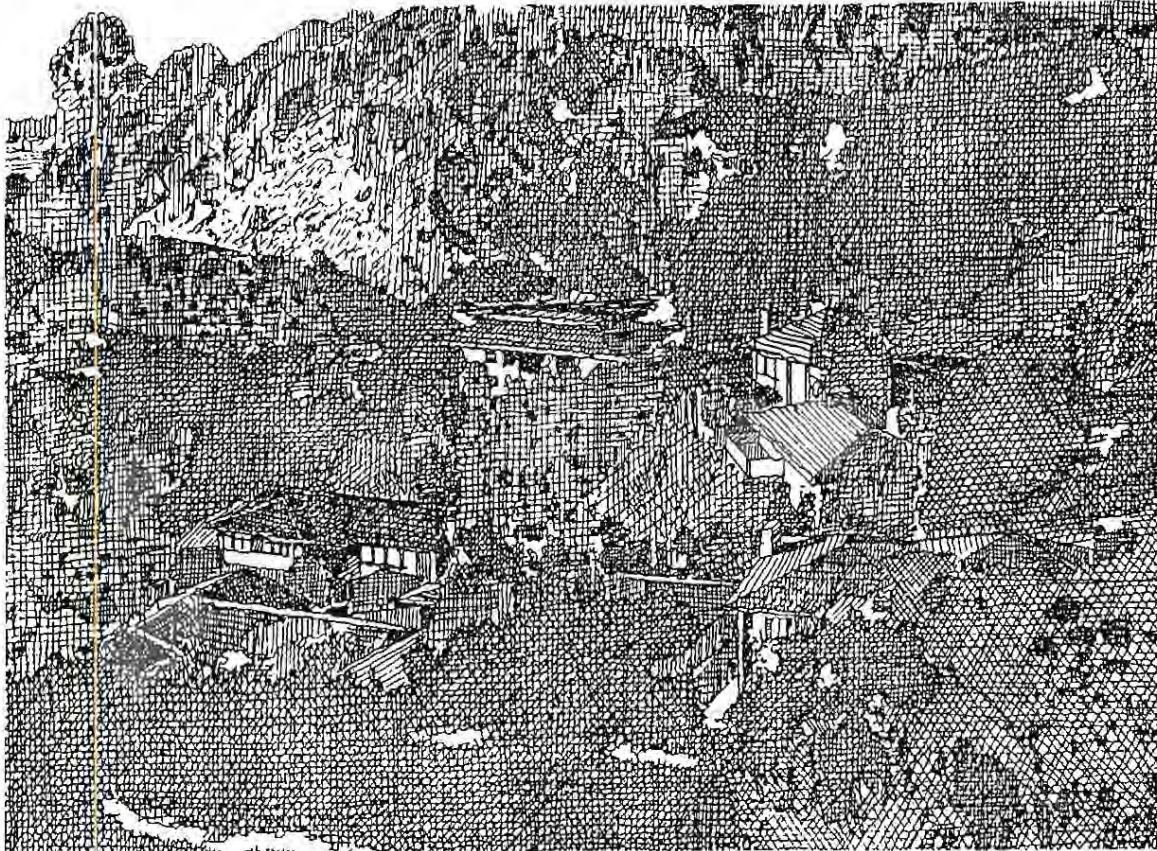


IV.A. Design Guidelines Applicable To All Hillside Residential Development Projects



This section of the Design Guidelines applies to all Hillside Residential developments subject to Environmental and Design Review. The design elements of each project, site design, architecture, planting and site lighting, should all be complimentary and will be reviewed by the City on a comprehensive basis.

The following clarifications are necessary to understand the intent of these guidelines:

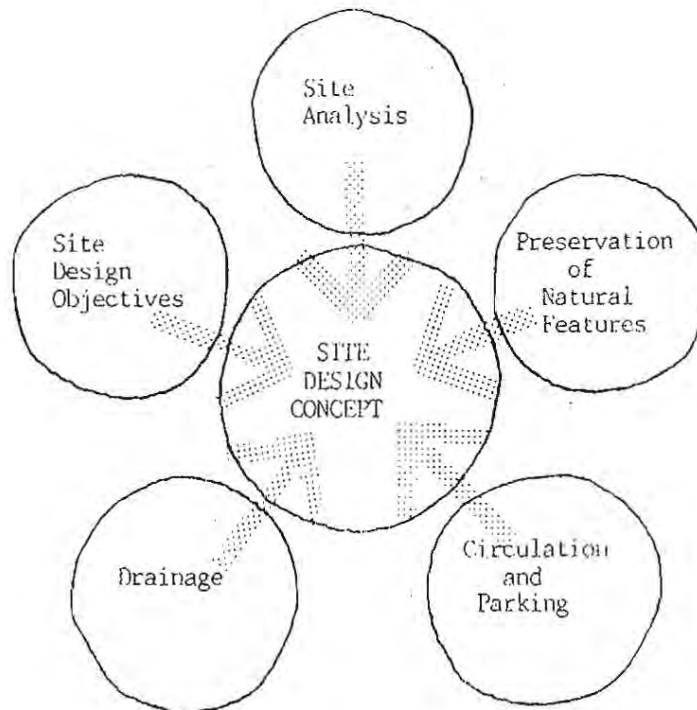
- the word “**shall**” is used to express what is mandatory.
- the word “**should**” is used to express what is acceptable to satisfy the objectives of these guidelines.

IV.A1. Site Design Process

The quality of site design will be given first priority in the review of development proposals. A project should display sensitivity to the natural hillside setting and compatibility with nearby hillside neighborhoods.

1. Site Analysis

- Every development proposal for hillside residential projects should include a thorough analysis of existing conditions on and adjacent to the site. An analysis shall include a careful examination of a site's physical properties, natural features, special problems, visual character and an examination of the neighboring environment. The Analysis will assist the Design Review Board in evaluating a developments relationship to existing conditions, neighboring properties and the community.



- Appendix A of this manual lists specific Environmental and Design Review Application Requirements.

2. General Site Design Criteria

A new hillside residential development should:

- Contribute to the hillside character of San Rafael's residential neighborhoods.
- Reflect the City's design goals and policies as expressed in the General Plan.
- Preserve or protect unique or special natural features of the site, such as landforms, rock outcroppings, mature trees and vegetation, drainage courses, hilltops and ridgelines.
- Avoid the highly visible open hillside areas.
- Be compatible with the natural features, building location and existing open spaces of neighboring properties.
- Respect the existing views, privacy, access to light and safety of neighboring properties
- Avoid the unstable or hazardous portions of the site.
- Minimize the removal of natural vegetation.

3. Preservation of Existing Natural Features

Significant existing natural features should be integrated into new hillside residential development proposals to retain the desirable qualities of San Rafael's hillside setting. Existing topography, land forms, drainage courses, rock outcroppings, significant vegetation and important views should be recorded in the site analysis and incorporated into the design of Hillside Residential Development.

a. Mature Trees

- Mature Trees should be retained and integrated into new hillside residential development. This will require careful judgement to determine the value, size and species of the trees relative to the other natural features of the site, fire safety and the development project program. This guideline is not meant to stop removal of undesirable trees.
- Existing trees over 12 inches (measured at 4 foot 6 inches above the root crown) in trunk diameter (for oaks, 6 inches) are considered significant resources to be preserved. See Guideline A3. "Preservation of Significant Trees" for definitions and descriptions.

b. Significant or unique vegetation grouping which contributes to the character of the site.

- Identify the vegetation grouping and its significance to its particular hillside habitat.
- Minimize alteration to surrounding topography and drainage characteristics.

c. Topography

- Minimize grading and alterations of natural landforms.
- Avoid building in areas of excessive slope, soil with poor bearing capacity, slide potential and other hazards. Exceptions may be allowed with design Review Board approval.
- Building pads should disturb natural contours as little as possible. Balanced cut and fill volumes are desirable.

d. Drainage

- Minimize surface drainage problems on neighboring properties and provide adequate drainage on site.
- Natural drainage courses are to be preserved as close as possible to their natural location and appearance. "Dry Stream" effects (manufactured drainage courses designed to simulate natural drainage courses) which move water over the property is preferred over channelling or underground methods.

e. Circulation and Parking

- Provide a clearly organized circulation plan for automobiles, pedestrians and service vehicles.
- On hillside sites, roads and streets should be located and landscaped to minimize views from the valley floor, roads and neighboring properties.
- Offstreet visitor parking should be located in bays that fit with the natural topography and minimize grading.
- Road widths may be reduced to the minimum acceptable to the City Engineer and Fire Department if allowed by the Design Review Board and if site impacts are minimized.
- Provide access to existing open space areas.

IV.A2. Preservation of Significant Trees

Significant Trees are important aesthetic and ecological resources that contribute to San Rafael's distinctive character.



1. Definitions

- "Significant Tree" shall mean any tree which is in good health and form and is more than 12 inches in diameter as measured 4 feet-6 inches above the root crown.

Any tree of the Quercus (OAK) genus which is in good health and form and is more than 6 inches in diameter as measured 4 feet-6 inches above the root crown is considered a "significant tree."

2. Guidelines

- Site development plans should demonstrate that a diligent effort has been made to retain as many significant trees as possible.

a. Criteria For Removal

- In assessing the number of trees and specific trees that may be removed, the applicant and Design Review Board should consider the following criteria:
 - 1) The condition of the tree with respect to disease, danger of falling, and the proximity to existing or proposed structures. Should debate over the health of the tree arise, a certified arborist should be consulted at the expense of the applicant.
 - 2) The necessity to remove a significant tree in order to construct proposed improvements to prevent extreme economic hardship to the owner of the property.
 - 3) The topography of the land and the effect of the significant tree removal on erosion, soil retention, and the diversion or increased flow of surface waters.
 - 4) Accepted professional forestry practices, such as the number of healthy trees which a given parcel of land or area can support.

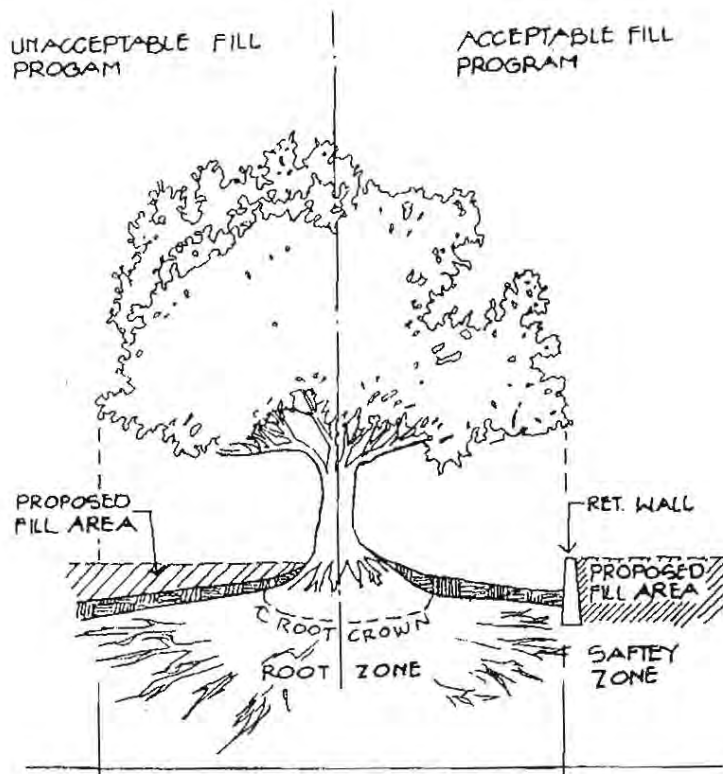
b. When Significant Trees Must Be Removed

- When significant trees must be removed, replanting with species listed in Appendix B is recommended. Designers of each site should take responsibility for the correct tree selection and compatible site conditions for each type of tree.
- Trees shall be replaced at a ratio of 3 new trees for every tree removed.
- Minimum tree size shall be 15 gallon. Exception to this requirement may be allowed by the Design Review Board (i.e., more plantings of smaller sizes) when site conditions warrant.
- Replant trees and shrubs consistent with surrounding native vegetation.

