirable glare into surrounding properties. The following policies shall govern the design and placement of such lighting:

1. Standard street lights shall be installed only at intersections and other locations where illumination is made necessary by public safety concerns where required by the El Dorado County Department of Transportation.
2. Street signs may be integrated with low intensity illumination as illustrated in Figure 9.7. Such light fixtures shall be shielded and limited to no more than twenty feet in overall height.
3. Freestanding parking lot lighting in commercial and Multi-family parking lots shall utilize shielded down-lighting fixtures and shall be limited to no more than 30 feet in height. Lighting may be attached to building surfaces but shall be shielded to prevent overcast of illumination onto surrounding properties.
4. Lighting shall be avoided where it may reflect into open space areas except where necessitated by public safety concerns.

Figure 9.7

Lighting Standard

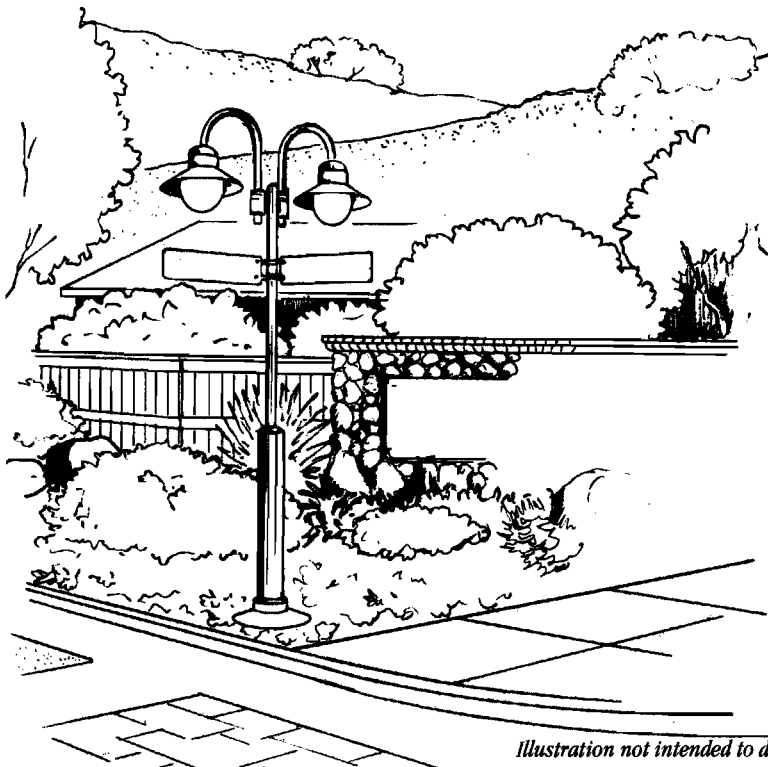


Illustration not intended to depict final designs.

Landscaping

Parkway Landscaping

Desired effect of Landscape:

The overriding criteria behind the selection of the plants in each of the following plant lists is to provide a plant palette that will result in a landscape in developed portions of the Plan area, particularly West Valley and White Rock Villages, that will have a tidy manicured appearance year round with minimal maintenance and low water consumption. Shrub masses should be maintained as "masses" and not pruned into individual "pom poms". Land form should emulate the flowing contours of the foothill setting punctuated with the native rock outcrops, particularly with settings of the "tombstone" formations prevalent on the property.

An ample supply of reclaimed water is available for parkway landscape purposes, making possible the use of turf as a major landscape element. Trees and shrub plantings, by their nature, are a long term investment and should, in general, be of a water conserving type. Exercise of prudence in the permanent plantings will give a buffer to future water shortages so that the higher investment trees and shrubs can survive water shortage. The temporary abandonment of some lawn areas can be quickly regenerated following drought times.

The use of perennials and "scruffy" appearing shrubs such as *buddleia* or *perovskia*, for example, is discouraged as distracting from the tidy manicured look desired for the parkways. Within the flow of the evergreen shrubbery, focal points of large scale colorful shrubs should provide seasonal accents.

