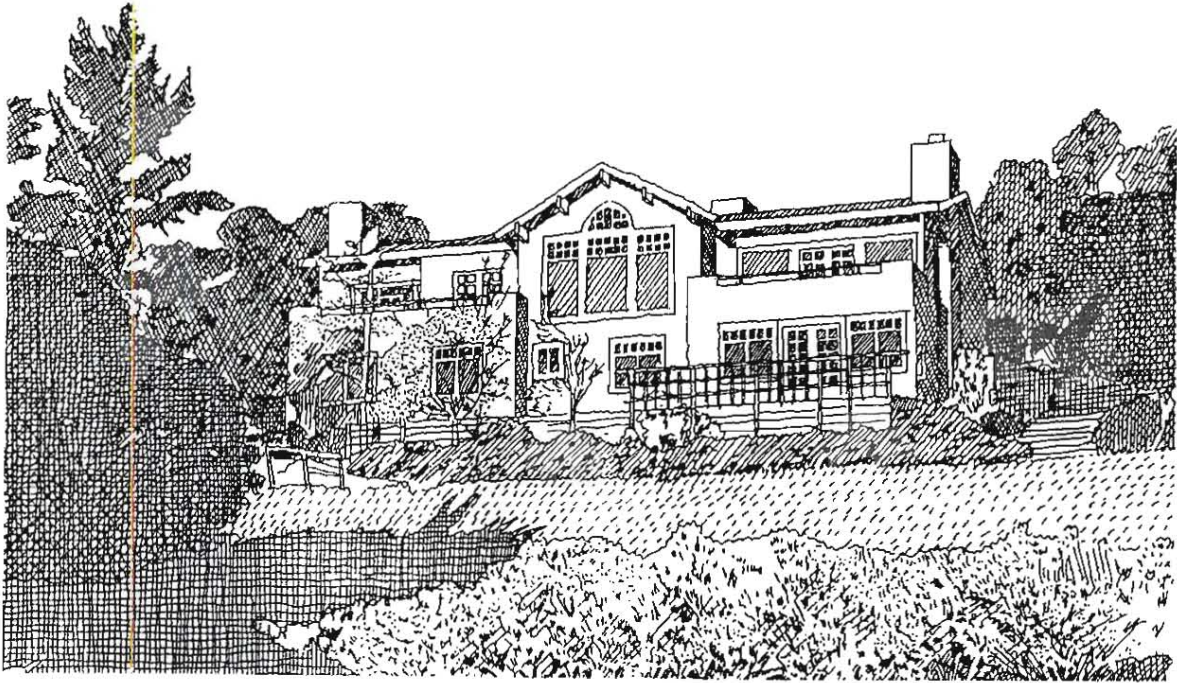


IV.B. Additional Guidelines for Development Types

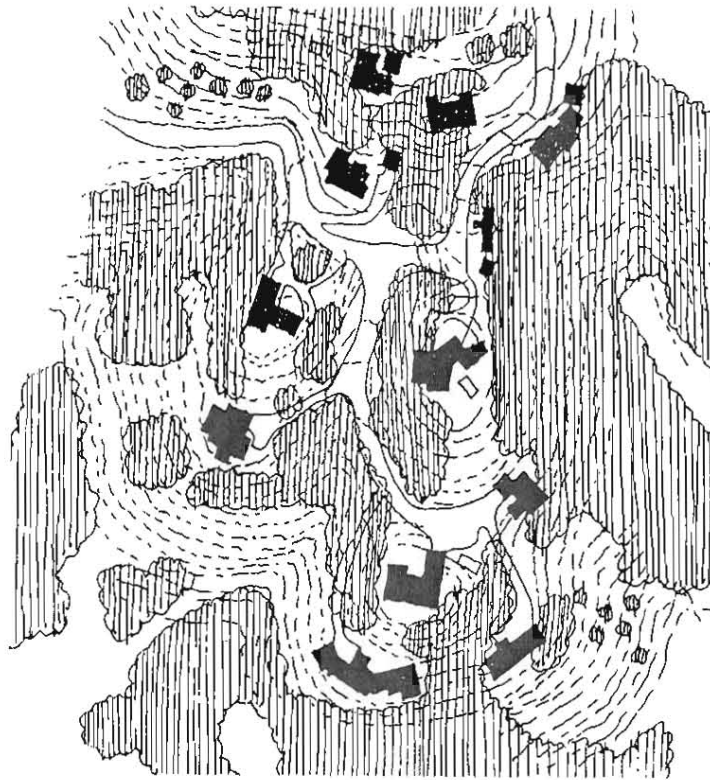


This section lists additional Design Guidelines for specific Hillside Residential development types in the city. In addition to the General Guidelines in Section IV.A., guidelines from one of the following three sections should be used. In the case of projects with combinations of these development types, more than one section may need to be consulted. Developers and their designers are encouraged to meet with the City Planning staff to clarify questions of application.

The different type listed are:

- IV.B.1. Subdivisions and Planned Development Projects.
- IV.B.2. Single Family Residences on Individual Lots.
- IV.B.3. Multi-Family Residential Development.

IV.B1. Subdivisions and Planned Development Projects



1. Applicable City Ordinances:

- Subdivisions - *Title 15 of the San Rafael Municipal Code*, "Subdivisions."
- Planned Development Projects - *Title 14 of the San Rafael Municipal Code*, "Planned Community District," "Planned Unit Development District," Chapter "Planned Development District."

2. Preservation of Existing Natural Features

Hillside Residential Development plans should demonstrate an effort to preserve and protect significant natural features in the layout and design of streets, lots and grading patterns in subdivisions and planned developments.

- The provisions of guidelines IV.A1., "Site Design Process," IV.A2., "Preservation of Significant Trees" should be followed as general design criteria for the preservation of natural features in the planning of hillside residential subdivisions and planned development projects.

- City Ordinances pertaining to the protection of natural features:
 - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
- City Adopted Policies pertaining to the preservation of natural features in hillside residential development:
 - *City of San Rafael, General Plan 2000*:
 - Land Use Element, Policies: LU-9, LU-10, LU-11 and LU-29.
 - Parks and Recreation Element, Policies: R-2, R-4, R-12, R-14, R-28, R-31, R-35.
 - Natural Environment Element, Policies: NE-1, NE-2, NE-3, NE-4, NE-5, NE-9, NE-11, NE-13, NE-17, NE-20.
 - Health and Safety Element, Policies: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-19.
 - Residential Neighborhood Element, Policies: RES-1, RES-5, RES-6, RES-7, SVS-7, NG-13, NG-14.

3. Street Layout and Design

- The provisions of guideline IV.A5., “Street Layout and Design,” should be followed in the layout and design of streets, driveways and parking areas for hillside residential subdivisions and planned developments in hillside areas.
 - City Ordinances pertaining to the layout and design of streets, driveways and parking areas for hillside residential development:
 - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
 - *Title 15 of the San Rafael Municipal Code*, Subdivisions, General Regulations and Design for Streets and Highways.
 - City of San Rafael Standards pertaining to the layout and design of streets and roads in hillside residential development:
 - Uniform Construction Standards for the Cities of Marin and the County of Marin, Department of Public Works.
 - State of California, Department of Transportation’s Standard Specifications and Plans.