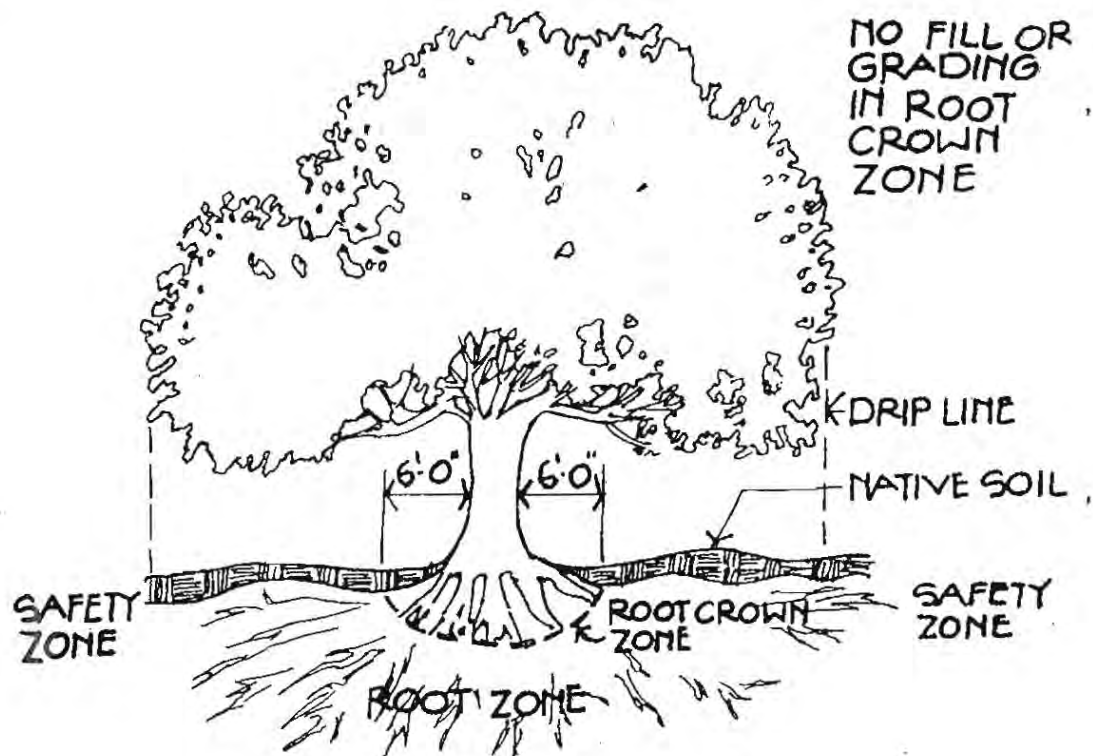
3. Techniques for the Preservation of Oak Trees

- Specimen oak trees may be found at scattered locations on the hillsides and in the valleys and canyons. Special care should be taken to retain and protect oaks as significant resources.
- The most critical issue in the care and maintenance of an existing oak is the altering of conditions under which the tree has grown. "Altering" includes changing the grade within the drip line, changing watering practices from natural rainfall to supplemental irrigation, changing the leaf litter beneath the trees, changing drainage patterns, and the movement of soil around roots caused by heavy equipment.

Should changes of grade be necessary, the following steps may be taken:



- a. Establish the radius of the existing root system by using soil probes or equivalent. This establishes a Root Crown Zone within which there should be no grading. New development may require gradual root pruning. Consult an arborist for proper techniques. Root pruning enables roots to be cut for a lowering of natural grade. Under no circumstances should soil be added around the Root Crown Zone, but soil may be added over the Root Zone if the Root Crown is protected by retaining devices.

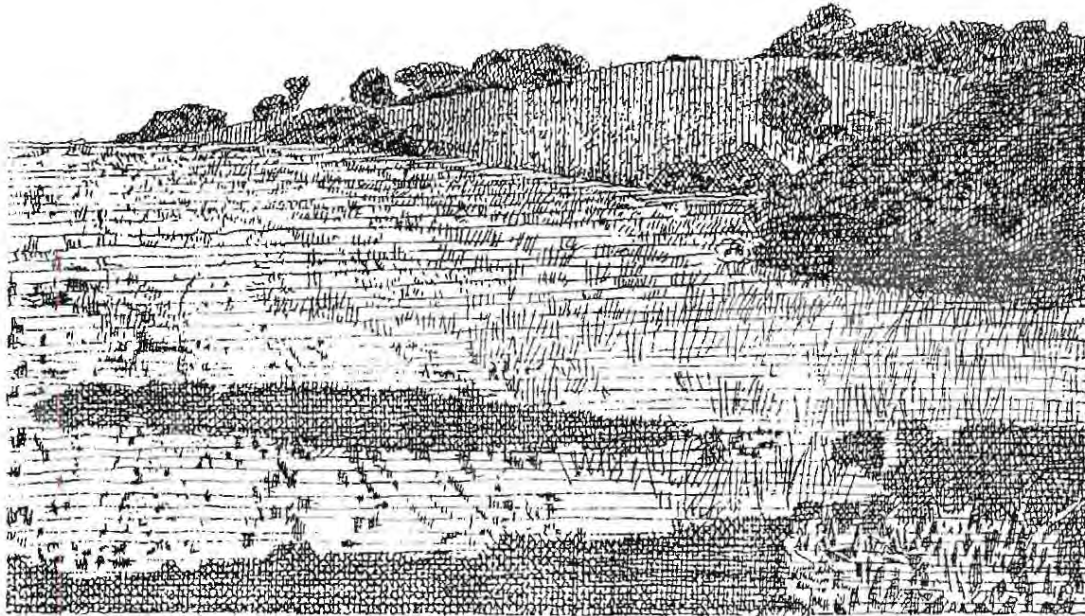


- b. Overwatering oaks during the summer creates conditions favorable to root rot and oak root fungus. Besides reducing water to the root zone, draining water off of the root crown quickly is vital for the health of the tree. Sloping soil away from the root crown improves drainage by creating rapid water runoff. In heavy soils, such as clays, leach lines installed within the drip line and extending out to drainage courses may be necessary to increase drainage. In all cases, the goal is to duplicate the native conditions under which the oak has lived. Essentially, if the existing conditions were dry, leave them dry; if they were wet, leave them wet.
- c. Leaf litter is the accumulation of live and decaying leaves at the base of a tree. In the case of oaks, this litter contributes to a cool atmosphere for root growth, and an acid condition resulting from the decaying of the leaves. When possible, and when it poses no fire hazard, leave the natural litter in place.
- d. Poor drainage caused by a change in grade or compaction produces constant moisture at the base of the trunk. Growing lawns beneath oaks also frequently produces poor drainage. This problem can be averted by using other ground covers, sloping the natural grade away from the tree and diverting sprinklers away from the trunk. A dense turf or compacted soil can greatly reduce aeration in the soil. Reduced aeration plus excessive water favors development of harmful soil organisms, such as oak root fungus, which may be present in an inactive stage until stimulated by favorable growing conditions or even mechanical root injury.

- In summary, native oaks are extremely sensitive plants. Minimal grade changes within the drip line can drastically effect aeration of the roots and drainage around the root crown. Avoid changes of grade if possible. Avoid summer irrigation which would produce constant moisture at the root crown.

IV.A3. Hillside Grading and Drainage

Changes to the existing natural terrain through grading should be kept to a minimum in order to preserve the inherent characteristics of sloping hillside sites.



Grading should be kept to a minimum and should be performed in a way that respects significant natural features and visually blends with adjacent properties. Factors to be considered in the development of a grading plan are:

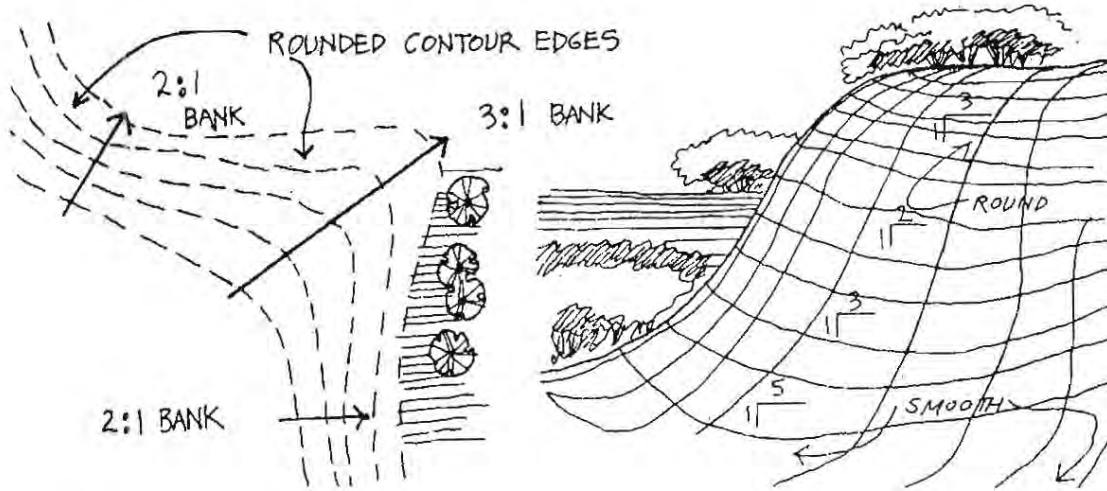
- The natural features of the site.
- Slope and soil characteristics.
- Vegetative cover.
- Access to the site.
- Orientation and visibility of both site and the proposed development.

Detailed geotechnical and hydrologic reports may be required prior to the preparation of the grading, drainage and erosion control plans. Careless grading often results in extensive slope cuts with highly visible scars, unstable slopes, increased erosion and a degradation of the visual hillside character.

In addition to applying the standards contained in the City's Geotechnical Review Matrix, the City will strongly encourage the following:

Grading

- Minimize grading at areas with greater than 25% slope (except that required exclusively for foundations). Grading in a small or large hillside residential subdivision project where the slope is over 25% shall be reviewed by the Design Review Board and the Planning Commission to assure that the lot and/or subdivision design complies with this guideline.
- Avoid creating large graded terraces at mid-slope areas for building pads.
- New building sites should be graded such that they appear to emerge from the slope. Minimize creation of flat areas on slopes greater than 25%.
- Avoid hazardous or unstable portions of the site. The City's Geotechnical Review Process will establish the presence and extent of these areas.
- Mitigate geotechnical site constraints when needed so long as it can be proven that the measures do not cause negative visual impact to the natural hillside character.



Variety in slope bank gradients creates a natural appearance more resembling a natural form.

Slope banks can be softened by contoured grading at the top and toe of the slope.

- Avoid a manufactured appearance by creating smooth flowing contours of varying gradients, preferably with slopes of 2:1 to 5:1. Avoid sharp cuts and fills and long linear slopes that have uniform grade.

Slope banks can be softened by contoured grading at the top and toe of the slope.