Landscaping at village and neighborhood entry points should be further enhanced with areas of seasonal color, utilizing the rich selection of flowering annuals, perennials and bulbs available. "Tidiness and manicured look" should extend to the seasonal plantings as much as to the permanent ones.

The lists are organized by plant type and matrixed to the various major corridors so that some variety of identity to each corridor is accomplished. Many additional plant material names could well be added to any of these lists; the intent is to provide a core palette of species that meet the criteria. It is expected that individual site landscape plans will adhere to the intent of these landscape parameters, and embellishment beyond these parameters should be limited in scope.

Major Street Theme Trees

These are large-growing trees to set the theme and identity for the major corridors.

CRITERIA:

- Fast rate of growth, large mature size
- Relative disease- and pest-free, clean habit
- Non invasive / non-surface rooting
- Deciduous — with fall color or spring flowers a bonus
- Relative low water requirement

<i>Acer rubrum</i>	Red Maple
<i>Fraxinus 'Raywood'</i>	Raywood Ash
<i>Ginkgo biloba</i>	Maiden Hair Tree
<i>Liquidambar styraciflua</i>	Sweet Gum
<i>Liriodendron tulipifera</i>	Tulip Tree
<i>Platanus acerifolia</i>	Sycamore
<i>Quercus coccinea</i>	Scarlet Oak
<i>Quercus rubra</i>	Red Oak
<i>Quercus lobata</i>	Valley Oak
<i>Robinia 'Purple Robe'</i>	Idaho Locust

Secondary Parkway Trees

To be used to 'back up' the Avenue trees.

CRITERIA:

- Medium to fast rate of growth, medium mature size
- Relative disease- and pest-free, clean habit
- Deciduous or evergreen — fall color or spring flowers a bonus
- Relative low water requirement

<i>Cedrus deodara</i>	Deodar Cedar
<i>Cedrus libani</i>	Cedar of Lebanon
<i>Celtis australis</i>	European Hackberry
<i>Celtis sinensis</i>	Chinese Hackberry
<i>Laurus nobilis</i>	Grecian Laurel

<i>Magnolia grandiflora</i>	Southern Magnolia
<i>Nyssa sylvatica</i>	Tupelo
<i>Pinus species (except radiata)</i>	Pine
<i>Pistacia chinensis</i>	Chinese Pistache
<i>Pyrus calleryana 'Bradford'</i>	Bradford Pear
<i>Pyrus calleryana 'Aristocrat'</i>	Aristocrat Pear
<i>Quercus agrifolia</i>	Coast Live Oak
<i>Quercus ilex</i>	Holly Oak
<i>Quercus virginiana</i>	Southern Live Oak
<i>Quercus wislizenii</i>	Interior Live Oak
<i>Sapium sebiferum*</i>	Chinese Tallow Tree
<i>Sequoia sempervirens</i>	Coast Redwood

*use only where roots have plenty of room

Color Accent Trees

For use in focal point areas or accent points in the parkway.

CRITERIA:

- Colorful flowers, foliage or fruit (non messy)
- Medium to low water requirement

<i>Cercis canadensis</i>	Eastern Redbud
<i>Crataegus species</i>	Hawthorn
<i>Koelreuteria paniculata</i>	Golden Rain Tree
<i>Lagerstroemia</i>	Crape Myrtle
<i>Magnolia soulangiana</i>	Saucer Magnolia
<i>Malus species</i>	Flowering Crabapple
<i>Prunus species</i>	Flowering Plum
<i>Pyrus kawakaii</i>	Evergreen Pear
<i>Sophora japonica</i>	Japanese Pagoda Tree

9 **Community Design**

Screen Trees

To be used for large scale screening of objectionable views or for privacy.

CRITERIA:

- Fast rate of growth
- Evergreen
- Medium to low water requirement

Calocedrus decurrens

Cedrus deodara

Cupressus glabra

Pinus species

Quercus (evergreen varieties)

Sequoia sempervirens

Incense Cedar

Deodar Cedar

Arizona Cypress

Pine

Oak

Coast Redwood

Wetland Grove Trees

To be used in drainage areas where "enhanced" naturalized plantings are desirable.