4. Hillside Grading and Drainage

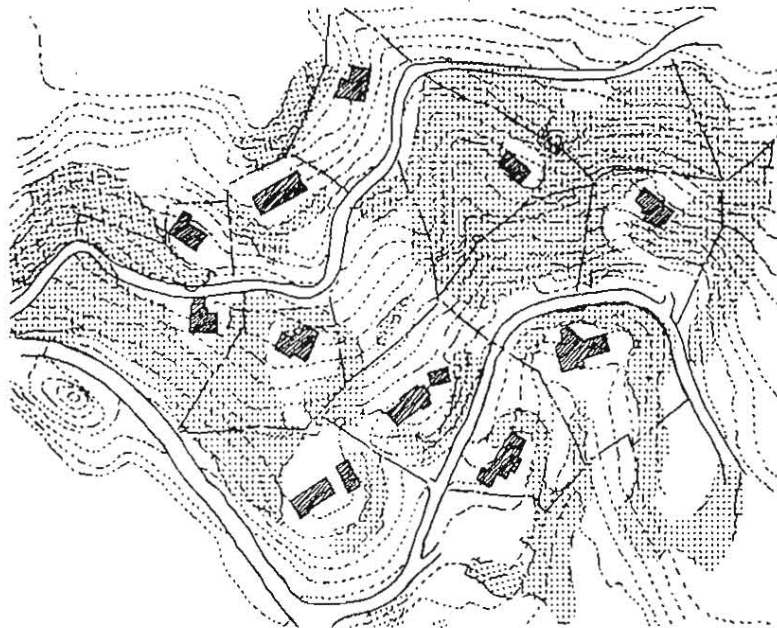
- The provisions of guideline IV.A3., “Hillside Grading and Drainage,” should be followed in the design of grading and drainage plans for hillside residential subdivisions and

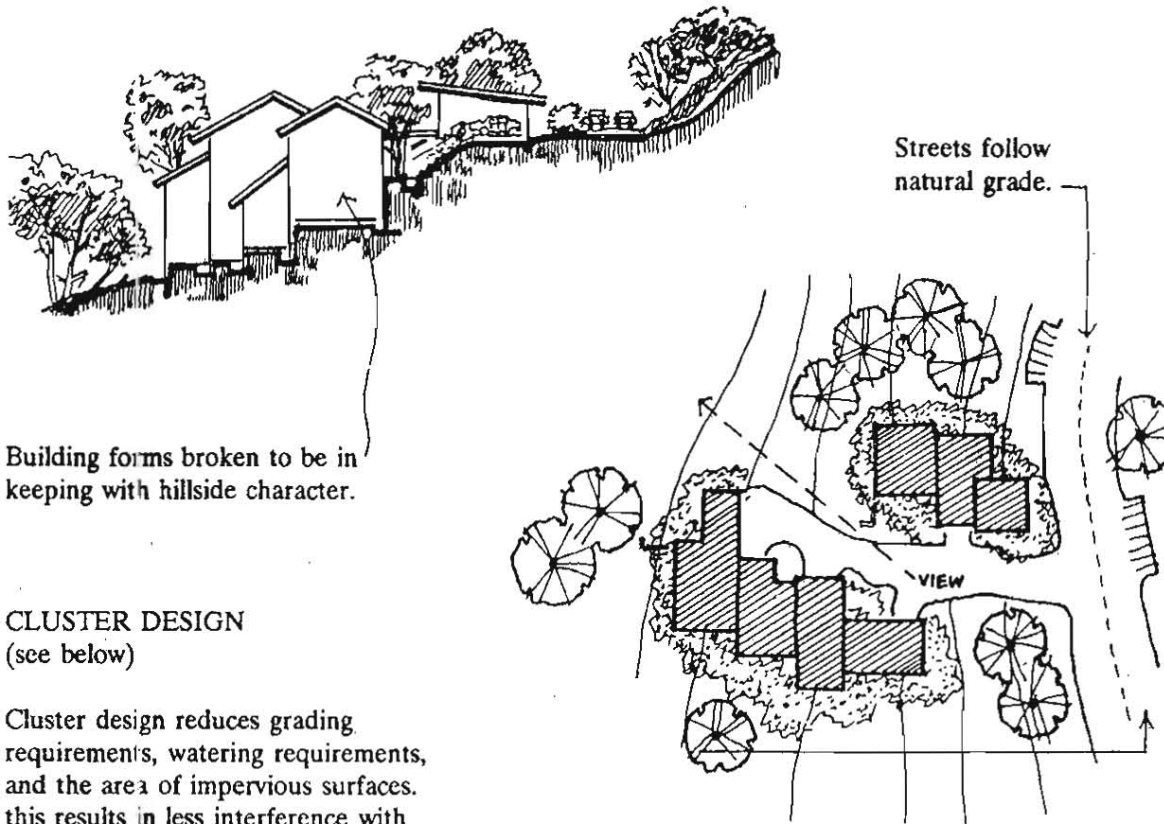
planned developments.

- City Ordinances pertaining to the design of grading and drainage plans for hillside residential development:
 - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
- City Review procedures pertaining to the design of grading and drainage plans for hillside residential subdivisions and planned developments:
 - San Rafael Department of Public Works, Grading Plan Review.
 - City of San Rafael, Geotechnical Review Matrix Process for the *San Rafael General Plan 2000*.
- City of San Rafael Standards pertaining to the design of grading and drainage plans for hillside residential subdivision and planned development projects:
 - City of San Rafael, Department of Public Works, Standard and Supplementary Conditions for Grading Permits.

5. Lot Configuration, Building Setbacks and Locations

- The provisions of guideline IV.A4., “Lot Configuration and Building Setbacks,” should be followed in the design of lot configurations, building setback determination and building envelope location for hillside residential subdivision and planned development projects. Establishment of building envelopes is a requirement on all parcels.





Building forms broken to be in keeping with hillside character.

CLUSTER DESIGN
(see below)

Cluster design reduces grading requirements, watering requirements, and the area of impervious surfaces. this results in less interference with natural features and systems.

6. Residential Clustering in Hillside Areas

- The *San Rafael General Plan 2000* encourages residential clustering in impact sensitive hillside areas to preserve and protect natural features. Private properties zoned for planned development projects that are designated as *Hillside Resource Residential* or *Hillside Residential* in the *General Plan 2000* should follow the provisions of this guideline.
- City Ordinances pertaining to the design of planned development projects:
 - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
 - *Title 14 of the San Rafael Municipal Code*, “Planned Community District,” “Planned Unit Development District,” “Planned Development District.”
- Site Design Principles for Cluster Housing in Hillside Areas.

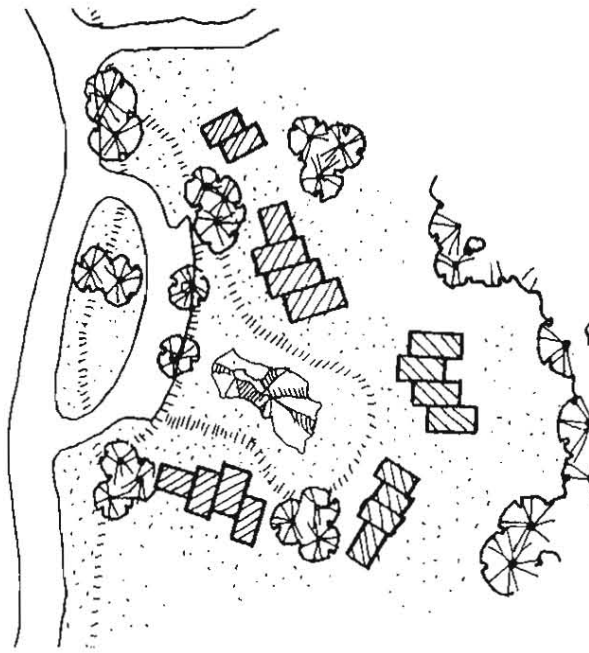
Cluster Housing may be described as housing that is joined together so that individual units share common walls, floors and ceilings. This may include single family dwellings

on small lots with “zero lot line” configurations. More importantly, the individual units share common open spaces and common facilities.

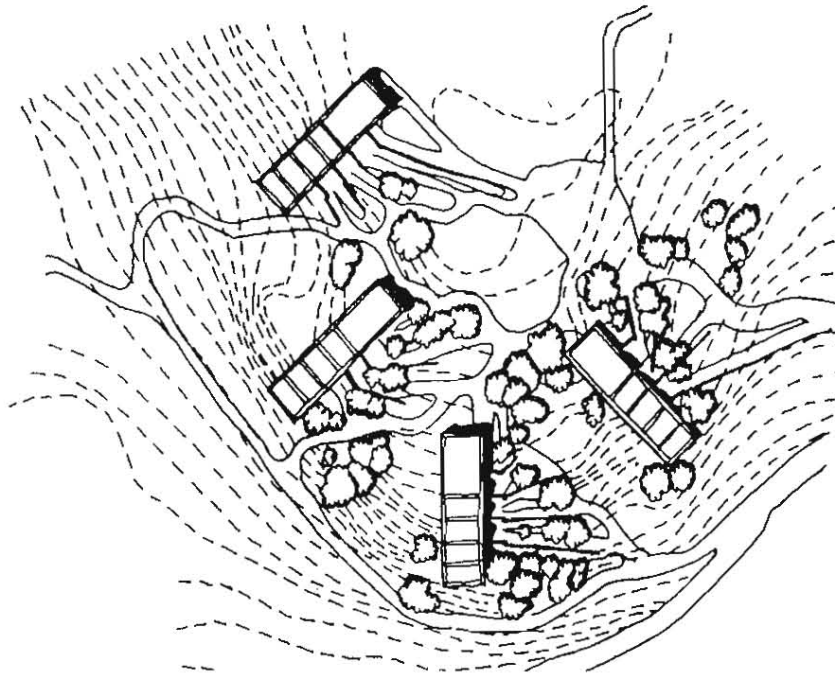
- Provisions of guideline IV.A6., “Reduction of Building Bulk on Hillsides,” guideline IV.A7., “Architectural Character,” guideline IV.A9., “Site Lighting” should be followed in the design of cluster residential development in hillside areas.