- Terracing should be designed with small incremental steps, avoiding wide step terracing and large areas of flat pads.
- Pads should be of minimum size to accommodate the structure and a reasonable amount of open space. Pads for tennis courts, swimming pools and lawns are discouraged. As much of the remaining lot area as possible should be kept in the natural state of the original slope.
- Sloping lot designs, such as split level building terraces are encouraged to reduce pad size.
- Grading should be minimized within 20 feet of all perimeter property lines of the development, unless the grading is similar to the existing adjacent slopes or to the planned grading of the adjacent slopes.
- Retaining walls and pony walls visible from off site should be of minimum height. Retaining walls faced with stone or earth-colored materials are encouraged.

Drainage

- Storm water should be collected and conveyed to off-site systems in a manner which will avoid erosion and damage to on-site and adjacent properties.
- Where storm drainage improvements are necessary, they should be designed to create a natural rather than a manufactured appearance.
- On site areas of impervious surfaces should be minimized to reduce run-off.
- Storm water from building roofs should be collected and conveyed to a comprehensive site drainage system.
- When off-site storm drainage impacts are anticipated, hydrology plans should be developed with input from neighboring property owners and submitted to the City with the proposed site development plans.



Use of natural materials in man-made drainage channel.

- Drainage devices such as terrace drains, benches or downdrains should be placed in locations of least visibility on slopes. The side of a drain may be bermed to conceal it. Natural swales leading downhill are a good location for downdrains. Visible concrete drains should be color tinted and screened with planting to be less obtrusive.
- **Runoff and Subsoil Discharge.** Passage for bulked-flow and subsoil runoff shall be provided to a safe point of discharge, such as a street, channel or debris basin, in a manner such that damage to improvements or slopes will not result. Natural stream gradients should not be flattened.
- **Debris Collection.** Where applicable, lot designs and the location of proposed improvements shall permit accommodation of debris from potential land slippage and/or erosion without damage to improvements or other properties downslope, and with access to a street to provide for cleanup and removal.
- **Overflow Route.** An emergency overflow route for flood and debris flows which exceed the design capacity of planned drainage, flood control and debris facilities and devices shall be provided. Overflow routes shall direct overflows away from slopes and improvements and toward safe points of discharge.

Erosion Control

- Where applicable, grading plans should include erosion control and revegetation programs. Where erosion potential exists, hydro-seeding, silt traps or other engineering solutions may be required.

- The timing of grading and construction should be controlled to avoid failure during construction. Detention basins and other storm and erosion control facilities may be required. If this is the case, the negative visual impact to the natural hillside character must be evaluated and judgement made as to the appropriateness of erosion control facilities.

Geologic Hazards

- Geotechnical Review is required on all sites to identify hazardous areas, including debris flows.
- Areas determined through the geotechnical Review Process to be too hazardous for development shall be avoided.
- The following methods for mitigating geologic hazards are **not acceptable**:
 - Major modifications that would change the character of an existing landform.
 - Exposure of slopes that cannot be suitably re-vegetated.
 - Removal of large areas of existing mature vegetation that substantially contribute to the natural character of a site.
- Existing geologic hazards shall be corrected when they pose a threat to on or off site development.

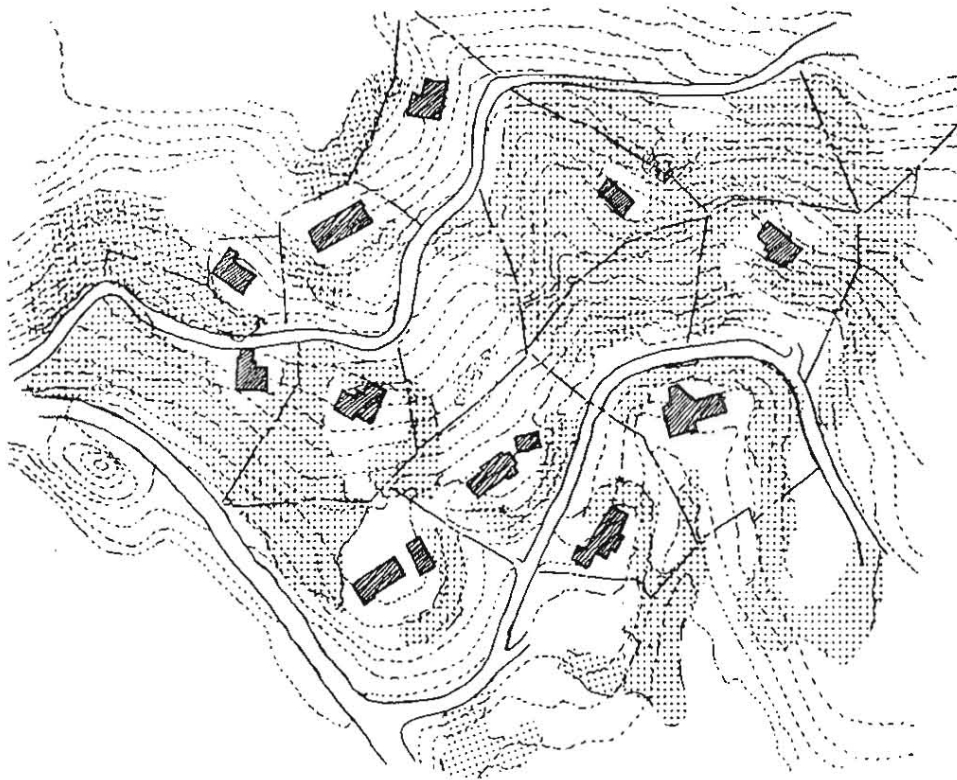


IV.A4. Lot Configuration, Building Setbacks and Locations

The layout of lots in a residential development should be imaginatively derived from the form of the land. The development plan should adapt to existing topography and natural features, avoiding unnecessary alteration of land forms.

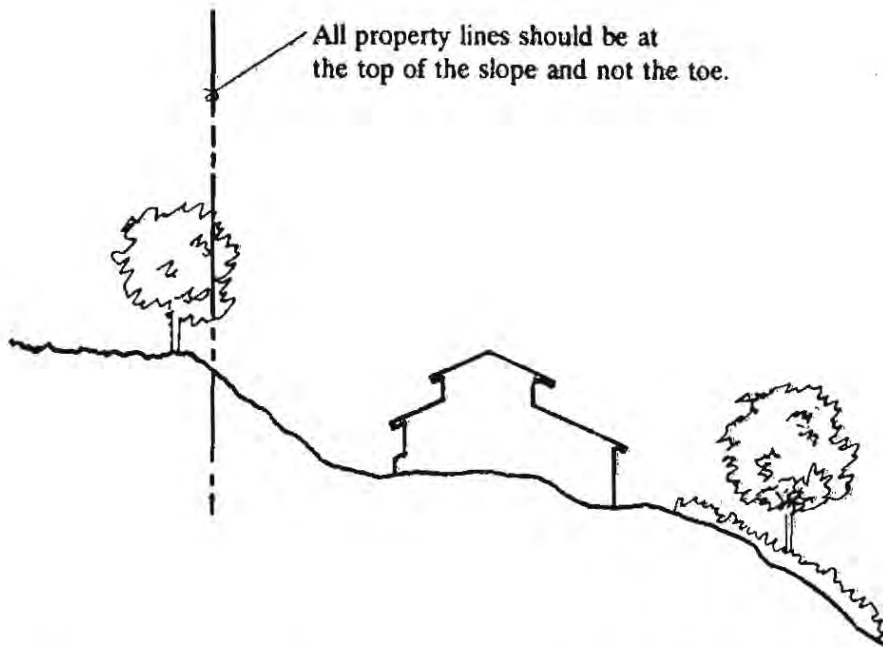
The visual prominence of hillside residential development should be minimized by taking advantage of existing site features for screening such as tree clusters, depressions in topography, setback hillside plateau areas and other natural features.

Lot Configurations

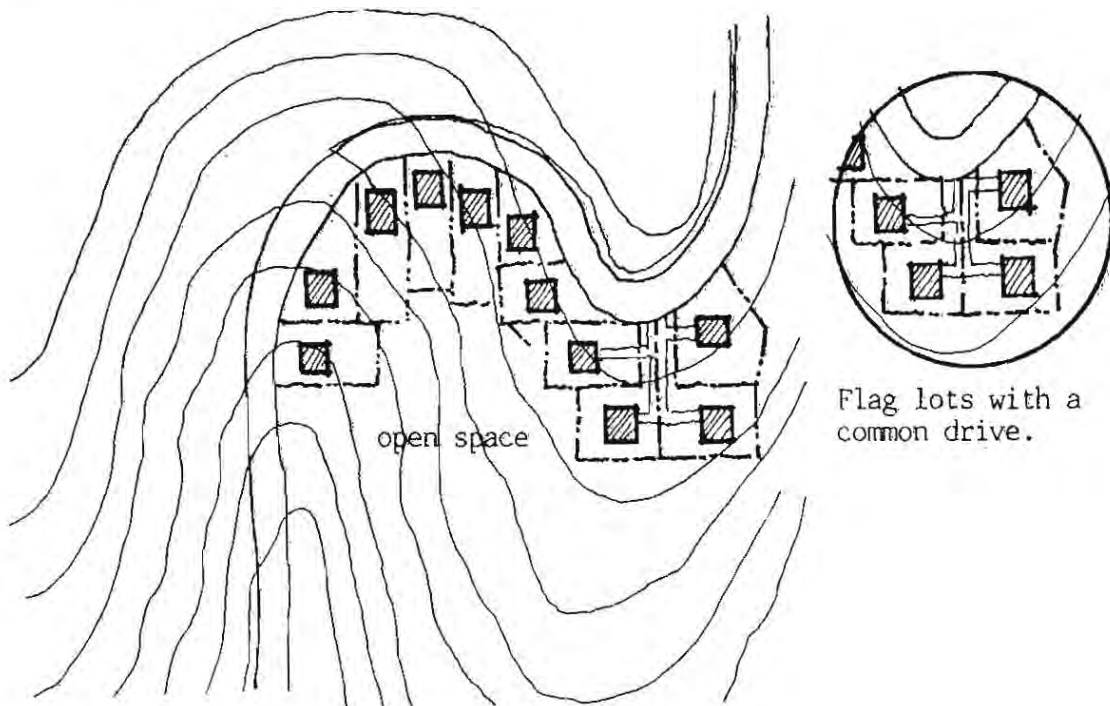


Variety of lot patterns influenced by Topography and Natural Features.

- Lot Patterns which offer a variety of lot shapes influenced by topography and natural features are encouraged.



- Lot lines should be placed at the top of major slope areas within areas of high public visibility to ensure that the slope maintenance and planting will not be neglected by the uphill owner.

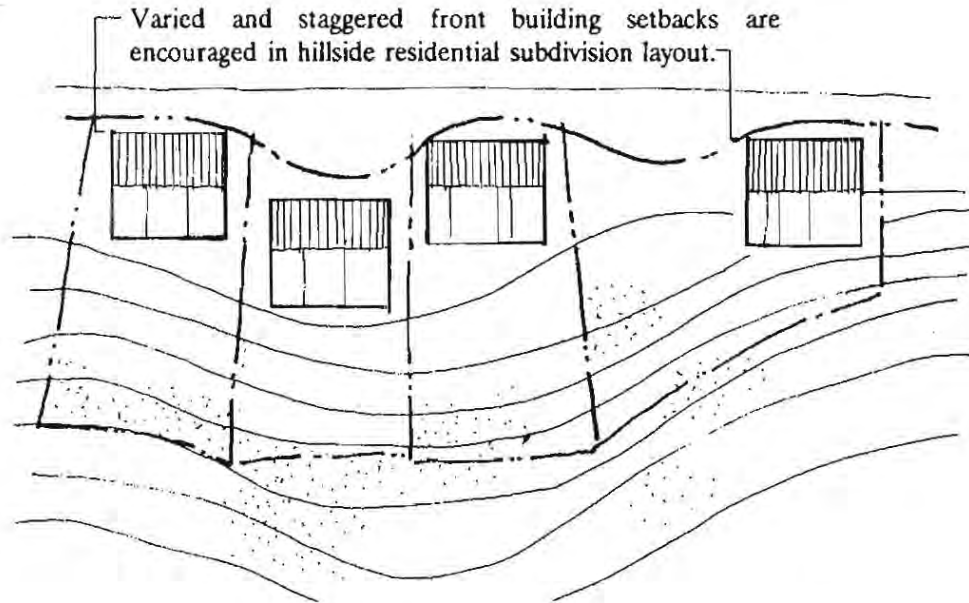


Example of the appropriate use of flag lots.