CRITERIA:

- Compatible with drainage environment
- Grove type of adaptability

Acer buergeranum

Acer truncatum

Betula species

Nyssa sylvatica

Populus fremontii (male only)

Quercus wislizenii

Trident Maple

Chinese Maple

Birch

Tupelo

Western Cottonwood

Interior Live Oak

Transition Buffer Zones

This list of plants includes low-fuel-buildup, drought-tolerant plants to be used in the transition Buffer Zone of large lots bordering on open space. See the Fire Safety Plan for additional recommendations—such as clear space requirements. All plantings in fire risk areas should be periodically thinned to reduce fuel load as may be required by an approved Fire Safety Plan. This zone would have temporary irrigation for plant establishment only.

LOW-GROWING SHRUBS

<i>Arctostaphylos</i> (low-growing species)	Manzanita
<i>Artemisia caucasica</i>	Silver Artemisia
<i>Atriplex glauca</i>	Salt Bush
<i>Atriplex semibaccata</i>	Creeping Saltbush
<i>Ceanothus</i> (low-growing varieties)	California Lilac
<i>Cistus crispus</i>	Rockrose
<i>Cistus salvifolius</i>	Sage-leaf Rockrose

PERENNIALS / BULBS / ANNUALS

<i>Achillea species</i>	Yarrow
<i>Brodiaea</i>	Brodiaea
<i>Calochortus species</i>	Mariposa Lilies
<i>Eschscholzia californica</i>	California Poppy
<i>Fritillaria (native)</i>	Chinese Lanterns
<i>Lupinus species</i>	Lupine
<i>Mimulus species</i>	Monkey Flower
<i>Penstemon species</i>	Penstemon
<i>Salvia columbarie</i>	Chick
<i>Salvia sonomensis</i>	Creeping sage
<i>Santolina chamaecyparis</i>	Lavender Cotton
<i>Santolina virens</i>	Green Santolina
<i>Zausneria species</i>	California Fuchsia

SPRING BULBS [Note: these "exotics" will thrive under oaks with no summer water.]

(Daffodils, Narcissus, Scilla, Iris)

Plant Species to Avoid in Transitional Areas

These species are known to be highly invasive when they are allowed to escape into the natural environment.

<i>Hedera canariensis</i>	Algerian Ivy
Bamboo	All varieties
<i>Cynodon dactylon</i>	Bermuda Grass
<i>Genista</i> and <i>Spartium</i>	Broom
<i>Hedera helix</i>	English Ivy
<i>Pennisetum setaceum</i>	Fountain Grass
<i>Lonicera japonica balliana</i>	Halls Honeysuckle
<i>Centranthus rubra</i>	Jupiter's Beard
<i>Cortaderia selloana</i>	Pampas Grass
<i>Vinca major</i>	Periwinkle
<i>Ligustrum ovalifolium</i> and <i>Japonicum</i>	Privet
<i>Stenotaphrum secundatum</i>	St. Augustine's Grass
Tradescantia	Trailing Varieties

Tree Species to Avoid in Public Area Parkways

In general trees whose form or growth habit are not in keeping with the foothill environment, or whose growth or rooting habits are damaging to paving or structures; those known to be so prolific as to become weedy or those known to be disease prone, host damaging pests, or produce fruit or nuts that would be messy or an attractive nuisance.

- Acacia species
- Bambos and Canes
- Chinese Tree of Heaven
- Cottonwood (female)
- Eucalyptus species
- Japanese Privet
- Leland Cypress
- Lombardy Poplars
- Mimosa
- Modesto Ash
- Monterey Pine



SPECIFIC PLAN

Mulberry
Palms
Weeping Willow
White Alder

Large Shrubs for Parkway Backdrop and Screening

CRITERIA:

- Fast growth rate, large shrub form
- Minimal maintenance at maturity
- Tidy appearance
- Medium to low water requirement
- Evergreen - hardy