Other principles for the site design of cluster housing in hillside areas are:

- Allow front and side setback requirements to be flexible (including zero lot line conditions) to promote clustering of buildings if this will protect an existing slope.
- Allow flag lots with parking located adjacent to roadways to encourage terracing of buildings while minimizing roadway cut and fill.
- Avoid large expanses of flat areas such as parking lots that create an incongruous element in the slope.
- Site buildings with units having 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.
- Retain existing vegetation.



- Avoid long continuous building masses that create a “wall” effect and inhibit views. Townhouses in duplex and triplex arrangements are good building types for sloping sites.
- Groups of buildings should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation.
- Facades should be articulated to produce shadows through wall setbacks, overhangs, projecting windows, recessed openings, decks, and porches.
- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillside sites.
- The building facades and rooflines should, in contribution, provide a mixture of vertical and horizontal elements, but with more emphasis on verticality in cluster design.
- Stagger alignments of units both horizontally and vertically to create unit identity, privacy at entry, and in private outdoor space and to shape cluster open space.



Site Plan — Terraced Flats with private outdoor spaces.

- Flats may be stacked to terrace down toward a view and sunlight, creating privacy on balconies and terraces.
- Separate clusters with expanses of open space, including tree groupings.

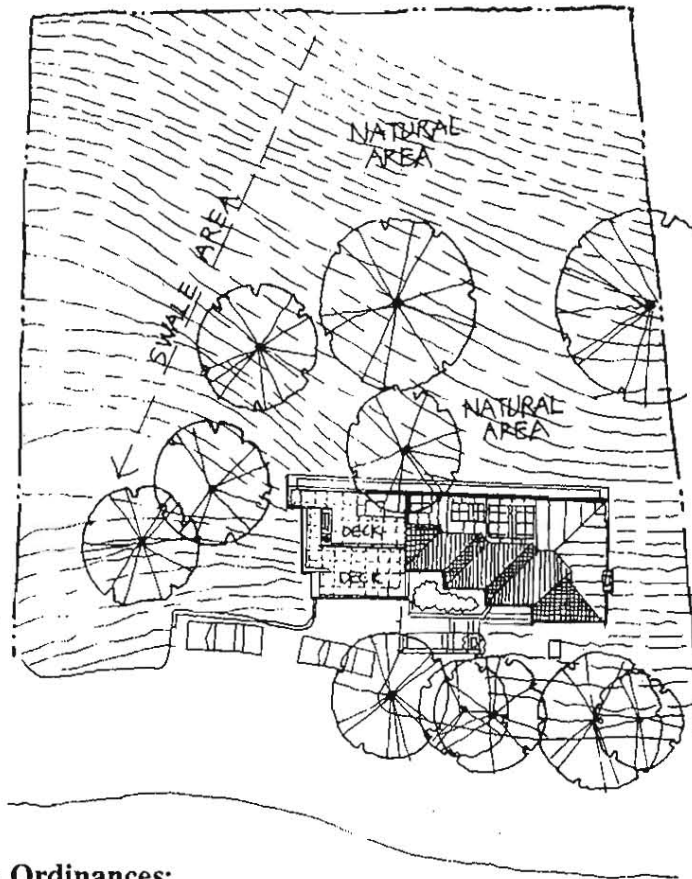
7. Planting Design for Hillside Residential Subdivision and Planned Development Projects.

- The provisions of guideline IV.A8., “Planting Design for Hillsides,” should be followed in the design of landscape plans for hillside residential subdivision and planned development projects.

8. Fire Hazards

- 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.

IV.B2. Single Family Residences on Individual Lots



1. Applicable City Ordinances:

- *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
- *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Residential Districts.”

2. Preservation of Existing Natural Features

Development proposals for single family homes on individual lots should demonstrate an effort to preserve and protect significant natural features in the layout and design of driveways, parking areas, building location, outdoor spaces, and accessory structures.

- The provisions of guidelines IV.A1., “Site Design Process,” IV.A2., “Preservation of Significant Trees” should be followed as general design criteria for the preservation of natural features in the planning of single family residences on individual lots in areas designated as *HR* and *HRR* land uses in the *General Plan 2000*.

- City Adopted Policies pertaining to the preservation of natural features in hillside residential development:
 - *City of San Rafael, General Plan 2000:*
 - Land Use Element, Policies: LU-9, LU-10, LU-11 and LU-29.
 - Parks and Recreation Element, Policies: R-2, R-4, R-12, R-14, R-28, R-31, R-35.
 - Natural Environment Element, Policies: NE-1, NE-2, NE-3, NE-4, NE-5, NE-9, NE-11, NE-13, NE-17, NE-20.
 - Health and Safety Element, Policies: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-19.
 - Residential Neighborhood Element, Policies: RES-1, RES-5, RES-6, RES-7, SVS-7, NG-13, NG-14.

3. Hillside Grading and Drainage

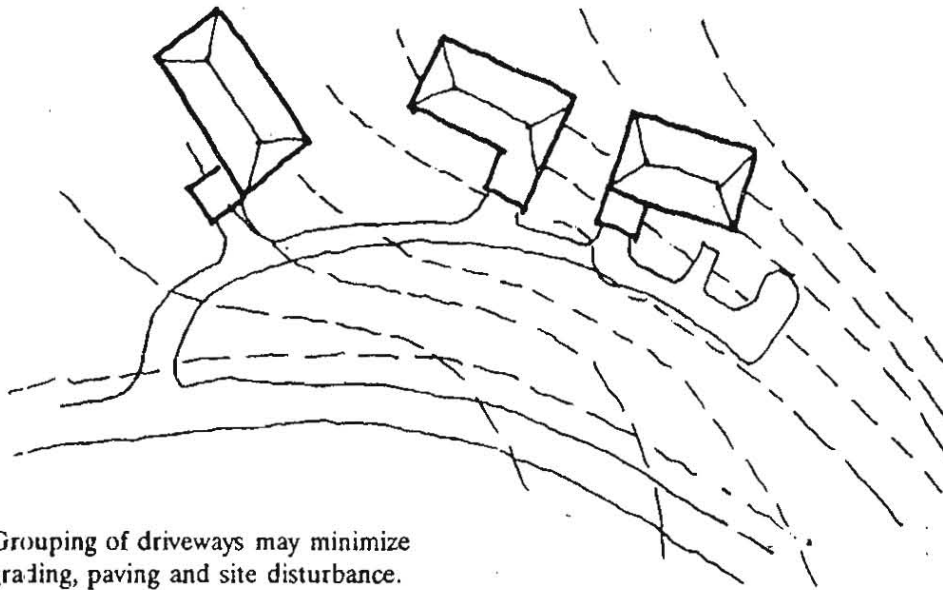
- The provisions of guideline IV.A3., “Hillside Grading and Drainage,” should be followed in the design of grading and drainage plans for single family residences on individual lots in *HR* and *HRR* areas as designated by the *General Plan 2000*:
 - City Ordinances pertaining to the design of grading and drainage plans for single family residences on individual lots in hillside areas designated as *HR* and *HRR* land uses in the *General Plan 2000*.
 - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, Environmental and Design Review.
 - City Review procedures pertaining to the design of grading and drainage plans for single family residences on individual lots in hillside areas designated as *HR* and *HRR* land uses in the *General Plan 2000*:
 - San Rafael Department of Public Works, Grading Plan Review.
 - City of San Rafael, Geotechnical Review Matrix Process for the *San Rafael General Plan 2000*.
 - City of San Rafael Standards pertaining to the design of grading and drainage plans for single family residences on individual lots:
 - City of San Rafael, Department of Public Works, Standard and Supplementary Conditions for Grading Permits.

4. Parking and Driveway Design

The provisions of guideline IV.A5., "Street Layout, Driveways and Parking" should be followed in the design of driveways for single family residences on individual lots in *HR* and *HRR* Land Use designations.