- Allow flag lots with parking located to adjacent roadways to encourage terracing of buildings while minimizing roadway cut and fill.

Building Setbacks

- Allow front and side setback requirements to be flexible (including zero lot line conditions) subject to Environmental and Design Review, to promote clustering of buildings if this will protect an existing slope.



- Varied and staggered front building setbacks are encouraged in hillside residential subdivision layout. This is consistent with the natural hillside character and will reduce the monotony of repetitive setbacks.

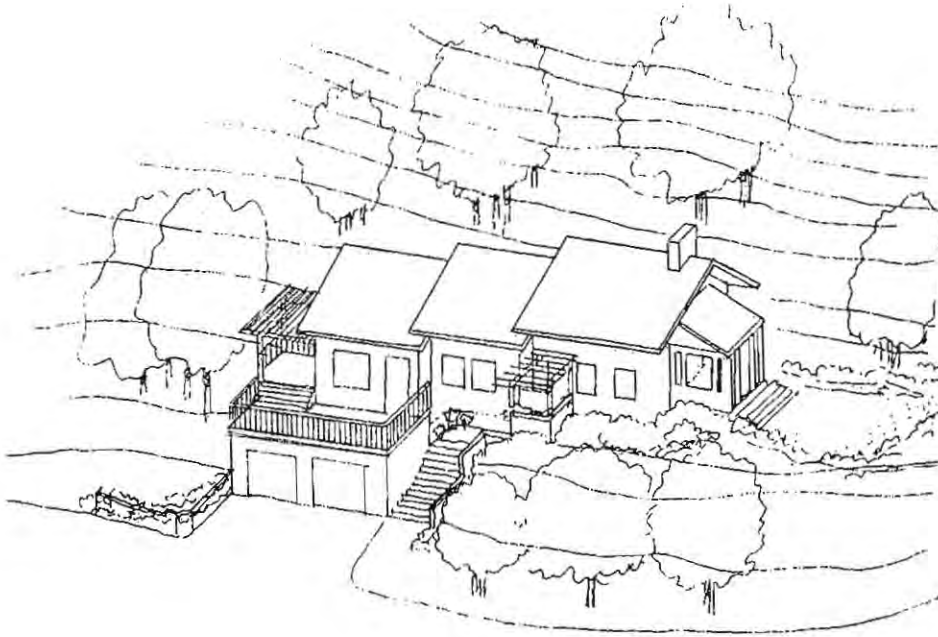
The amount of setback variation will depend upon lot size. Residential development at a density of 2 dwellings per acre should vary adjacent setbacks by at least 10 feet; lots one acre or larger should vary adjacent setbacks by at least 20 feet.

In order to review proposed setbacks, building pad locations should be indicated on grading plans submitted with Tentative Maps, Parcel Maps, Site Plans and Major Use Permits pertaining to hillside residential development.

Building Locations

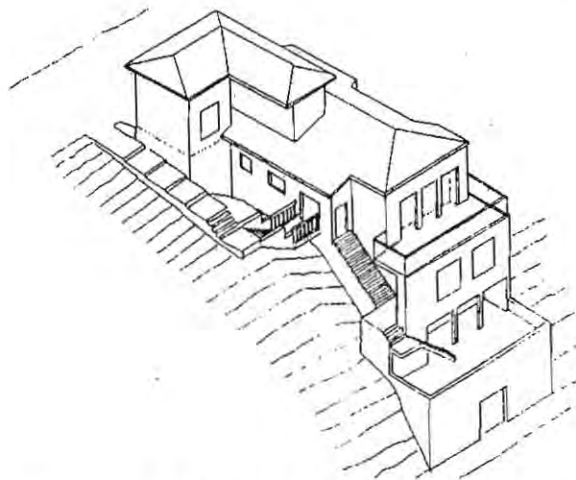
- Buildings should not be located near visually prominent ridgelines when a choice of building location is available. Building rooflines must be located below the ridgeline so that views to the hillside retain the natural ridgeline. See Guideline C1, "Highly Visible Ridgeline Areas."
- All new hillside residential development should be located so as to minimize interference with views from adjacent residences.

- Do not locate new hillside residential development near the highest point of a property if it will obscure long distance views from adjacent residences.
- Taller structures which better utilize an uphill placement, because of the setback from the downslope edge provided by the road right of way, shall be considered with Design Review Board approval.



Example of Uphill Placement of Structure

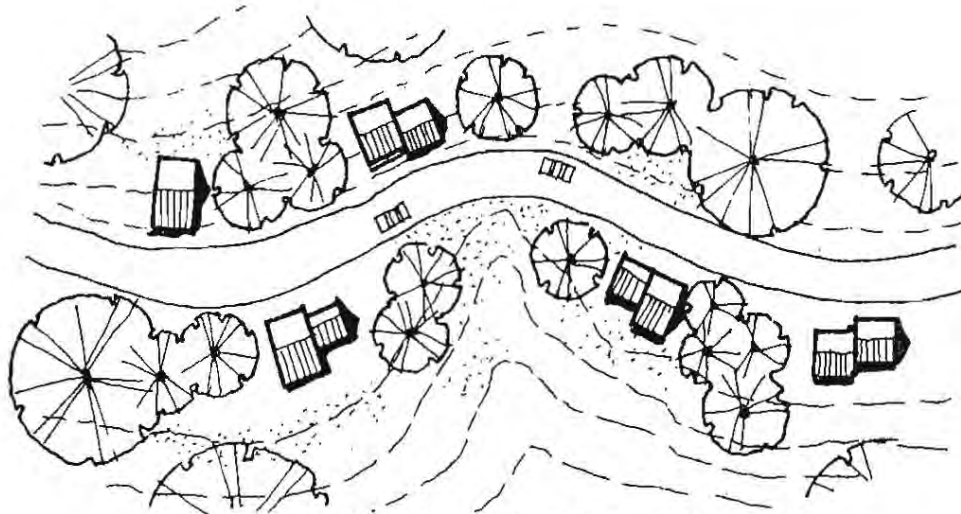
- Downhill placement shall minimize front yard setback to reduce building mass hanging over the slope. Building bulk shall step back with the slope. See Guideline Ab, "Reduction of Building Bulk on Hillsides."



Example of Downhill Placement of Structure

IV.A5. Street Layout, Driveway and Parking Design

Streets, drives, parking and emergency vehicle access should be aligned to conform, as closely as possible, to existing grades and minimize the need for the grading of slopes. They should not greatly alter the physical and visual character of the hillside by creating large notches in ridgelines or by defining wide straight alignments on hillsides. Natural land forms may often be retained by introducing gentle horizontal and vertical curves in road alignments.



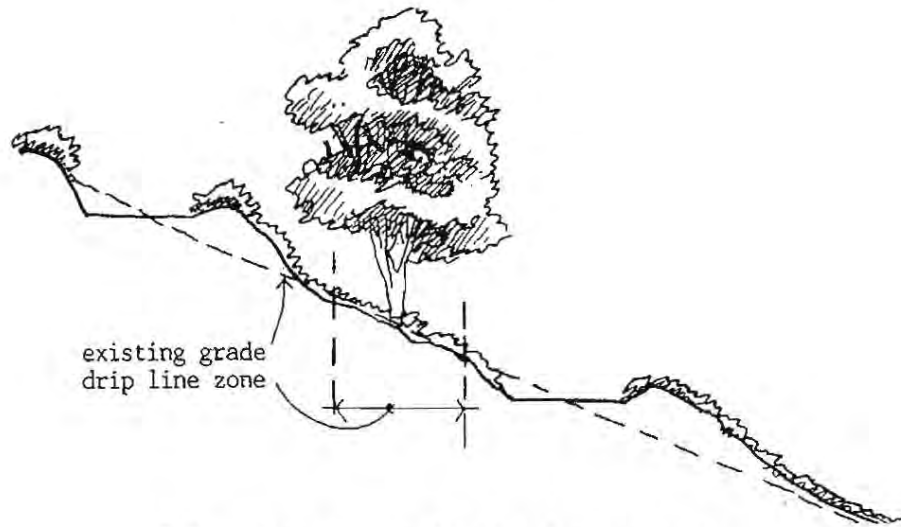
Street layout shall be aligned to conform to the natural grades as much as possible. Long stretches of straight road should be avoided by introducing gentle horizontal and vertical curves.

Street Layout

Where street construction is permitted in hillside areas, the extent of visual disruption of the terrain and vegetation disturbance must be minimized by the combined use of retaining structures and regrading to approximate the natural slope. The following techniques should be used:

- Use narrower street widths (acceptable to the City Engineer, Fire Chief, and other City Departments) when it can be proven that it will reduce grading impacts and it can be shown that the topography of the small number of lots served and the probable future traffic development is such that it justifies narrower widths and that safety will not be compromised. Minimum pavement width for public streets is 26 feet.
 - Reduce the visual and safety impacts of hillside street design by use of terraced retaining walls and landscaping.
-

- Split roadways increase the amount and appearance of landscaping and the median can be used to handle drainage. Split roadways also allow the integration of natural features such as specimen trees and rock outcroppings into the street design. Split roadways, depending on their length, can impact Fire Department response times.

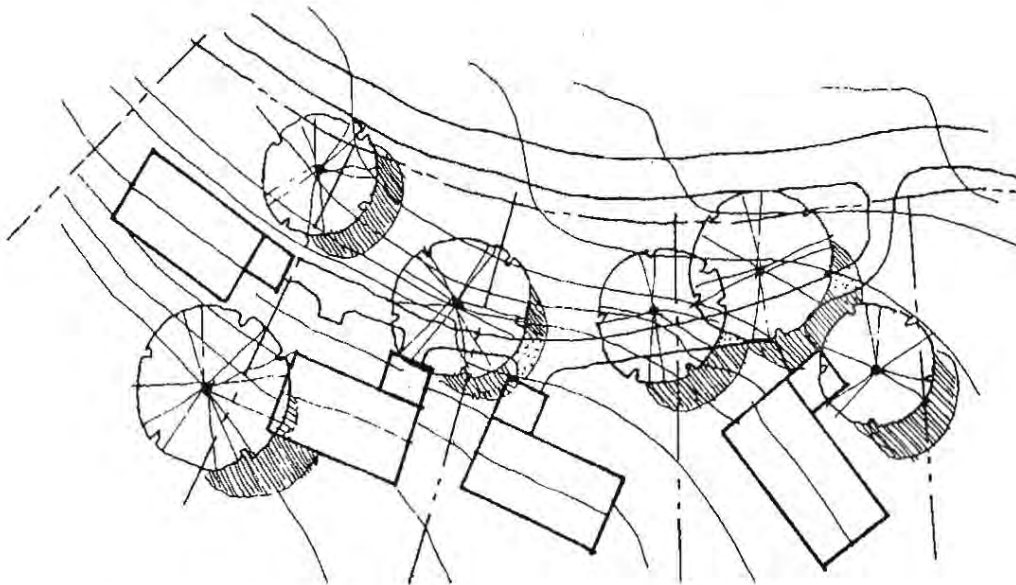


Split roadways on steep hillsides where appropriate.