<i>Arbutus unedo</i>	Strawberry Tree
<i>Ceanothus (large growing varieties)</i>	California Lilac
<i>Cotoneaster lacteus</i>	Red Clusterberry
<i>Escallonia rubra</i>	Red Escallonia
<i>Escallonia fradesii</i>	Escallonia
<i>Euonymus japonica</i>	Evergreen Euonymus
<i>Feijoa sellowiana</i>	Pineapple Guave
<i>Juniperus (large species)</i>	Juniper
<i>Ligustrum 'Texanum'</i>	Texas Privet
<i>Leptospermum species</i>	Tea Tree
<i>Nerium oleander</i>	Oleander
<i>Photinia fraseri</i>	Frasers Photinia
<i>Pittosporum tobira</i>	Mock Orange
<i>Prunus caroliniana</i>	Carolina Cherry Laurel
<i>Prunus laurocerasus</i>	English Laurel
<i>Raphiolepis 'Majestic Beauty'</i>	India Hawthorn
<i>Viburnum suspensum</i>	Sandankwa Viburnum
<i>Viburnum tinus</i>	Laurustinus
<i>Xylosma congestum</i>	Xylosma

Large Deciduous Flowering Accent Shrubs

CRITERIA:

- Shrubs to be interspersed into the evergreen backdrop for large scale seasonal color display
- Tidy appearance (clean look when not in flower)
- Medium to low water requirement

<i>Cercis occidentalis</i>	Western Redbud
<i>Chaenomeles japonica</i>	Japanese Flowering Quince
<i>Forsythia species</i>	Forsythia
<i>Lagerstroemia (shrub forms)</i>	Crape Myrtle
<i>Punica granatum (fruitless type)</i>	Pumegrante
<i>Roses (floribunda type)</i>	Roses
<i>Styrax officinalis californicus</i>	California Styra

Small to Medium landscape Shrubs for General Application

CRITERIA:

- Dependable, hardy, easy maintenance shrubs
- Evergreen tidy appearance
- Medium to low water requirement
- Seasonal color accents

<i>Abelia grandiflora 'Edward Goucher'</i>	Dwarf Abelia
<i>Arctostaphylos 'Howard McMinn'</i>	Manzanita
<i>Berberis thunbergii</i>	Japanese Barberry
<i>Buxus species</i>	Boxwood
<i>Carpenteria californica</i>	Bush Anemone
<i>Ceanothus species</i>	California Lilac
<i>Ciscus species</i>	Rockrose
<i>Coprosma kirkii</i>	Creeping Coprosma
<i>Correa pulchella</i>	Australian Fuchsia
<i>Cotoneaster species</i>	Cotoneaster
<i>Dietes vegeta</i>	Fortnight Lily
<i>Escallonia 'Terri'</i>	Terri Escallonia

<i>Juniperus species</i>	Juniper
<i>Lavandula species</i>	Lavender
<i>Mahonia species</i>	Oregon Grape
<i>Nandina domestica</i>	Heavenly Bamboo
<i>Phormium tenax</i>	New Zealand Flax
<i>Pittosporum tobira varieties</i>	Pittosporum
<i>Pyracantha 'Red Elf'</i>	Firethorn
<i>Raphiolepis species</i>	India Hawthorn
<i>Rosa floribunda varieties</i>	Floribunda Roses
<i>Rosmarinus species</i>	Rosemary
<i>Salvia gregii</i>	Autumn Sage
<i>Viburnum 'Spring Bouquet'</i>	Viburnum

Small to Medium Shrubs for Special Applications

CRITERIA

- For limited use
- Where cultural conditions allow these higher water-use plants
- Could be a welcome addition to the plant palette

<i>Azalea southern indica 'Duc de Rohan'</i>	Hybrid Azalea
<i>Azalea southern indica 'Fielders White'</i>	Hybrid Azalea
<i>Azalea southern indica 'George Taber'</i>	Hybrid Azalea
<i>Azalea southern indica 'Phoenicia'</i>	Hybrid Azalea
<i>Camellia japonica & sasanqua varieties</i>	Camellias
<i>Erica species</i>	Heath
<i>Gardenia species</i>	Gardenia
<i>Hydrangea species</i>	Hydrangea
<i>Loropetalum varieties</i>	Loropetalum
<i>Osmanthus fragrans</i>	Sweet Olive
<i>Pieris japonica</i>	Lily of the Valley Shrub

Herbaceous or Perennial Species

These permanent planting, colorful perennials should be used at accent points. Many other perennials could be acceptable in limited use with appropriate maintenance to maintain tidy appearance.