- **Parking.**

Tandem parking may be permitted on hillside lots served by an access drive with the approval of the Design Review Board and the City Engineer, when the allowance of tandem parking minimizes the impact of hillside development.



- **Driveway Design**

Driveways should be designed to provide direct access to the building site and, where possible, be aligned with the natural contours of the land. Driveways which serve more than one parcel are encouraged as a method of reducing unnecessary grading, paving and site disturbance. City standards as to the maximum number of dwellings served by a single private drive should be followed. Property owners shall enter into Common Easement maintenance agreements for private drives.

Driveway grade in hillside developments must comply with the City of San Rafael regulations governing driveway design. On driveways that are allowed to exceed the 18% slope (with Design Review Board, City Engineer, and Fire Department approval), either a coarse paving material or grooves for traction must be incorporated into the construction. Drainage from the driveway should be directed in a controlled manner.

The finished grade of the driveway shall conform to the finished grade of the lot.

5. **Architectural Design of Single Family Residences on Individual Lots in hillside areas with slopes of 25% or greater.**
 - Provisions of guideline IV.A6., "Reduction of Building Bulk on Hillsides" and guideline IV.A7., "Architectural Character" in Section IV. of this manual should be followed in the design of single family residences in the hillside areas identified above.
6. **Planting Design for Single Family Residences on Individual Lots in Hillside Areas with slopes of 25% or greater.**
 - The provisions of guideline A8, "Planting Design for Hillsides," in Section IV of this document should be followed in the design of landscape plans for single family residences on individual lots in the hillside areas identified above.
7. **The provisions of Section III, "Hillside Residential Development Standards" which regulate building height, floor area, building bulk and site coverage, apply to single family residences in Hillside areas with slope of 25% or greater.**

IV.B3. Multi-Family Residential Development



1. Applicable City Codes:

- *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, R-3 Zone, “Residential Districts.”

Title 14 of the San Rafael Municipal Code, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”

2. Preservation of Existing Natural Features

Hillside Residential Development plans should demonstrate an effort to preserve and protect significant natural features in the layout and design of streets, lots and grading patterns in multi-family residential development projects:

- The provisions of guidelines IV.A1., “Site Design Process,” IV.A2., “Preservation of Significant Trees” should be followed as general design criteria for the preservation of natural features in the planning of multi-family residential development projects.
- City Adopted Policies pertaining to or related to the preservation of natural features in hillside residential development:

— City of San Rafael, *General Plan 2000*:

- Land Use Element, Policies: LU-9, LU-10, LU-11 and LU-29.
- Parks and Recreation Element, Policies: R-2, R-4, R-12, R-14, R-28, R-31, R-35.
- Natural Environment Element, Policies: NE-1, NE-2, NE-3, NE-4, NE-5, NE-9, NE-11, NE-13, NE-17, NE-20.
- Health and Safety Element, Policies: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-19.
- Residential Neighborhood Element, Policies: RES-1, RES-5, RES-6, RES-7, SVS-7, NG-13, NG-14.

3. Hillside Grading and Drainage

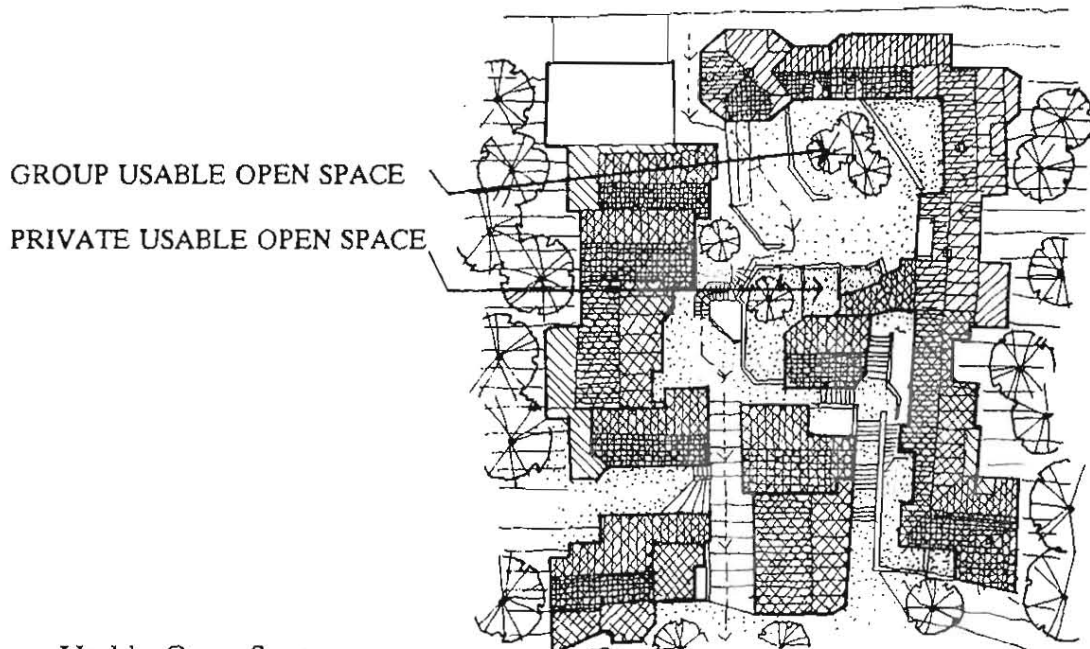
- The provisions of guideline IV.A3., “Hillside Grading and Drainage,” should be followed in the design of grading and drainage plans for multi-family residential development projects in *HR* and *HRR* areas as designated by the *General Plan 2000*.
 - City Ordinances pertaining to the design of grading and drainage plans for multi-family residential development projects in hillside areas designated as *HR* and *HRR* land uses in the *General Plan 2000*.
 - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
 - City Review procedures pertaining to the design of grading and drainage plans for multi-family residential development projects in hillside areas with slopes of 25% or greater:
 - San Rafael Department of Public Works, Grading Plan Review.
 - City of San Rafael, Geotechnical Review Matrix Process for the *San Rafael General Plan 2000*.
 - City of San Rafael Standards pertaining to the design of grading and drainage plans for multi-family residential development projects:
 - City of San Rafael, Department of Public Works, Standard and Supplementary Conditions for Grading Permits.

4. **Site Design Principles for Multi-Family Residential Areas in Hillside Areas with slopes of 25% or greater.**

- Provisions of guideline IV.A6., "Reduction of Building Bulk on Hillsides," guideline IV.A7., "Architectural Character," guideline IV.A9., "Site Lighting" should be followed in the design of cluster residential development in hillside areas.

Other principles for the site design of multi-family residential development in hillside areas are:

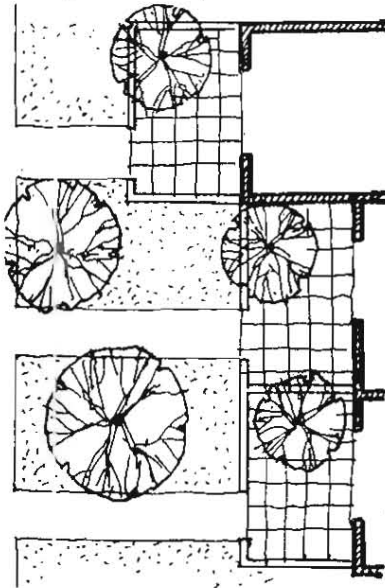
- Sloping sites offer opportunities to create and emphasize characteristics that are unique. These include emphasis on outdoor decks, roof gardens, terraces, roof forms, bay windows to maximize views from inside, clusters of carefully placed vegetation, framing of distant views with vegetation and building elements, pergolas, lookouts for viewing, sculptured stairs and walkways.
- Ideally there should be a 15 foot planted yard setback along the front and a 10 foot planted setback along side property lines, or as established by the Zoning Ordinance. The setback area should be fully landscaped, interrupted only by pedestrian areas. To promote the protection of significant natural features, allow front and side setback requirements to be flexible, with the discretion of Environmental Design Review.



- **Group Usable Open Space**
Group Usable Open Space is space for common use by the occupants of a development, normally including playgrounds, recreation courts, patios, and landscaped areas. Parking, driveways and loading areas are not considered Group Usable Open Space.