- Street layout shall be aligned to conform to the natural grades as much as possible. Long stretches of straight road shall be avoided by utilizing gentle horizontal and vertical curves.
- Proper sight distances shall be maintained; and, with approval by the City Engineer, three-way intersections at angles less than 90 degrees shall be considered to reduce grading requirements.

Driveways

- Driveway grades up to a maximum of 18% are allowed unless the Design Review Board, Fire Department, and the City Engineer find good cause for exception, and shall be aligned with the natural contours of the land. The finished grade of driveways shall conform to the finished grade of the lot. Proper design consideration shall be given to vertical curves and parking landings. In any case, parking landings shall be required on all drives over 10%.
- On substandard streets, 2 guest parking spaces shall be provided (not on the driveway apron). These spaces should be conveniently placed relative to the dwelling unit which they serve. This requirement may be waived when the size or shape of the lot or the need for excessive grading or tree removal make the requirement infeasible.
- Driveway and parking designs that force vehicles to “back out” into substandard roadway widths are prohibited.



Grouped driveways can reduce grading.

- Common drives in single family hillside residential developments should be considered if grading is reduced by their use. Common easement maintenance agreements are required for common driveways.
- Any street or driveway over 18% and up to a maximum of 25% shall have Design Review Board, Public Works Department and Fire Department approval as an exception to existing standards. This exception will be based on the following criteria:
 - Will the exception protect views?
 - Will the exception minimize grading and tree removal?
- Grooves for traction should be incorporated into the construction of driveways with a slope over 18%. Asphalt driveways are not allowed on driveways with slopes over 15%.

Parking

- On-street parking should be provided in parking bays where topography allows.
- When allowed, parallel parking should be located on one side only and be limited to 8 feet in width.

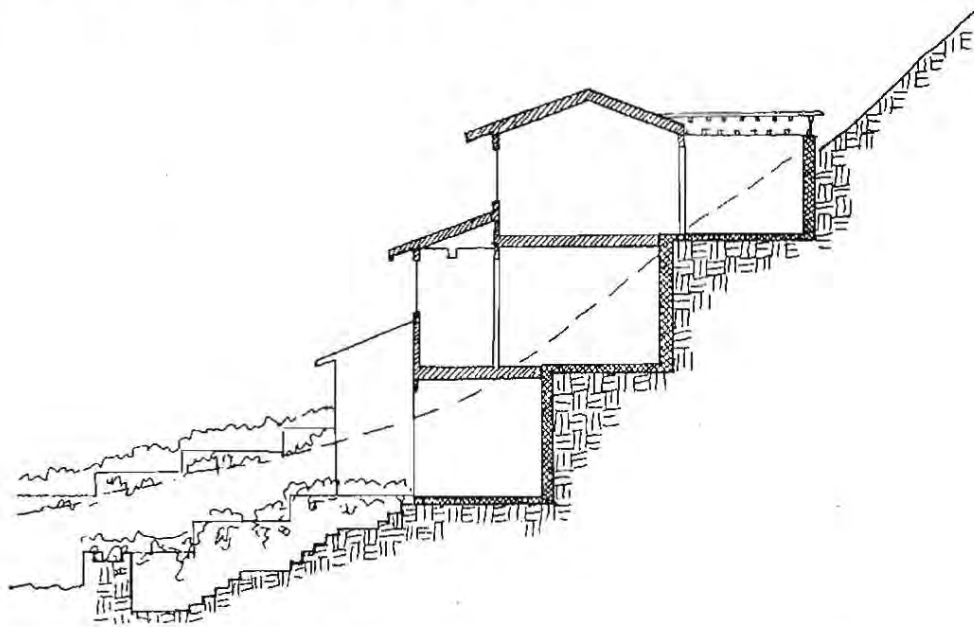
IV.A6. Reduction of Building Bulk on Hillsides

The effective visual bulk of hillside residential development should be reduced so that structures do not “stand out” prominently when seen from a distance or from downhill properties.

Building form should be designed to conform to the site topography. The form, mass, profile and architectural features of the individual buildings should be designed to blend with the natural terrain and preserve the character and profile of the slope.

Reduction of building bulk on hillsides can be achieved by the following techniques:

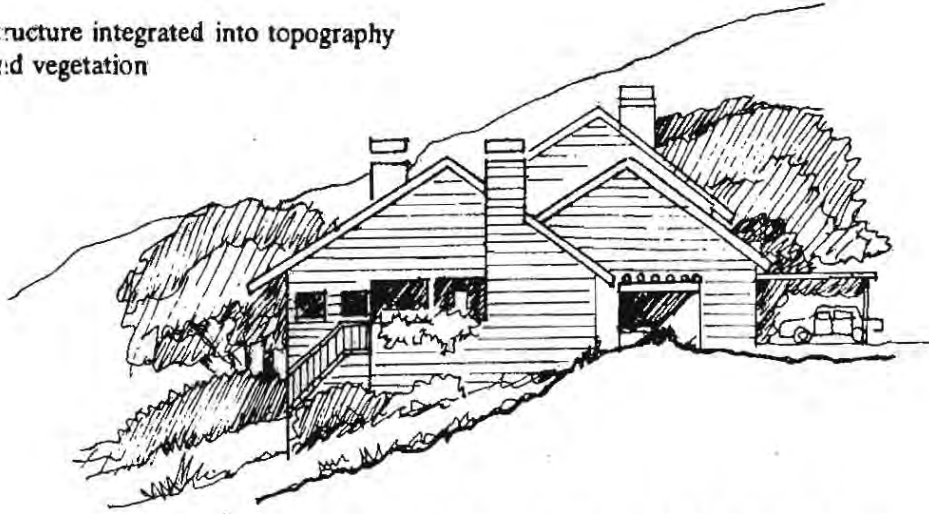
- Avoid multi-story buildings on ridgeline lots.
- Split pads, stepped footings, pier and grade beam foundations to permit the structure to step up the slope. Avoid large single form structures.



Cut buildings into hillside to reduce effective visual bulk.

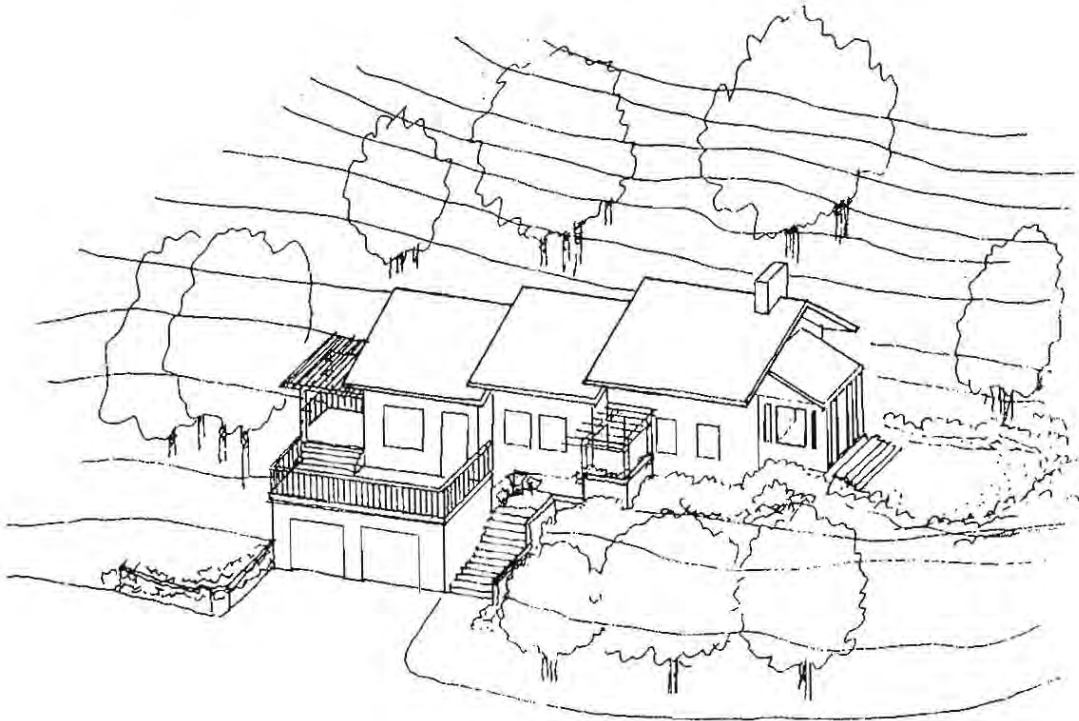
- Cut buildings into the hillside to reduce effective visual bulk. Excavate underground or use below grade rooms to reduce effective bulk and to provide energy efficient and environmentally desirable spaces. The visual area of the building can be minimized through a combined use of regrading and landscaping techniques.

- Structure integrated into topography and vegetation



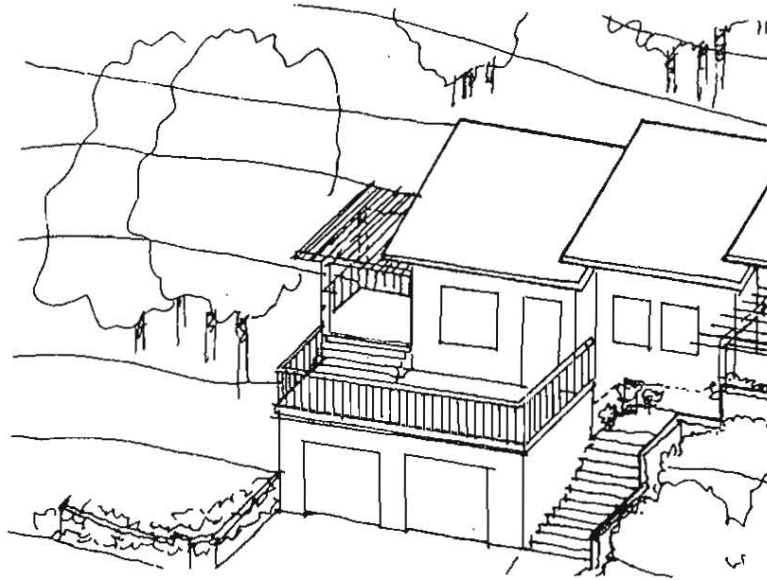
- Roof forms pitched to follow slope.
- Forms broken to reflect irregular forms of hills.
- Materials and colors blend into surroundings.
- Select materials for fire resistant characteristics.

- Roof forms and roof lines should be broken into a series of smaller building components to reflect the irregular forms of the surrounding natural features. Long, linear unbroken roof lines are discouraged.



Roof forms and rooflines should be broken into a series of smaller building components.

- Avoid the use of large gable ends on downhill elevations. The slope of the roof should be oriented in the same direction as the natural slope and should not exceed the natural slope contour by 20%.
- Avoid excessive cantilevers or overhangs on downhill elevations.
- Detach parts of the dwelling such as the garage.



Detached garage with rooftop deck.

- Use roofs on lower levels for the deck open space of upper levels. Terraced decks do not increase building bulk when seen from downhill lots.
- Avoid using overhanging decks or decks elevated on poles that make buildings seem more massive from downhill lots.