CRITERIA

- Dependable, relatively low maintenance
- Disease / pest resistant
- Relative low water requirements
- Tidy appearance

<i>Achillea tomentosa</i>	Yarrow
<i>Agapanthus species</i>	Lily of the Nile
<i>Artemisia 'Powys Castle'</i>	Wormwood
<i>Euryops pectinatus 'Green Gold'</i>	Euryops Daisy
<i>Hemerocallis species</i>	Daylily
<i>Santolina virens</i>	(No common name)
<i>Tulbaghia violacea</i>	Society Garlic

Vines

These vines can be used for masking large expanses of wall with relative low maintenance. Other High maintenance vines such as wisteria, rosa banksae, or clematis armandi can be welcome additions in controlled situations.

CRITERIA

- Self-adhering climbers
- Low to medium water requirements
- Relative low maintenance

<i>Ficus pumila</i>	Creeping Fig
<i>Macfadyanas unguis cati</i>	Cat Claw Vine
<i>Parthenocissus tricuspidata</i>	Boston Ivy

Ground Covers for Mass Application

CRITERIA

- Dependable cover
- Disease & pest resistance
- Low maintenance
- Low to medium water requirement

<i>Arctostaphylos</i>	Manzanita
<i>Ceanothus horizontalis & gloriosus</i>	California Lilac
<i>Coprosma kirkii</i>	Creeping Coprosma
<i>Cotoneaster (evergreen prostrate varieties)</i>	Loropetalum
<i>Hypericum calycinum</i>	St. Johnswort
<i>Juniperus (prostrate varieties)</i>	Sweet Olive
<i>Myoporum parvifolium</i>	Myoporum
<i>Trachelospermum</i>	Jasmine
<i>Vinca minor</i>	Periwinkle

Ground Covers for Smaller Area Applications

CRITERIA

- Flower mass
- Easy care
- Hardy

<i>Gazania 'Mitsuwa'</i>	Gazania
<i>Osteospermum fruticosum</i>	Trailing African Daisy
<i>Scaevola 'Mauve Clusters'</i>	Mauve Clusters

Oak Woodland Conservation Techniques

General Tree Care

Before construction begins, it is important to have the trees in the most healthy, vigorous condition as possible so that they can withstand the inevitable stress of construction activities. The following recommendations pertain only to trees that may be directly impacted by roads, houses, and other hard surfaces.

1. *Pruning trees.* Prune to remove deadwood and end-weights of unusually heavy limbs. End-weight removal should be done in such a manner that the cut leaves a lateral branch of at least 1/3 the diameter of the removed portion. No stub cutting should be allowed. Leaving stubs as well as excessive pruning is not only unsightly but it encourages vigorous watersprout growth which is susceptible to mildew. Excessive pruning can also result in sunburning of exposed limbs, poor branching structure, and added maintenance costs. Pruning should follow International Society of Arboriculture pruning standards. Pruning must be supervised by an arborist.

2. *Fertilize and Aerate the Soil.* It is advisable to fertilize the trees before construction begins. Deep root liquid “feeding” with a fertilizer high in nitrogen, but also containing phosphorous and potassium, is recommended.

Root Protection Zone

1. *Soil Compaction and Root Damage.* Protect the trees from soil compaction and root and trunk damage from the activities of heavy equipment and parking of vehicles. Soil compaction reduces air space in the soil and lessens the trees ability to “breathe”. The majority of a tree’s root system, though extensive, is relatively shallow.

Protect the root zone by building *protection fences* around individual trees. A good starting point for protection is the dripline area of the tree. The dripline radius is an easily identifiable indicator of the tree’s hazard zone to operators of heavy equipment. It is important to keep in mind that the dripline area does not indicate the true area of the tree’s roots since a large tree’s actual root zone can extend several times again beyond the distance of the dripline radius. Therefore, the farther the placement of the protection fences from the tree as possible will help to insure its survival. The fences should be installed before construction begins.