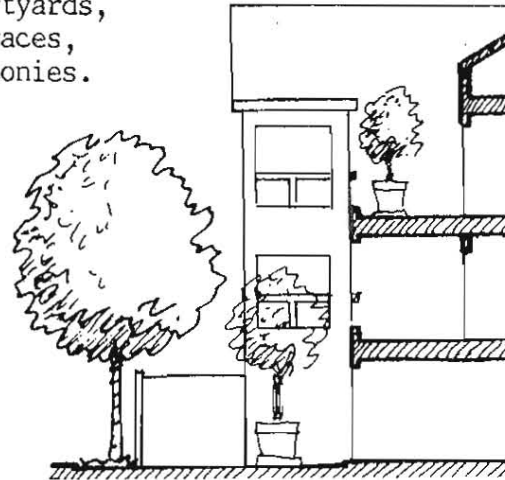
Provide all multi-family projects with Group Usable Open space for each dwelling unit consistent with the City of San Rafael regulations for multi-family residential development.

Provide at least one designated children's play area of at least 400 square feet for the first 25 dwelling units. This guideline does not apply to senior citizen residential projects. Additional requirements for usable outdoor areas are established by the Zoning Ordinance.



Private Usable Open Space

Courtyards,
Terraces,
Balconies.



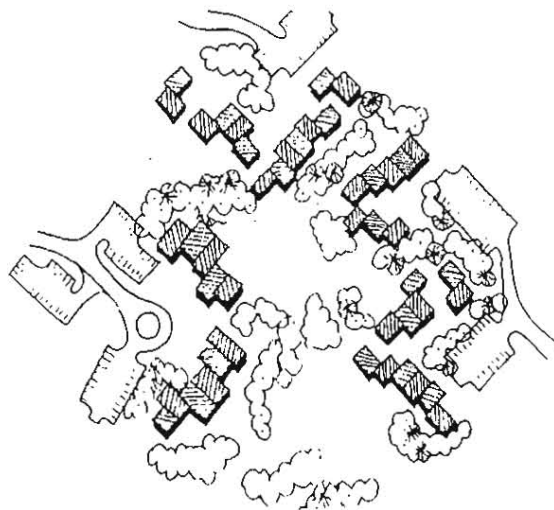
— Private Usable Open Space

All multi-family projects are encouraged to provide Private Usable Open Space for each dwelling unit consistent with the City of San Rafael regulations for multi-family residential development.

The City of San Rafael regulations governing multi-family residential open spaces should apply with the following additional recommendations:

- Private open spaces on the ground should be a minimum of 12 feet in each plan dimension, or the minimum established by the Zoning Ordinance, and should be screened from public view by plantings, privacy fences, and other similar methods.
 - Decks used for upper floor private space should have a minimum dimension of 8 feet, or the minimum established by the Zoning Ordinance.
 - Use terracing to achieve level spaces when providing open space on steep slopes.
 - Locate private outdoor spaces to receive solar gain in the winter months.
- Avoid large expanses of flat areas such as parking lots that create an incongruous element in the slope.

- Site buildings with units having 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 building facades that are designed with a ground level wall of repetitive garage doors.
- Retain existing vegetation.
- Avoid long continuous building masses that create a “wall” effect and inhibit views. for sloping sites.
- Groups of buildings should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation.
- Facades should be articulated to produce shadows through wall setbacks, overhangs, projecting windows, recessed openings, decks, and porches.
- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillside sites.
- The building facades and rooflines should, in contribution, provide a mixture of vertical and horizontal elements, but with more emphasis on verticality in cluster design.
- Stagger alignments of units both horizontally and vertically to create unit identity, privacy at entry, and in private outdoor space and to shape common open space.



Buildings with common open spaces and integral existing tree groupings.

- Separate buildings with common open spaces, integrate existing or provide new tree groupings in these spaces.

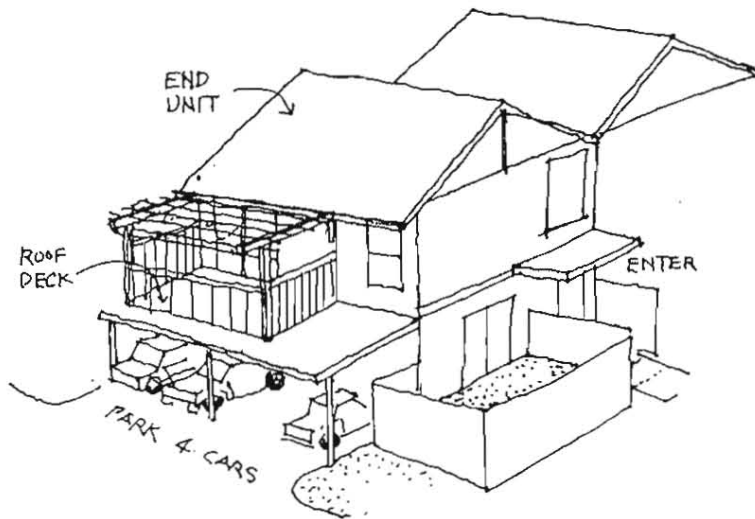
5. Parking Design for Multi-Family Residential Development on Hillside Sites.

- Applicable City Codes:

- Title 14 of the San Rafael Municipal Code, City of San Rafael Zoning Ordinance, "Parking Standards."

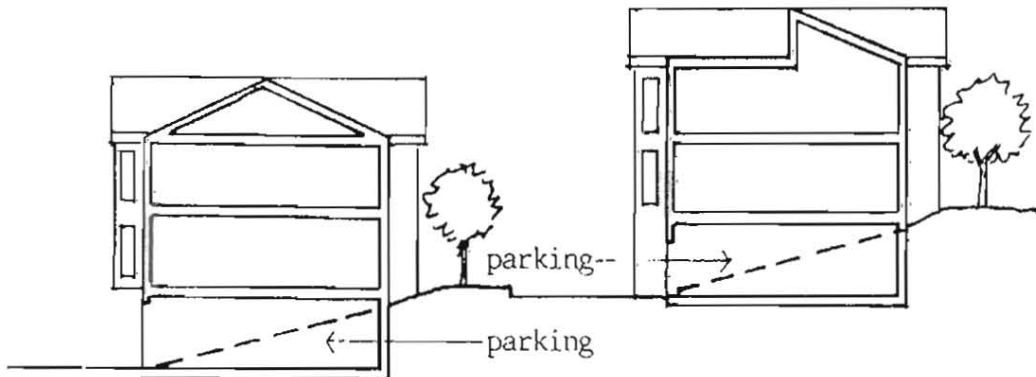
- Covered and "Tuck-under" Parking.

- Covered parking areas, by means of garages, carports, and trellised canopies, are strongly encouraged.



Covered Parking

- Tuck-under parking, on sloping sites at half or full level below ground, is encouraged.



TUCK UNDER PARKING

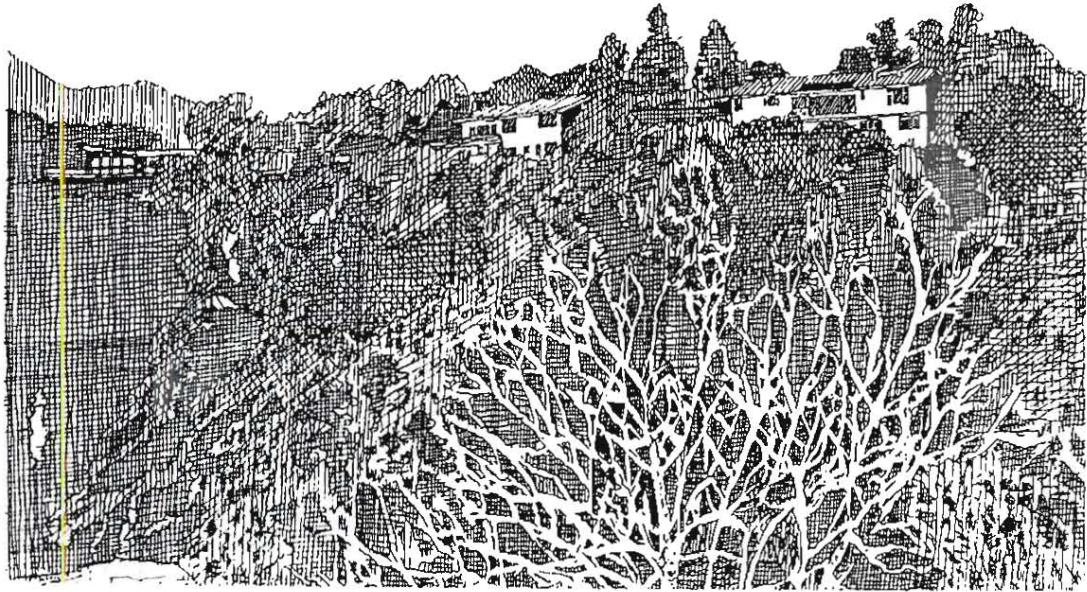
- **Surface Parking Areas**

- For all surface parking areas, an internal area equal to a minimum of 10% of the total parking area should be planted with a combination of trees and shrubs. Tree spacing should be such that every designated parking space is within 30 feet of the trunk of a tree. Turf areas are discouraged. See Appendix B. "Plant selection Guide."