- Avoid large expanses of a wall in a single plane on downhill elevations. Use horizontal and vertical building components to effectively reduce the bulk of hillside residential development.
- Building materials and color schemes should blend with the natural landscape of earth tones and natural woodland or grassland vegetative growth.
- Avoid large retaining walls in a uniform plane. Break retaining walls into smaller components and terraces.

IV.A7. Hillside Architectural Character

San Rafael's Hillside Residential Architecture should develop a semi-rural character with a strong relationship to the natural setting. New buildings should incorporate the following elements and characteristics:

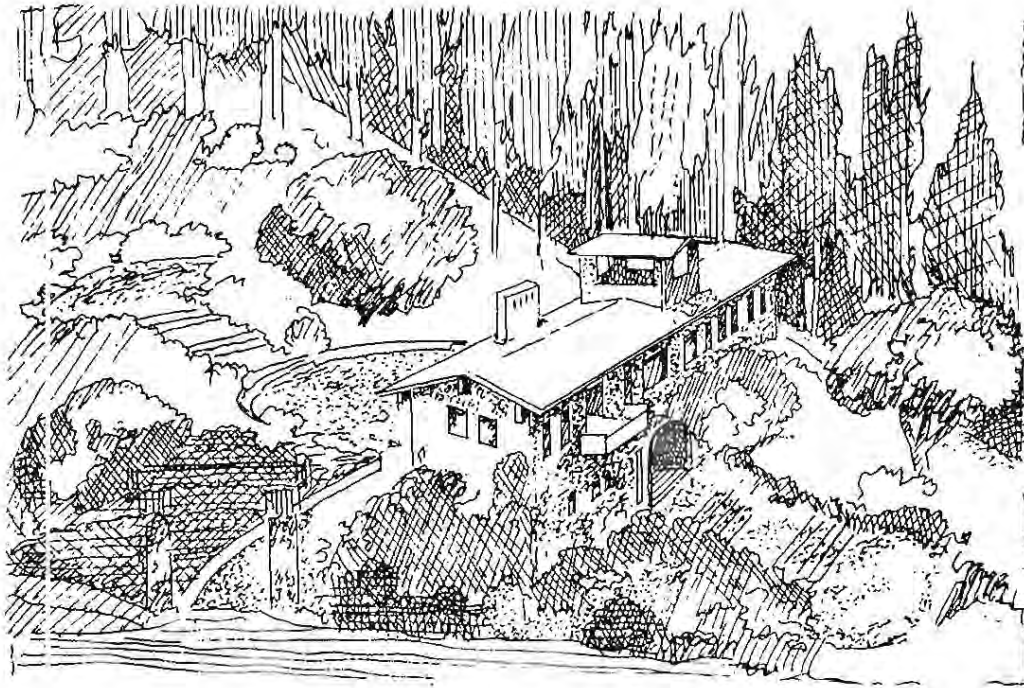
- Simple one and two story buildings in recessive colors with pitched roofs, accented with appropriate architectural features.
- Building and roof forms should be "broken" into compositions of smaller components to reflect the irregular forms of the hillside setting.
- Building forms should be "stepped" to conform to the site topography. Extensive use of rooftop terraces at lower stories, verandas, and other defined outdoor spaces are encouraged.
- Strong shade and shadow patterns created by careful variation of planes in building elevations. Large cantilevered projections and large overhangs are discouraged on downhill elevations.

Hillside Residential Architecture in San Rafael should reflect the character of the city's landscape and climate. While no one architectural "style" is desired, architectural elements that are characteristic of rural buildings are preferred. The use of porches, courtyards, verandas, sloping roof forms and natural materials are encouraged.



1. Building Form

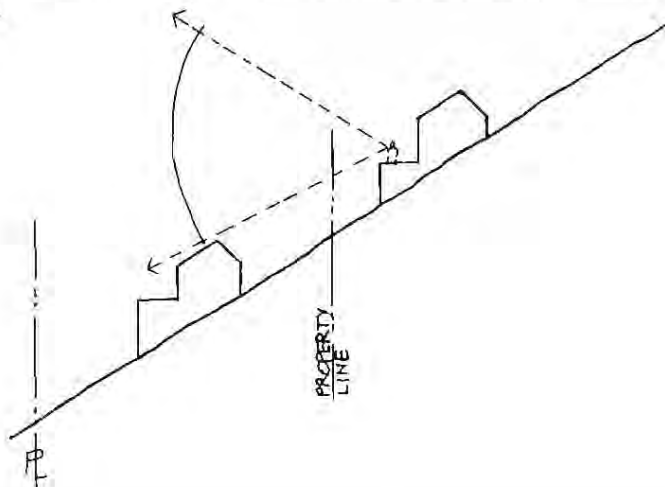
New Hillside Residential Architecture in San Rafael should continue the dominant pattern of one and two story buildings with tree canopied spaces around them.



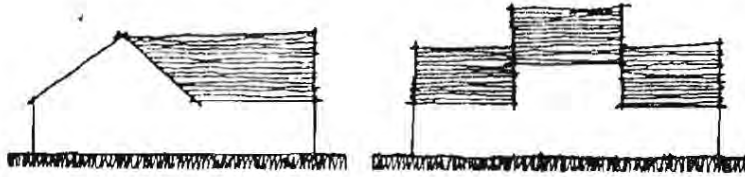
- The visual contrast between areas of light and shadow gives buildings depth and substance. All buildings should have shadow relief created by modest overhangs, minor projections (greater on uphill elevations), recesses and plan offsets. Large unbroken expanses of wall should be avoided.

2. Roof Forms and Plan Offsets

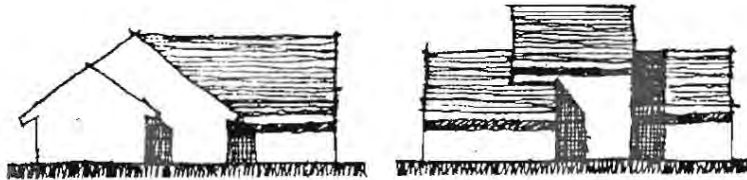
Give careful considerations to views of rooftops from other hillside areas, adjacent roads and uphill properties.



Gabled, Hip and shed roof forms at a low to moderate pitch are encouraged. Moderate overhangs on downhill elevations to create strong shadow lines are desirable. For sloped roofs, long unbroken roof lines should be avoided. Changes in roof pitch orientation should be accompanied by plan offsets on primary elevations.



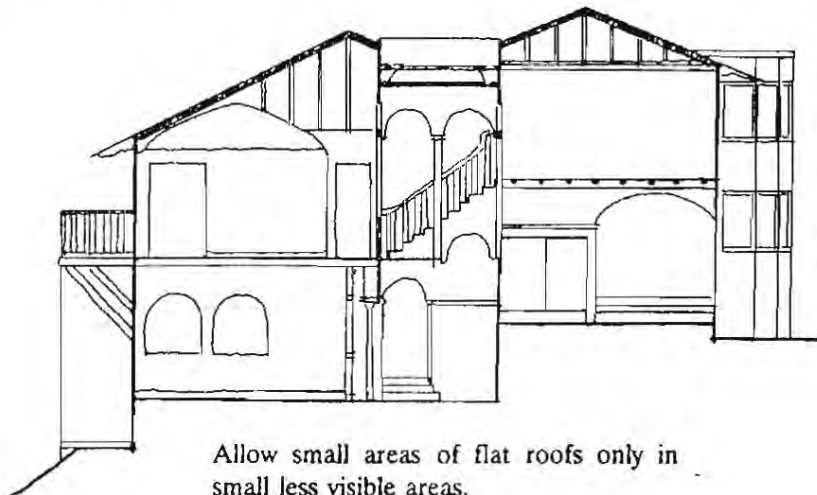
NOT ACCEPTABLE



ACCEPTABLE

A large building's bulk may be reduced by breaking the roof form into smaller parts, reflecting the irregular forms of the surroundings. There should be a consistency of roof pitch and design among separate roof components. Abrupt changes in eave heights require plan offsets to make transitions between building components.

Flat roofs that require membrane or built up roofing materials are discouraged except in small and non-visible areas or when approved by the Design Review Board.



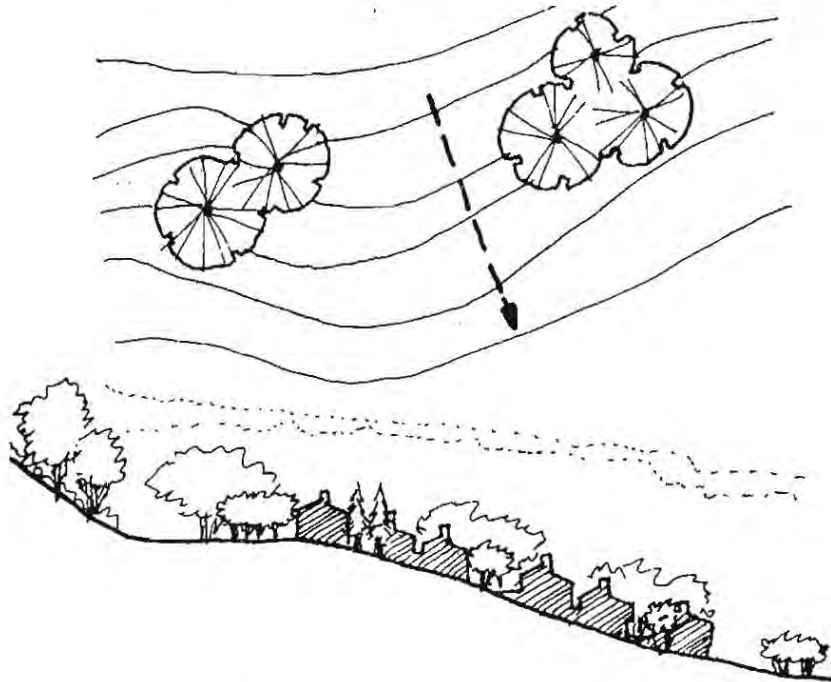
Allow small areas of flat roofs only in small less visible areas.

3. Multi-Building Projects

Most sloping sites large enough for multi-building projects are highly visible from distant locations. Views from the site from the neighborhood and other off site locations should be given strong design consideration.

Multi-building developments should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation. Other techniques for reducing the visual impact of multi-building projects are:

- Site buildings with different floor elevations to achieve height variation.



Site units or buildings with different floor elevations to achieve height variation.

- Buildings located near hillside rims have higher visibility. These buildings should be sited in a staggered arrangement and screened with planting to minimize a “wall” effect.
- Avoid long, continuous building masses that create a “wall” effect and inhibit views.
- Facades should be articulated to produce shadows through wall setbacks, recessed openings, porches, verandas, moderate overhangs, projecting windows.
- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillside sites.

4. Building Materials, Texture and Color

Color selection should show evidence of coordination with the predominant colors and values of the surrounding landscape. This is to minimize contrast of the structure with its background when viewed from the surrounding community.

Roof colors should tend toward darker earthtones. Darker colors are less conspicuous when viewed from a distance.

a. The following building materials are encouraged:

- Exterior Walls
 - Wood siding (fire resistance is an important consideration here).
 - Exposed wood structural members.
 - Natural colored brick or stone masonry.
 - Natural colored cement plaster.
- Roofs
 - Fire resistant wood shakes with thick butts, with Fire Department approval.
 - Flat Concrete Shingles of earthtone color.
 - Flat Clay Tile of earthtone color.
 - Composition shingles (with thick butts) of earthtone color.

b. The following materials are discouraged:

- Exterior Walls
 - Large areas of glass.
 - Reflective glass.
 - Elastic materials made to resemble masonry or stone.
 - Wood shingles and shakes.
- Roofs
 - High contrast or bright colors.
 - Built up roofing, if seen from above, except in small areas.
 - Highly reflective or shiny materials.
 - Non-fire resistant materials.