It is best that grading occur when the soil is dry in order to avoid excessive compaction.

2. *Grade Changes—cutting.* Avoid making grade changes—changes in the ground level—within the dripline of the trees. Grading is probably the principle cause of death of oak trees in new construction sites. Grading damages the tree’s root system which lie in a shallow zone near the surface of the soil. Cutting the tree’s roots can cause considerable damage to the trees, and impairs the tree’s ability to absorb water and nutrients. Precaution should be taken not only to protect large roots, but just as importantly the smaller “feeder” roots.

When roots have been exposed by grading, they should be cut back to the soil line under the supervision of a qualified arborist. Grading cuts expose larger amounts of soil surface and therefore causes greater moisture loss from the root zone. During hot weather, it may also be important to water the cut surface and cover with opaque plastic or mulch. When lowering the grade around trees, keep cuts as far as possible away from the tree by installing walls. Use of discontinuous footings will minimize injury to roots.

3. Grade Changes—Adding Fill and Pavement. The addition of fill can be as equally damaging as the removal of top soil. Fill, especially heavy clays, prevents the root's access to oxygen, an element critical to the plant respiration. Respiration is related directly to the processes of active water absorption and nutrient uptake. Fill also prevents water percolation into the root zone. If fill must be added to a site, there are three possible solutions:

A. Retaining Walls. Retaining walls in the root protective zone are designed to hold back the soil above or below an existing tree, thus avoiding the addition of fill directly on the root zone. Retaining walls should be avoided if possible as they can cause critical areas of the dripline to be buried or can sever the roots. If retaining walls are used, then use a discontinuous pier type of foundation.

B. Crushed stone or gravel. If a porous soils is used as fill and the fill is no more than about 18 inches deep, then several layers of 2-3 inch stone can be spread over the original soil surface. Start with a thin layer just beyond the dripline and build to a height of the fill at the base of the tree. This allows air, water and nutrients into the root system.

C. Spoke and Wheel Aeration Systems. Aeration systems should be designed for each individual tree. They permit air and water to reach the tree's roots. Aeration systems are installed at the original grade before any fill is added. A concrete or asphalt surface used in combination with an aeration system should be used.

4. Trenching. The digging of utility trenches can result in the destruction of the trees' roots. No trenching should be done anywhere within or near the dripline of the tree. If trenching must be done, then the utilities should be placed in a conduit which is bored or tunneled through the soil; this reduces the damage to the roots. If utility conduits are not available, then try to place all of the utilities in a single trench. This may require discussion with the various utilities companies as it can be difficult to coordinate their various trenching specifications and timing needs. When roots are exposed in the

trenching process, they should be covered with wet burlap and kept moist until the soil is returned.

5. Drainage Alterations. Avoid grading designs that result in a tree being in a depression that collects water, especially during the summer season when oaks need dry soil. The soil should drain away from the trunk area.

Roof downspouts and paving near a tree may result in either excessive water close to the trunk during the rainy season, or conversely, preventing water from reaching the root zone. Appropriate measures must therefore be taken.

6. Pavement over the root system. Under certain circumstances, it may be possible to put a hard surface, such as a driveway, over a part of the root system (about 25%). At least two alternative designs are possible. Interlocking paving stones may be placed over the soil surface. They allow the roots to breathe as well as obtaining water and nutrients. Another possible solution is using pavement, but placing 2-3" stone underneath the pavement, again allowing the tree to breathe as well as obtaining water and nutrients. (See figure 7 & 8).

7. Retaining walls and fences. When installing fences and retaining walls, it is important to avoid any trenching or digging if possible. In place of trenching for foundations, the use of concrete pier pilaster foundation, with discontinuous footing, is recommended.

8. Fertilization. Before watering and mulching, apply a water soluble nitrogen fertilizer on to the soil surface. Approximately 4 pounds per 1000 sq. ft. are recommended. Immediately water and spread mulch.