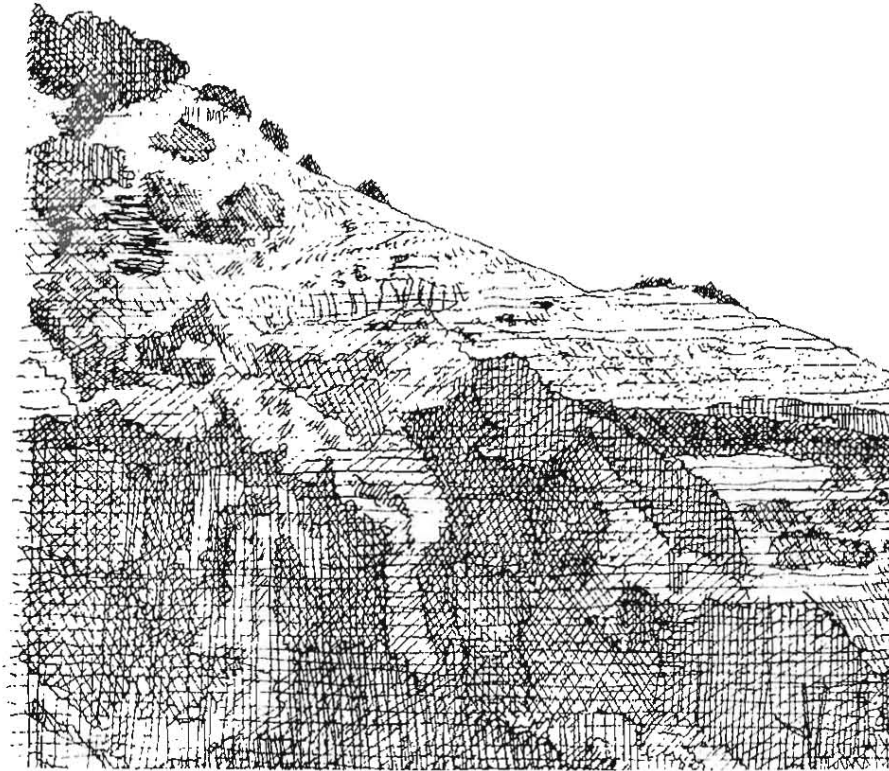
6. Planting Design for Multi-family Residential Development Projects.

- The provisions of guideline IV.A8., "Planting Design for Hillsides," should be followed in the design of landscape plans for multi-family residential development projects in hillside areas that have the *HR* and *HRR* Land Use designations in the *General Plan 2000* or are located on properties with slopes of 25% or greater.
- 7. The provisions of Section III, "Hillside Residential Development Standards," which regulate building height and bulk, apply to multi-family residential development.**

IV.C. Additional Guidelines for Special Areas



IV.C1. Highly Visible Ridgeline Areas



This Guideline lists development standards and design guidelines that protect the scenic and aesthetic value of San Rafael's highly visible ridgeline areas. The City of San Rafael is situated among a group of hills and ridges which constitute a significant natural feature visible to all persons travelling the major highways and arterials through the county, as well as the citizens residing in and around the community. In order to insure the preservation of these hills, ridges and ridgelines and their natural features, a more harmonious relationship is required between the existing natural environment and the growing man-made environment.

- Generally, building sites should be selected so that construction occurs below the ridge of a hillside.
- The selection of each final building envelope is affected by many factors specific to each property and can only be established on a case-by-case basis.

The potential hazards created by development, grading and alteration of drainage patterns on hillsides are not only a concern of the development itself but may cause damage to properties downhill of the property. For this reason, the larger off-site implications of all proposed buildings and improvements such as roads, driveways, and other built improvements such as parking areas, land form grading and drainage should be considered in all Environmental and Design Reviews.

While the following definitions and guidelines are compatible with current regulations, they do not supersede adopted City policies pertaining to development in ridgeline areas. These currently include the policies pertaining to the preservation of natural features in San Rafael's *General Plan 2000* (NE-14, NE-15, NE-17).

1. Definitions

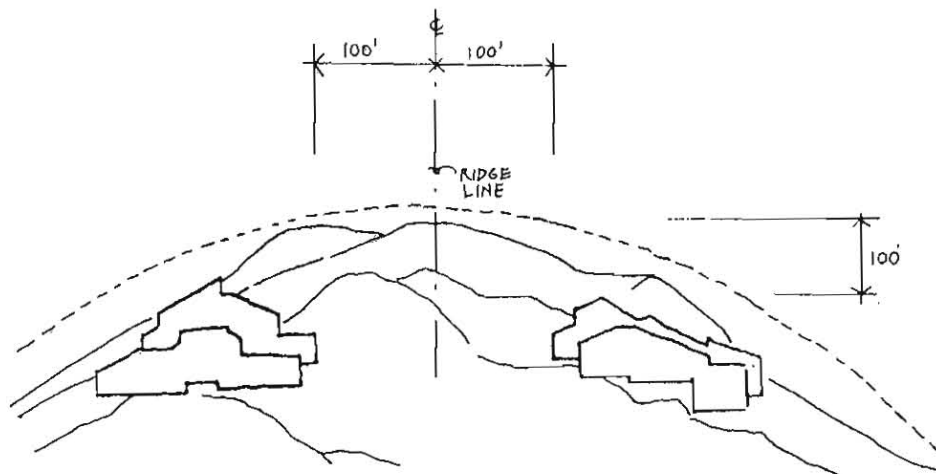
- "Ridgeline" means a long, narrow, conspicuous elevation of land.
- "Knoll" means a hilltop or a small round hill.

2. Development near ridgelines or knolls.

The development of new independent structures shall be prohibited within 100 vertical feet of highly visible ridgelines except in those cases where loss of development potential would deprive the property owner of all reasonable economic use of the land.

An exception may be granted under this circumstance provided the following findings can be made:

- 1) there are no site development alternatives which avoid ridgeline development and the density has been reduced to the minimum allowed by the General Plan land use designation density range; and
- 2) no new subdivision lots are created which will result in ridgeline development; and
- 3) the proposed development will not have significant adverse visual impacts due to modifications for height, bulk, design, size, location, siting, and landscaping which avoid or minimize the visual impacts of the development as viewed from all public viewing areas.



Avoid locating structures near highly visible ridgelines.

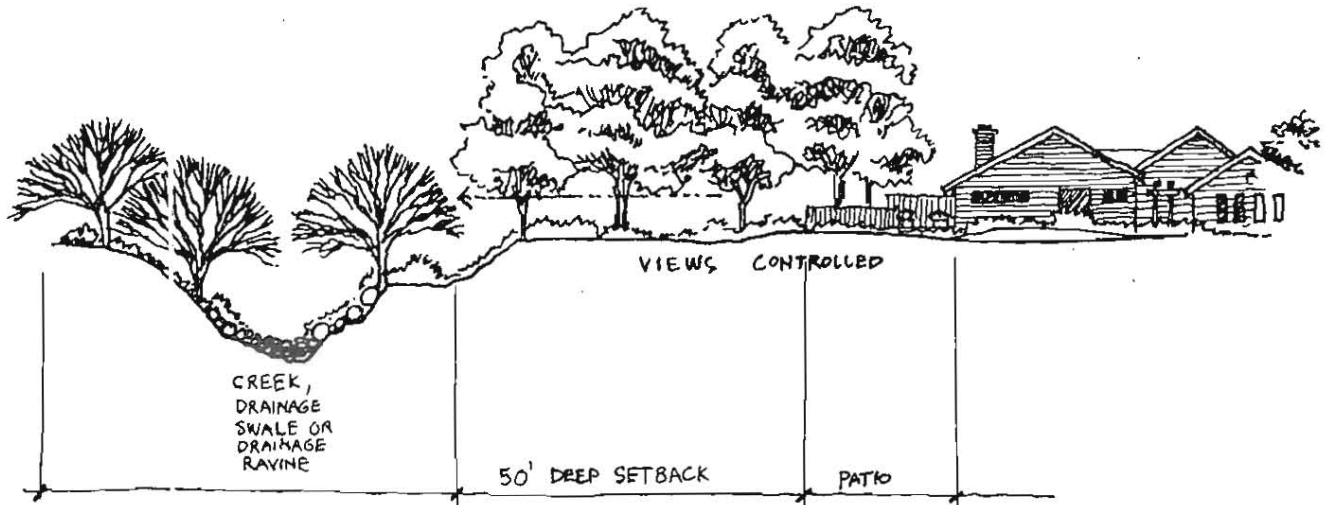
In those rare instances, development near ridgelines or knolls is permitted subject to the following Guidelines:

- a. Proposed building sites and/or structures shall not detrimentally impact a highly visible ridgeline or knoll. Development on any parcel within 100 feet measured vertically from a highly visible ridgeline shall be subject to Environmental and Design Review.
- b. No point on any structure subject to the provisions of this guideline shall be closer to a highly visible ridgeline than 100 feet measured horizontally on a topographic map or 50 feet measured vertically on a cross section, whichever is more restrictive. In no case, shall the roof line or any other portion of a structure extend above the line of sight between a ridgeline and any public right of way, whether the ridgeline is above or below the right-of-way.
- c. Design of building sites should be sensitive to the natural terrain of prominent knolls. Structures should be located in such a way as to minimize grading and building pads must preserve prominent knolls.
- d. The development plans for Planned Hillside Residential Development projects shall provide for the natural preservation of highly visible ridgelines, protecting them from development impacts and maintaining a backdrop for development. Significant views of the natural ridge silhouette shall be maintained from public rights-of-way and other public open spaces, especially major highways. Proposed structures shall not project above the ridge silhouette as visible from City designated viewpoints. The ridgeline's natural contour and vegetation shall remain intact with development maintaining a minimum horizontal setback of 100 feet in width from the center of the ridgeline to the undisturbed setback line. Lesser setback distances may be authorized at the discretion of the City Council if it can be demonstrated that the objectives of this will be achieved and, in any case no units will be located in that setback.
- e. When placement of roads near ridges and on slopes is proposed, acceptable placements shall include a split roadway section to accommodate grade, knob removal to accommodate views from the road, and the rounding off of cut slopes to improve appearance.
- f. Multi-story homes are not considered appropriate for ridgeline lots.
- g. Fences and freestanding walls should be located away from any ridgeline, knoll or crest of any slope so that fences and walls are not visible against the sky from offsite.

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IV.C2. Hillside Drainage Swales and Drainage Ravines



Homes backing up to a drainage swale or ravine.

This Guideline lists development standards and design guidelines that protect the scenic and aesthetic value of San Rafael's hillside riparian areas on lands with the *HR* and *HRR* Land Use designation in the *General Plan 2000* and on lands with slopes of 25% or greater. The riparian areas and watersheds create areas of natural focus in the hillside areas and should be preserved and protected. In order to insure the preservation of these riparian areas, a more harmonious relationship is required between the existing natural environment and the growing man-made environment.

- New Hillside Residential Development applications are required to provide detailed hydrologic analysis to be reviewed by the City Engineer. Developers may be required to replace inadequate on and off-site existing hillside storm drainage facilities.
- A comprehensive study may be required for each project to develop specific information on the nature, extent and magnitude of slope stability hazards in watershed areas. Basic data required would be suitable for determining the types and severity of watershed and debris flow paths that may influence developments. The study product would identify:
 - Major watershed areas related to specific neighborhoods.
 - Areas impacted by recent movements of debris or other surficial materials.
 - Areas identified as "High Energy Flow Path Zones."

- Areas of various degrees of slope, especially areas with steep slopes of 65% or greater.

The potential hazards created by development, grading and alteration of drainage patterns on hillsides are not only a concern of the development itself but may cause damage to properties downhill of the property. For this reason, the larger off-site implications of all proposed buildings and improvements such as roads, driveways, and other built improvements such as parking areas, land form grading and drainage should be considered in all Environmental Design Reviews.

While the following definitions and guidelines are compatible with current regulations, they do not supersede adopted City policies pertaining to development in ridgeline areas. These currently include the policies pertaining to the preservation of natural features in *San Rafael's General Plan 2000*.

Development Near Drainage Swales and Drainage Ravines

The general intent of this Guideline is to discourage development near hillside riparian areas. Currently the City of San Rafael requires a 25 foot deep setback from the high top of creek banks for all structures. Wider setbacks (100 feet ideally) will be required on larger parcels through project review. See the Natural Environment Element of the *General Plan 2000* for additional policies related to the Protection of Wetland Buffer Areas.

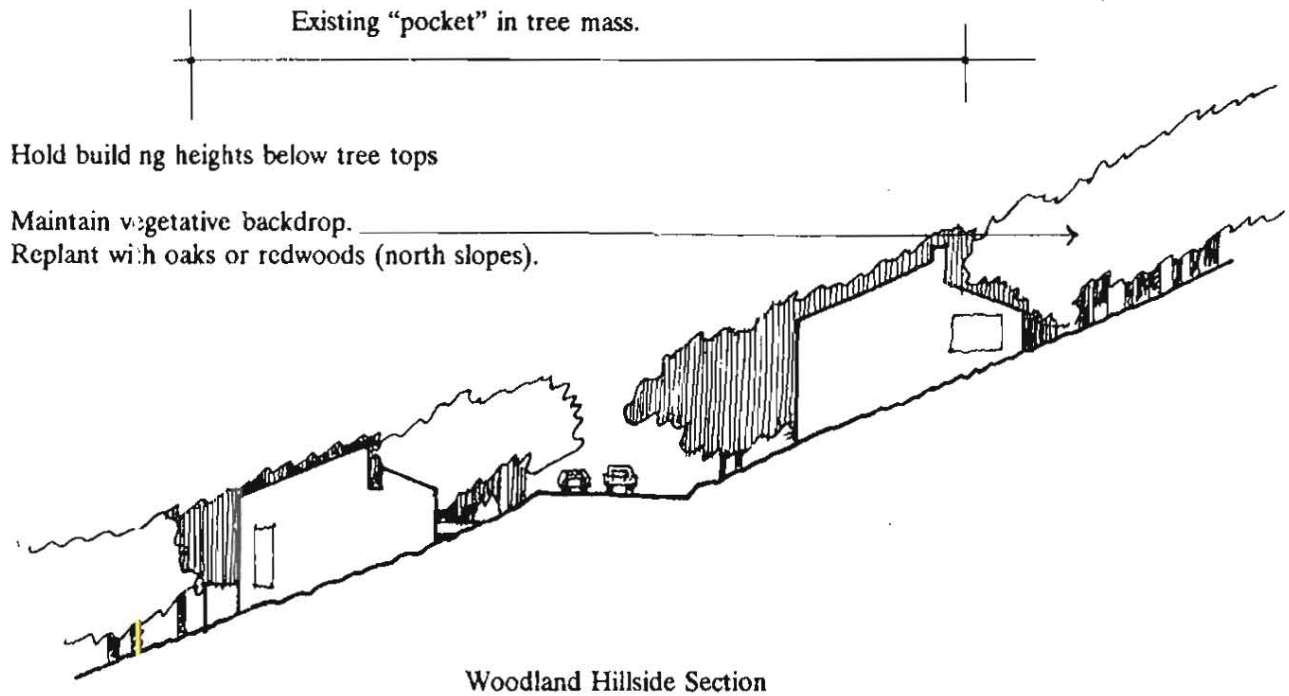
- a. Development setback in drainage swales. All watersheds exceeding 10 acres shall be considered "major" watersheds and shall be reviewed on a case-by-case basis to determine development setback requirements. When the applicable planned development plan requires the retention of natural drainage swales, no tentative subdivision map will be approved without a hydrologic analysis to determine an adequate setback for preservation of natural drainage patterns, public safety and riparian vegetation and wildlife.
- b. Filling in of watercourses, canyons, or streambeds is prohibited.
- c. Debris basins, rip-rap, and energy dissipation devices shall be provided when necessary to reduce erosion when grading is undertaken. Except for necessary flood control facilities, significant natural drainage courses shall be protected from grading activity. In instances where crossing is required, a natural crossing and bank protection is preferred over steel and concrete systems. Where brow ditches are required, they shall be naturalized with plant materials and native rocks.
- d. Natural drainage courses shall be preserved and integrated into project design.
- e. Stream Bank Stabilization
Self formed stream channels tend to be in a state of equilibrium, nearly stable, and usually do not require artificial bank stabilization. Land use changes that cause an increase in impervious surfaces or sedimentation will result in channel erosion. This

may require measures to stabilize the stream bank.