5. Walls, Fences and Accessory Structures

- Fences, walls and accessory structures should be designed to be compatible with adjacent buildings. Patio covers, greenhouses, storage spaces and other ancillary structures should be located and designed to respect views and other special conditions of highly visible

sites.

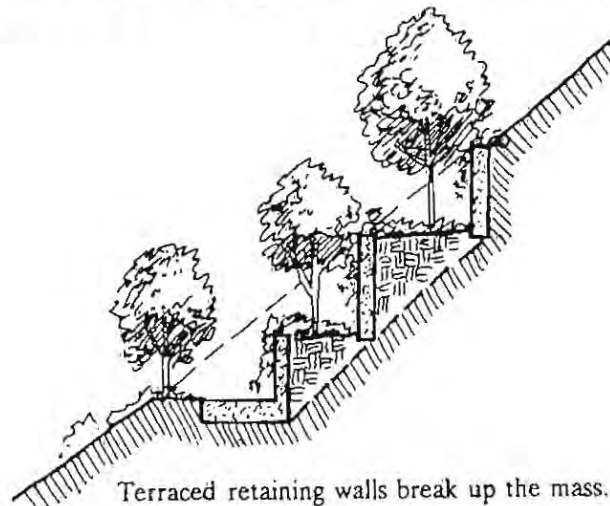
- Solid fences and walls along public streets have a negative impact on the streetscape and surrounding neighborhoods. Open fence design is encouraged on public streets in hillside areas to emphasize opportunity for views from the public environment.
- Fences and walls over 3 feet in height that face public streets should provide a fully landscaped buffer at least 5 feet deep on the street facing side of the fence or wall.

The following wall and fence materials are encouraged:

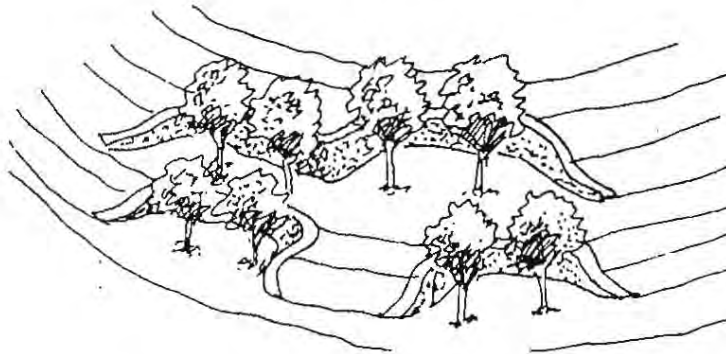
- Colored concrete.
- Split-faced concrete masonry in natural colors.
- Stone and brick masonry.
- Walls with natural colored cement plaster finish.
- Wood.
- Detailed Wrought Iron (for use in gates, and other small areas).
- Open wire fencing (with Design Review Board approval).
- Iron bar fencing.

The following wall and fence materials are discouraged:

- Chain link or open wire, except when heavily screened by planting.
 - Corrugated Metal.
 - Bright colored plastic or plastic coated materials.
 - Reed Materials.
- Retaining walls associated with lots are limited to:
 - a. Upslope (from the structure) walls not to exceed four (4) feet in height (unless approved by the Design Review Board). Terraced retaining structures may be utilized which are separated by a minimum of three (3) feet and appropriate landscaping.



- b. Downslope (from the structure) walls not to exceed three (3) feet in height unless approved by the Design Review Board. Where an additional retained portion is necessary due to unusual or extreme conditions (such as lot configuration, steep slope or road design), then the use of terraced retaining structures shall be considered on an individual lot basis. Terraced walls shall not exceed three (3) feet in height.
- Free standing wall setbacks along front yards shall be varied to avoid creating an unbroken, uniform streetscape. The height of such walls shall not exceed 4 feet unless approved by the Design Review Board.
 - Where fences and walls occur on privately-owned property within slope areas, fence/wall designs shall be as uniform as possible.
 - Continuous rear yard fences and walls across the tops of slopes shall be coordinated in design and use of materials.
 - Wall setbacks on slopes shall not allow more than four feet of solid wall or fence to show above the sight line projected along the slope angle.



Several small retaining walls can be screened.

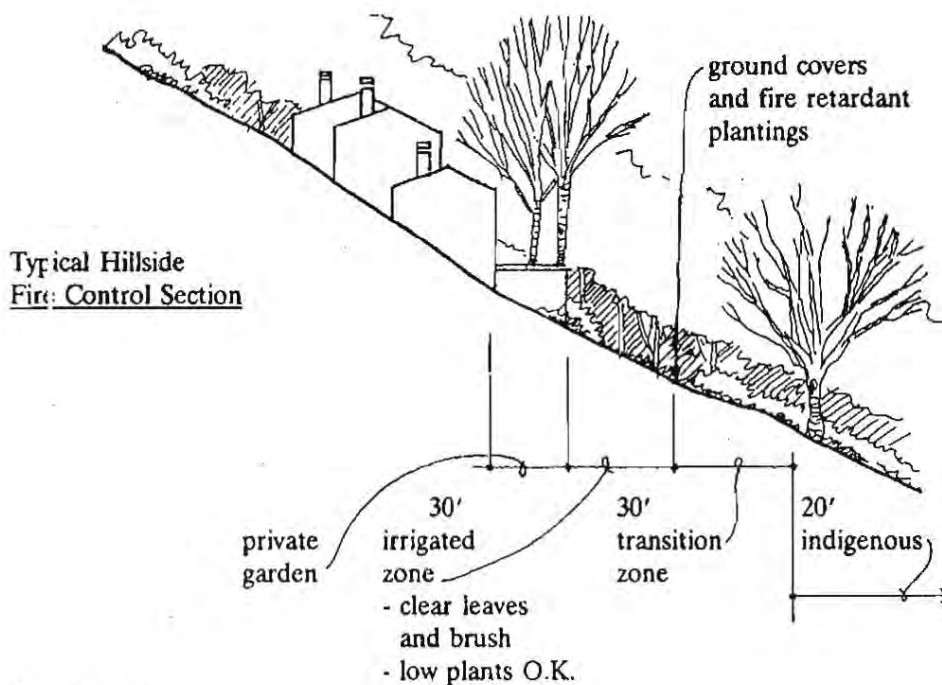
- Retaining walls shall be designed with smooth, continuous lines that conform to the topography. Maximum wall height at the base of slopes along roadways shall not exceed 4 feet in order to avoid a contained, channel-like effect.
- Retaining wall structures holding back grade to accommodate a patio or terrace shall conform to the natural hillside profile as much as possible. Excessively high retaining walls are prohibited.
- In deck construction, the distance between structure and grade shall conform to the natural hillside profile as much as possible. Excessively high distances between structure and grade are prohibited.

6. Mechanical Equipment

- No mechanical equipment, including solar collectors, television antennae and satellite dishes shall be exposed to view from beyond the boundaries of the site unless fully screened or architecturally integrated with a structure. Overhangs, roof eaves, decks, foundations and all other elements projecting from any downslope wall shall be designed so that there is no exposure of plumbing, heating, ventilating and air conditioning equipment or conduit, and shall be of an architecturally finished appearance.
- Site lighting fixtures should be selected or designed to compliment the architectural design of the project.

IV.A8. Planting Design for Hillside Residential Development

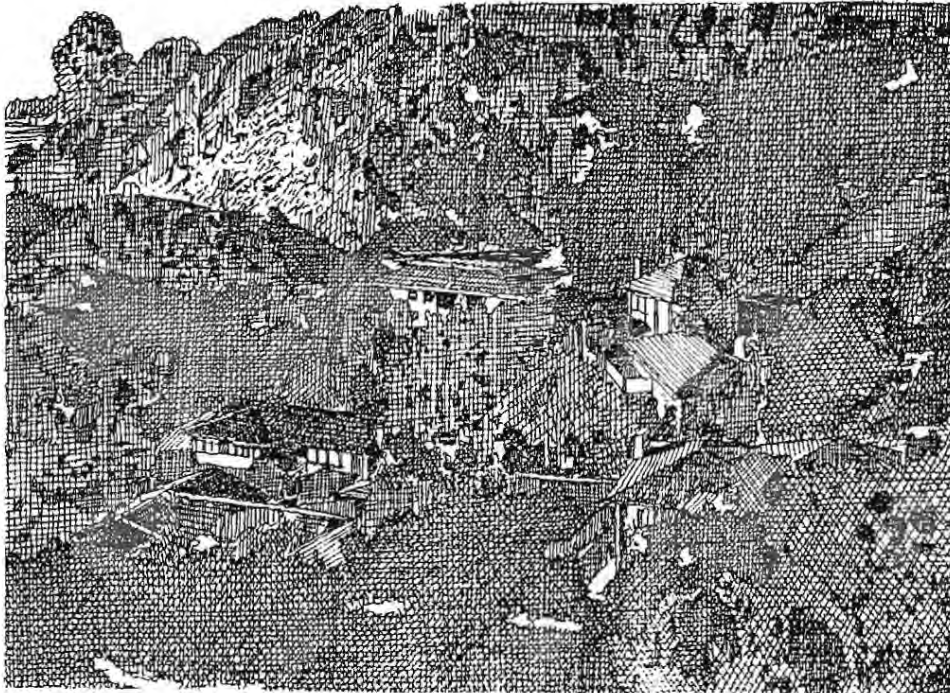
- Planting design should reflect the hillside character of the San Rafael landscape.
- Protect ridgelines, open hillsides, canyon and riparian areas.
- Plant selection should recognize the importance of water conservation, fire resistance and erosion control. Emphasize drought tolerant native plant species.
- Use hillside planting design to effectively buffer existing hillside residential neighborhoods from the impacts of new hillside development projects.



1. Design Concepts

- a. Reinforce the dominant planting patterns that define the oak savannah, oak woodland, canyon and riparian habitats of San Rafael's hillside areas.
 - The Hillside Resource Residential and Hillside Residential Areas as designated in the General Plan are "impact sensitive" areas for minimum development. They define and provide a backdrop to the City. Plantings on the undeveloped hillsides should be native California vegetation indigenous to the area. New plantings in the developed areas may be introduced species which can acclimate to the site conditions. See Appendix B, "Plant Selection Guide." The goal is to strengthen the natural character of the hillside areas.

- The pattern of woodland, grassland savannah, native scrub and oaks that define the hillsides unify and give strong identity to the hillside areas of the City. Efforts should be made to retain existing tree groupings and specimen trees to incorporate them into new development. When tree groupings must be removed, hillsides could be replaced with irregularly grouped tree species that have a similar appearance when seen from a distance.



- Major rock outcroppings and areas of existing mature vegetation should be preserved. Buildings, roads, and developed yards should be located to minimize disruption of these features.
- b. New plantings on San Rafael's hillsides should be drought tolerant.
- All new plantings should be able to withstand a summer with restricted irrigation after an establishment period of two years.
 - Turf grasses, shallow rooted ground covers and high water using trees and shrubs are discouraged.

2. Plant Selection

Appendix B. "Plant Selection Guide" at the end of this manual lists suggested plant species and their recommended uses.