9. Drought avoidance—irrigation. Soil disturbance during the summer months, and especially during periods of drought, can severely impact oak trees. Prior to invading the root zone, it will be necessary to water that part of the root zone that will remain. The top 3 ft. of the root zone should be thoroughly wetted. This will not only help a generally stressed tree, but it will also begin to assist the tree in growing roots needed to compensate the roots that will be lost.

A soaker hose should be placed about 4 ft. away from the trunk to the outer area of the root zone that is to be protected. Irrigate overnight or for about 8-10 hours. Water slowly to avoid runoff. If runoff occurs early on, turn the water off for several hours, and then water again.

10. Drought avoidance—mulching. Prior to soil disturbance, mulch the area—to a depth of 4-6 inches - that will be protected. Along with irrigation, as

mentioned above, mulching the root zone area will insulate the tree from water loss and encourage new roots to grow.

11. *Root pruning.* When trenching or a grade change is made in the root zone, it is important that the roots not be ripped or that braided remains of roots left dangling. Roots that are 1" or more in diameter should be preserved. Far better, the roots should be cleanly pruned back to 1-2 inches of the soil line. When trenching is done with a backhoe, then it is best to have an arborist on the site to prune the roots as they are encountered.

12. *Protection of exposed root zone.* The embankment of the cut root zone should be moistened and covered to retard water loss. Layers of burlap, moistened on a regular basis, should be placed on the cut banks.

13. *Tree removal.* Should trees be removed, they should be taken down by a professional, and the stumps removed with a router. The use of a backhoe is not recommended, as that tends to disturb the root system.

Oak Woodland Landscaping Techniques

Tree Maintenance

1. *Irrigation.* Most California oaks are adapted to cool, moist winters and hot, dry summers. They prefer well-drained soils. A similar environment should be maintained in developed locations. In addition to following the above procedures, it is necessary to adhere to certain practices. Do not water in the summer months, especially near the base of the tree. If water is done during the summer months, infrequent watering is preferred to frequent watering. Excessive and/or frequent watering encourages the growth of life-threatening root fungi.

2. *Gardening Techniques Beneath Oaks.* As native oaks do not tolerate summer watering, it is important to select ornamental plants that are tolerant of summer drought conditions. Many native plants are well suited in developed oak landscapes and are not only attractive, but require low maintenance.

Placing mulch in the root zone of oaks is beneficial. It adds humus, improves aeration and fertility, and prevents excessive evaporation. Leaf litter or wood chips should be used as mulching. The source of the chips should be monitored. Do not use redwood chips as they contain certain undesirable chemical. Do not use chips that might contain seeds of weed trees and shrubs.

Do not plant within 6 to 10 feet of the trunk. Do not use plants that require supplemental water once established. Choose drought tolerant plants and irrigate with a drip-system for not more than two summers.

Oak Tree Regeneration Techniques

Direct Seeding of Oak Acorns

Oaks are readily established by direct seeding of acorns. Methods of collection and preparation of acorns includes the following:

- Valley oak acorns should be collected locally, either on site or within a several mile radius.
- Acorns are “ripe” when the cap can be separated from the seed.
- Acorns should preferably be collected directly from the tree; those lying on the ground are usually dried out, diseased, or infected by insects.
- Collect the acorns by using a long pole to “beat” the branches, causing the acorns to fall onto a tarp beneath the tree.
- Keep only the healthiest and largest acorns. Shriveled or diseased acorns should be thrown out. Place the acorns into a container of water to further weed out unhealthy ones which float to the top.
- The acorns should then be stored in a controlled environment to maintain their viability. Place acorns in zip-lock polyethylene bags (that breathe) with a moist medium such as a 3:1 perlite and vermiculite mixture, and store in a refrigerator at approximately 38 degrees Fahrenheit.
- Plant the acorns from early fall (after sufficient rains) to early spring.
- At planting time, place 2-3 acorns per hole, burying them at depths from 1-3 inches.
- Protect the acorns with a planting sleeve that is buried 3-5 inches beneath the soil surface for protection from rodents.