- 1) Stream rehabilitation is the preferred method of stabilization, its objective being to maintain the natural character of the watercourse and riparian area. The process may include enlarging the channel at points of obstruction, clearing obstructions at natural bend and points of constriction, limitation of use in areas of excessive erosion and restoration of riparian vegetation.
 - 2) Concrete channels and other mechanical measures of stabilization should not be permitted unless no other alternative exists.
 - 3) If a stream bank stabilization other than stream rehabilitation and vegetative methods is required, hand placed stone or rock rip-rap are the preferred methods.
- f. Planting in Riparian Areas.
- The riparian area should be kept as close as possible to its natural state. The open spaces and indigenous riparian vegetation such as live oaks, sycamores, bays and scrub should be preserved and emphasized in new plantings. Ornamental plantings and the introduction of non-native species should be avoided.

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IV.C3. Hillslope Habitat Areas



The open and wooded hillsides contribute significantly to the scenic backdrop of the City when viewed from its developed areas in the valley floors. This is due to the low density of development in the upland areas, the minimal visual bulk of most residential structures and the heavy vegetative screen for residences.

The upland hillslope areas are characterized as having unique scenic qualities, vegetation, wildlife habitat and limited development potential.

The major plant and wildlife communities are as follows:

- Oak Savannah - Oak Savannah is comprised of open grassland with isolated and scattered oak trees.
- Oak Woodland - The Oak Woodland community is comprised of greater tree cover than the Oak Savannah community. The tree canopy may be made up of coast live oak, bay oak, California bay, madrone and buckeye trees. The understory includes different herbs and grasses depending on the quantity of sun exposure. In addition to their wildlife habitat value, Oak Woodlands are important to soil development and watershed protection.
- Redwood Groves - Small groves of redwood trees are found on north facing slopes and valleys which contain natural seepage or springs.

1. Wildland Fire Hazards in Hillslope Areas

The vegetation in hillslope areas of the City is extremely flammable during the late summer, fall and times of drought. This creates a serious hazard in undeveloped areas and large lot homesites with their extensive areas of unirrigated vegetation. In addition to the dry periods of the year, wildland fire hazard is related to slope steepness, vegetation type, exposure to sun and accessibility to fire fighting equipment. Steeper slopes are a major hazard because they have a fire spreading effect similar to high velocity winds. Fuel loading, which reflects the different amounts of combustible material provided by various vegetation types helps determine the degree of hazard.

To reduce the risk, the Fire Department maintains a system of fire trails and a "Greenbelt Program" where information on fire hazard is provided to residences adjacent to open space. The "Greenbelt Program" promotes creative landscaping, with attention to fire resistive characteristics; erosion control; and fuel reduction programs to clear fire transmitting growth.

The Fire Department coordinates with the Marin Municipal Water District and City Departments through the City's development review process to insure that water supply necessary for fire safety and other Fire Department concerns are met for new development.

Additional guidelines pertaining to the transitional areas between undeveloped hillslope areas and new development are:

— 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 fires 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. Bare dirt is a good fire break. Thin native plants by pruning to reduce their fuel volume.
- 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. See Appendix B for suggestions of reduced fuel volume plantings.

2. Development in Hillslope Habitat Areas

- The *San Rafael General Plan 2000* encourages residential clustering in impact sensitive hillslope habitat areas to preserve and protect natural features and vegetation groupings. Private properties zoned for residential development projects that are designated as **Hillslope Resource Residential** or **Hillside Residential** in the *General Plan 2000*, or are located on properties with slopes of 25% or greater, should follow the provisions of this guideline.
- Site Design Principles for Cluster Housing in Hillside Areas

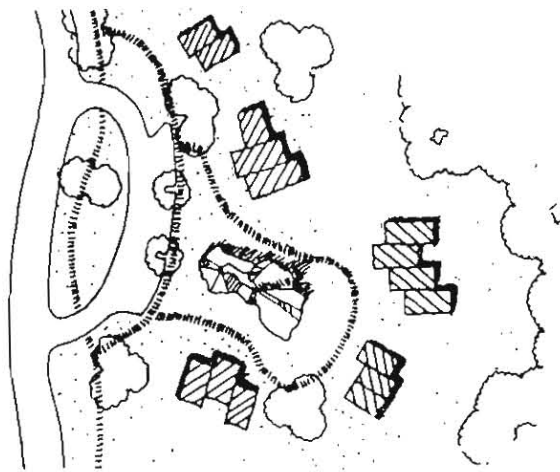
Cluster Housing may be described as housing that is joined together so that individual units share common walls, floors and ceilings. More importantly, the individual units share common open spaces and common facilities.

- Provisions of guideline A6, "Reduction of Building Bulk on Hillsides," guideline A7, "Architectural Character," guideline A9, "Site Lighting" in Section IV of this document should be followed in the design of cluster residential development in hillslope habitat areas.

Other principles for the site design of cluster housing in hillslope habitat areas are:

- Incorporate existing trees and vegetation groups into the design of projects in hillslope habitat areas:
 - Oak Savannah habitats - incorporate existing oaks into the design of Group Usable Open Spaces and Private Usable Open Spaces as well as using existing vegetation to screen new development from offsite views.

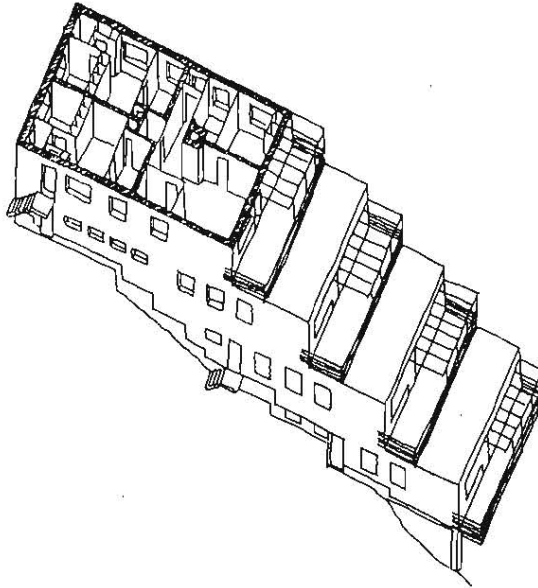
- Oak Woodland habitats - preserve existing tree canopies and place new development in "pockets" within the overall tree massing. Use existing vegetation to screen new development from offsite views.
- Allow front and side setback requirements to be flexible (including zero lot line conditions) to promote clustering of buildings if this will protect an existing slope.
- Allow flag lots with parking located adjacent to roadways to encourage terracing of buildings while minimizing roadway cut and fill.
- Avoid large expanses of flat areas such as parking lots that create an incongruous element in the slope.
- Site buildings with units having 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.



Townhouses in duplex or triplex arrangements.

- Avoid long continuous building masses that create a "wall" effect and inhibit views. Townhouses in duplex and triplex arrangements are good building types for sloping sites.
- Groups of buildings should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation.
- Facades should be articulated to produce shadows through wall setbacks, overhangs, projecting windows, recessed openings, decks, and porches.

- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillslope sites.
- Stagger alignments of units both horizontally and vertically to create unit identity, privacy at entry, and in private outdoor space and to shape cluster open space.



Terraced flats with private outdoor spaces.

- Flats may be stacked to terrace down toward a view and sunlight, creating privacy on balconies and terraces.
- Separate clusters with expanses of open space, including tree groupings.
- Site Design and Architectural Design of Single Family Residences on Individual Lots in hillslope habitat areas.
 - Provisions of guideline A1, “Site Design Process,” guideline A2, “Preservation of Significant Trees,” guideline A3, “Hillside Grading and Drainage,” guideline A6, “Reduction of Building Bulk on Hillsides” and guideline A7, “Architectural Character” in Section IV. of this manual should be followed in the design of single family residences on individual lots in hillslope habitat areas.