Plants have been chosen based upon the following criteria:

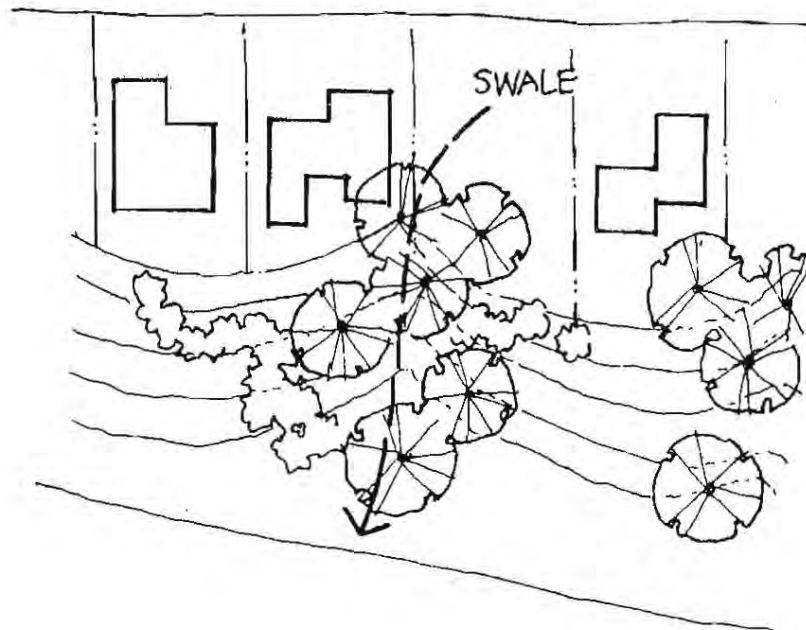
- Appropriateness for San Rafael's climate zone.
- Drought resistance.
- Form considerations: height, branching patterns, density.
- Maintenance.
- Aesthetic considerations: flowering, fruiting, leaf color.

3. Planting Guidelines

- All Planting plans are encouraged to conform to the Marin Municipal Water District Code, Title 13, Ordinance 285 (modified for dry years by Ordinance 316) - "Water Conservation Program."
- All landscaped areas shall have irrigation systems capable of sustaining good plant growth. Automatic systems are encouraged.
- All planting beds shall be mulched with an organic mulch of at least 1.5 inches in depth.
- Shrubs are preferred over ornamental ground covers and lawns due to their low water use characteristics. Shrubs are more deeply rooted than ground covers and turf grasses and will withstand drought conditions better.
- When existing trees are to be retained, they may be counted toward tree planting requirements established in the Zoning Ordinance or other City standards. New planting requirements may be further adjusted to reflect the size and density of existing trees and shrubs.
- Revegetate scarred or graded areas that have high visibility from the community.
- On slopes of 2:1 or greater, plant materials with deep rooting characteristics should be selected that will minimize erosion and reduce surface runoff. The planting basin should be kept level with a raised berm around the base of the plant to help retain moisture. A series of low retaining walls, with sub-drain lines, will provide increased planting area on the slope. This will also reduce runoff and potential erosion.
- Internal Slope Plantings.
Internal slopes that exist within newly developed projects do not blend into native areas, as do transitional slopes, and will be planted with a plant palette made up of mostly introduced species. The following principles are recommended for internal slopes:
 - a. Establish gradient of new slope and determine erosion control requirements.
 - b. Fulfill erosion control needs with water-conserving plant material.
 - c. As a general rule, use water conserving plant species.

- **Planting Techniques for Graded Slopes.**

Use irregular plant spacing to achieve a natural appearance on graded slopes. Plant trees along contour lines in undulating groups to create grove effects which blur the distinctive line of the graded slope. Shrubs of varying height may be planted between tree stands. Ground covers of native and introduced species are appropriate for slope erosion control.



When possible, locate trees in swale areas to more closely reflect natural conditions and gather surface runoff for plant irrigation.

- **Common Areas.**

Common Open Spaces and landscaped areas maintained by Homeowners Associations are subject to review under this guideline. Provisions of this guideline are recommended for planting on single family lots not subject to Design Review. Open space easements may be required to protect sensitive lands, consistent with the policies of the *San Rafael General Plan 2000*.

Hillside Plant Selection.

Plant materials should be selected for their effectiveness of erosion control, fire resistance and drought tolerance.

Hillside plant selection should consider neighbors' views and observe the following

principles:

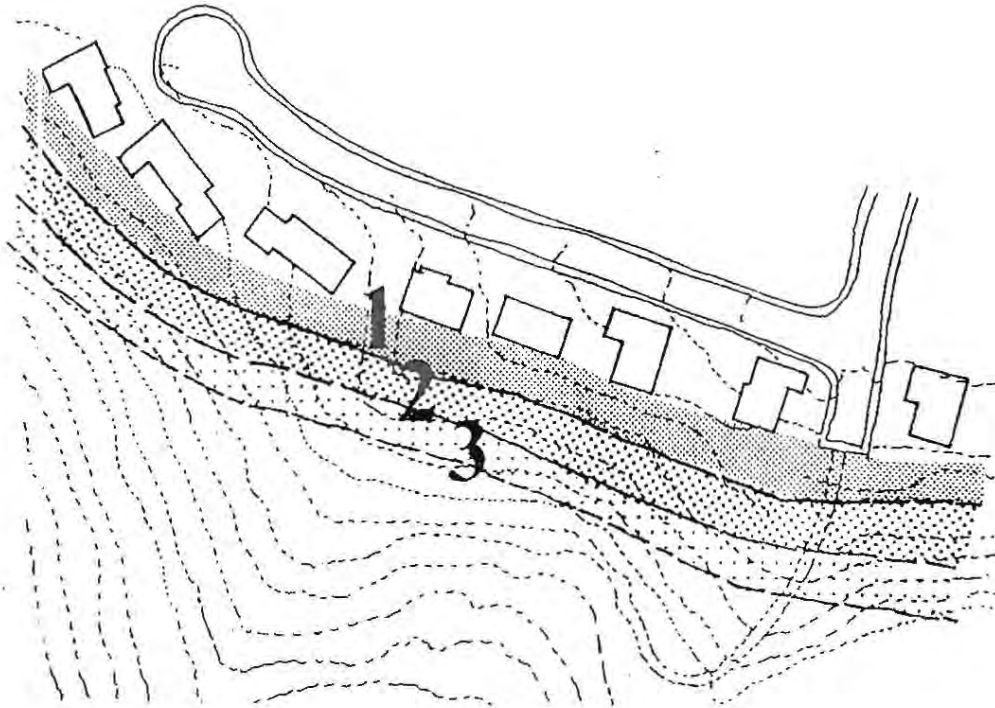
- Where views have been established, follow the downhill alignment of taller trees.
- Use less dense, open trees that provide shade but do not block views.

4. Public Rights-of-Way

All public Rights-of-Way areas between a newly developed property and the existing sidewalk or street edge should be fully landscaped. Certain species of trees may be planted in street rights-of-way with Public Works Department approval.

5. Planting for High Fire Hazard Areas

- High fire hazard areas include undeveloped canyons, grassland and woodland hillsides where native vegetation has become overgrown. Development within or on the fringes of these areas is subject to wildland brush fires.
- A transition between ornamental landscaping and native vegetation may be created by selective pruning and thinning native plants and revegetation with low fuel volume plants. Such a transition reduces the readily flammable fuel which spreads fire into developed areas.



- Transition areas can be divided into three distinct zones. The following dimensions are recommended, but subject to Fire Department approval:

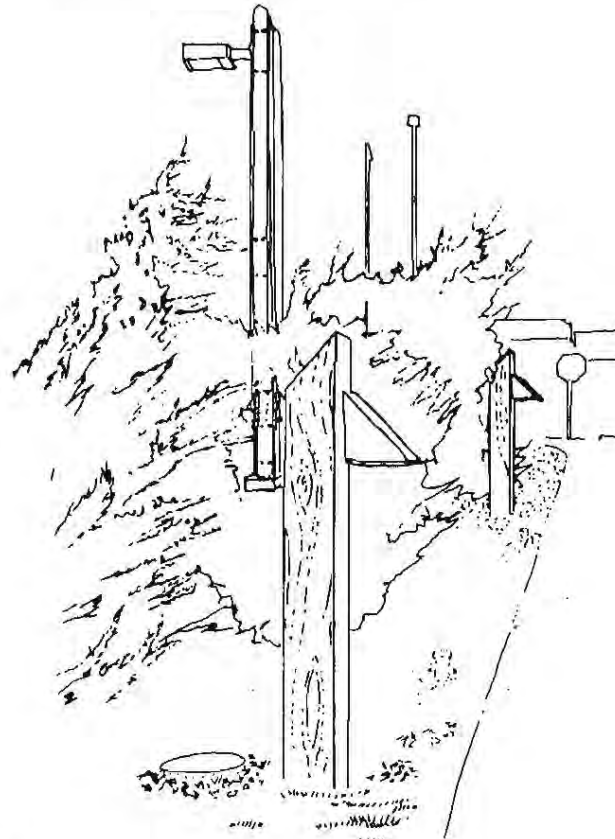
- Zone #1: Minimum 30 feet wide. Native or ornamental non-native species which are fire retardant.
 - Zone #2: Minimum 30 feet wide. Native vegetation which should be selectively pruned and thinned, with introduced fire retardant plantings. Plants with high fuel volume are discouraged in this zone.
 - Zone #3: Minimum 20 feet wide. Native vegetation which should be selectively pruned and thinned. Plants with high fuel volume are discouraged in this zone.
- A biologist's report is required that classifies portions of the site by their degree of risk to plant communities from Wildland Fires.
 - Building Envelopes should be located so as to minimize risk to structures due to Wildland Fires.

See Appendix B. for a list of fire retardant plantings suitable for high fire hazard areas.

- Transitional Slope Plantings in High Fire Hazard Areas.
Transitional slopes may be used between the domestic plantings of new development and the native flammable brush of undisturbed areas. The goal is to slow down the approaching fire within the transitional zone by reducing the fire's fuel supply. The following techniques may be used to accomplish this goal:
 - a. Evaluate the plant materials existing within the transitional zone for fuel volume and health. Remove plants from this area which are of particularly high fuel volume. Also remove any plants which are in poor health.
 - b. Retain in thinned out groupings low fuel volume native plants.
 - c. Clean out all dead leaves and branches in this area annually. Thin native plants by pruning to reduce their fuel volume. Reduce height of grass areas.
 - d. If water supplies permit, irrigate this zone monthly during the summer months to retain a high level of moisture in the plant leaves.
 - e. Trees spread fire quickly. Refer to Appendix B for plants that have reduced fuel volume.

IV.A9. Site Lighting

Site Lighting should be used efficiently to aid safety, security and compliment architectural character. It should minimize intrusion into adjacent properties, roadways, the hillside silhouette and the night sky.



1. General Requirements

- All site lighting in hillside residential development should comply with San Rafael Zoning Ordinance Provisions.
- Site lighting which is visible in hillside residential development from adjacent properties, roadways and from other neighborhoods must be indirect or incorporate full shield cut-offs. Incorporate full shield cut-offs so as not to illuminate adjacent properties. Light sources should not be seen from adjacent properties or public rights-of-way.

2. Parking Area Lighting

- For hillside residential parking areas, overhead lighting must be mounted at a maximum height of 15 feet. The placement of lighting in residential parking areas should avoid interference with bedroom windows.

3. Walkway, Garden and Pedestrian Area Lighting

- Overhead fixtures used for pedestrian areas should be limited to heights below 8 feet. Lower mounting heights are encouraged.
- Along walkways, low level lighting in the form of bollards or fixtures mounted on short posts is encouraged. Shatterproof coverings are recommended. Posts should be located to avoid hazards for pedestrians or vehicles.

4. Exterior Flood Lighting

- Exterior flood lighting for security and safety shall be located and shielded so as not to shine on adjacent properties. Decorative lighting to highlight a structure is prohibited.