Containerized Seedling Materials

Nursery Conditions/Health Requirements

Seedlings raised from locally collected materials shall be contract grown at a nursery experienced in cultivating native plants. Plants can be grown in various sized containers, but containers that accentuate long root growth should be used. Several commonly used in restoration practice include: 2.5 x 2.5 x 5 inch treebands; 9-inch dee-pots; and 4 x 4 x 14 inch treebands. Smaller sized containers are less expensive, and are more readily available over a shorter time interval after ordering. A disadvantage of small-sized materials is that young plants can be fragile and more difficult to establish (and therefore more expensive in the establishment phase). An advantage of larger sized plant materials is that they can be somewhat more hardy in the establishment phase (thereby requiring less care), but plants will not fair well if rootbound.

The plants shall be grown under similar climatic conditions to those in the locality of the project site. Plant material shall be grown for at least 6 months, but no more than two years, in the containers in which they are delivered before planting in the ground.

Plants must show vigorous growth and health characteristics. Vigor, health, and root development is more important than height and spread. Plants should be free of insects and disease, disfiguring knots, sun-salt injuries, abrasions of the bark, or other objectionable defects.

Roots should be well distributed through the entire soil ball, be fully developed without restriction. No trees shall be used that are rootbound. Roots shall not be bent, curled, twisted, or deformed as a result of the growing process.

Delivery

The plants shall be handled and transported in a manner that will prevent damage to the branches, roots, shape or future development. In open vehicles, the plants should be covered with a tarp. The root mass shall be kept moist at all times.

Delivery inspection shall be made after previously inspected trees have been delivered to the job site. A dated notice of approval shall then be issued. If any of the plants are unacceptable, then the Contractor will notify the nursery or party responsible for delivery, in writing, why the plants are unacceptable.

Protection and Handling

Plants that have been delivered to the job site may need protection from drying conditions, e.g., watered in the event that they are not planted immediately. Plants that are dry or wilted shall not be planted.

Seedling Planting Methods

The procedure for the planting of seedling container material is as follows:

- Within a 3 foot square area, clear all weeds, herbaceous ground cover, and other materials to reduce competition for water and nutrients.
- For sloping terraces, dig a 12-18 inch wide terrace that slopes back slightly into the hillside. No terrace is needed on level ground.
- Excavate a planting hole approximately 1.5-2 times the height and 2-4 times width of the root ball (smaller hole sizes are permitted when the soil is loose; conversely, larger hole sizes are recommended in hard soils). For 9-inch deep pots, this will be approximately 12-18 inches deep and 10-12 inches across. Roughen the sides of the planting hole.
- Place a 1/2 ounce of slow release fertilizer in the bottom of the hole and mix with native soil used to back fill the bottom of hole. Tamp and fill until the depth of the hole is 0.5 inches less than the root ball depth.
- Remove the plant from the container without breaking the root ball. Scarify or roughen the sides and loosen the bottom of the root ball if the plant is rootbound.
- Place the plant in the hole, hold plant in place, and back fill with native soil. Be sure to remove larger rocks, weeds and other debris from the soil mix. Plant should be installed so that the root crown is 1/2 inch above the soil of the root ball to allow for settling. Tap soil in planting hole to remove air pockets. Add water to planting hole to allow for settling of the soil.
- Construct a 3-inch high berm for a temporary irrigation basin (depending upon the type of permanent irrigation, a larger basin may be constructed at this time).
- Place a 3-4 inch thick layer of mulch in the 3 foot square planting area (but do not bury root crown).
- Place 3 (-4) foot square landscape fabric around plant, covering the mulch area. Secure each of the 4 corners with a six inch staple.
- Pour 2-3 gallons of water into the planting basin.

- Tree shelters shall be placed over the plant, inserting the lower surface of the tube 0.5-2 inches into the soil surface (inserting the tubes into moist soil is easier). The tree shelter shall therefore be sealed at the base with soil to prevent air from entering directly into the shelter from the bottom. The tree shelter stake should be driven into the ground approximately 3-5 inches, and then the tube tied or fastened to the stake with the ratchet locking ties.