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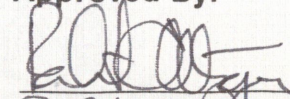
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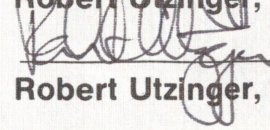
Afflerbaugh Community
by
Lauri A. Moffet

**An undergraduate thesis submitted in partial fulfillment of the
requirements for the degree
of
Bachelor of Architecture**

Approved By:



Robert Utzinger, Thesis Advisor



Robert Utzinger, Director

**Montana State University
Bozeman, Montana**

June, 1983



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Concepts and Development

Concepts and Development

Theory

In this thesis I am dealing with two major issues, these are:

- The importance of identity in balance with a coherent community. The personal identification of a meaningful place can create a point of reference and sense of center.
- The harmonizing of architectural form and space with the natural spirit of a site, using design ideas of compatible form and tools of place, path, pattern and edges.

The building type chosen for study is that of housing. It was chosen because I believe it is the one form of architecture which touches everyone.

Some of the origins of the investigation of different types of housing may be simplified and traced to a reaction to the current prevailing trends in American housing and consequent land use. The most prevalent form of housing today is the single family residence. The attachment to this form of housing has created the sprawling subdivisions which have some major problems. First is the stress upon the limited land we have available to satisfy both our needs and those of natural ecosystems. The amount of land being consumed for housing is alarming, and being developed with no respect for and denial of the inherent natural character of that land. Suburb developments leave their gridded footprint on every type of terrain in any context with little variation. Each house is then surrounded in a sea of green lawn which either bleeds into the next yard or is fenced off, claimed and conquered by the owner providing him with a buffer to the rest of the world. These houses then have their major address to the street and to another house across the street. This grid system does not create a community or foster a sense of neighborhood. Sergius Chermayeff states the problem this way:

"... suburbia contains neither the natural order of a great estate nor the man-made order of the historic city... The suburb fails to be a countryside because it is too dense. It fails to be a city because it is not dense enough. Countless

scattered housed dropped like stones on neat rows of development lots do not create order, nor generate community."¹

The other extreme is the high rise development. Being very high density, it conserves on land use, but creates a new set of problems. One of the most serious is the residents' disengagement from the land by the typical high rise design. This disengagement is not only from the land and natural processes, but from the rest of the community in general which can cause feelings of loneliness, anomynity, indifference and apathy towards the community interests.² Most high rises also lack a humanistic scale. The dwelling should be a place from which we can relate to and orient ourselves within the larger urban context. It therefore needs to be scaled to the human and to involve him with his environment.

The newly popular multi-family and condominium developments appear to be solving some of the problems connected with the two previous forms of housing. These developments are of a scale and density to blend with an urban setting and to conserve open land. In connection with Sea Ranch, Charles Moore states that "A great virtue of the condominium is the possibility for dwellings to come together into a partnership with the land which individually they are to puny to achieve."³ Sensitively designed solutions have the most opportunity to nurture a strong sense of community and identity within the larger context. What is generally missing is a sense of individuality, territory and personal identity within the development.

One approach to the issue of building type is to take the desirable elements of these forms of housing and distill them into concepts to be used in the design process. For example, the suburban lawn in its essence is an expression of a personal envelope of space, autonomy and ownership. The scale of the propped project is most compatable with that of the single family residence and the condominium developments. Some

of the goals to be studied are:

- The harmony of built form and natural form.
- Economy of land. To provide common open grounds, thus consolidating the individual lawns of the single family residence. While doing this, there is still a need to provide some form of exterior private space which acts as an extension of interior space and as a buffer for each unit.
- To provide opportunities for interaction of the residents with the natural context of the site, so that they are aware of and part of their surrounding environment. "Comfort is confused with the absence of sensation."⁴ That is a very undesirable situation.
- To understand what scale of development will generate a feeling of neighborhood and yet preserve a sense of individual identity within that development.
- To provide variety both in built form and in experience.

In studying aspects of architectural design in connection with the topic and intent of this thesis, several important categories emerge. These are: site/building relationships, movement and paths, domains and their edges and the spirit of place. The concepts are very intertwined and grow from attitudes concerning the site. Some of the goals connected with this particular site are:

- Melding of built forms with the site without the loss of their individual identities. The buildings should not conquer the site but become part of it, building upon the site's inherent character and reinforcing the spirit of place.
- To achieve a partnership with the land and the larger context through appropriate scale.
- Siting and designing each structure in response to its particular location on the site.

The remaining ideas of movements and paths, and domains and their edges, are very intertwined through the concept of patterns being "Composed of paths and places . . . It is the system by which they are related that allows us to make sense of a bounded space."⁵

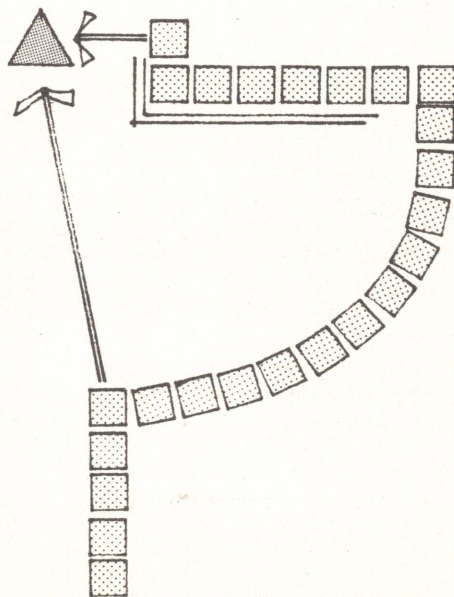


Figure 1

The path may be abstracted as a symbol of continuation of life events. It provides the opportunity for experiences. In the creation of a meaningful path, there is a beginning and an end, places of movement and repose, eddy points before and after obstacles where events can take place. Relative position along a path may have a great effect on the perception of what is ahead because the distance between object and observer may dictate his understanding of that object. If observed from a distance, the object is perceived in its entirety and has meaning in terms of overall form or its relative position in space. At close range, understanding is conveyed by a particular area or point of the object.⁶ (Figure 1) This phenomena can lend a sense of surprise yet familiarity.

Surface texture also has a great deal to do with velocity along a path and with degree of contact with objects. Smoothness invites contact while roughness encourages distance. The more senses that can be brought into play along the path, the more meaningful experience it will become.

"They (Japanese) were particularly ingenious in stretching visual space by exaggerating kinesthetic involvement. Not only are their gardens designed to be viewed with the eyes, but more than the usual number of muscular sensations are built into the experience of walking through a Japanese garden. The visitor is periodically forced to watch his step as he picks his way along irregularly spaced stepstones set in a pool. At each rock he must pause and look down to see where to step next. Even the neck muscles are deliberately brought into play. Looking up, he is arrested for a moment by a view that is broken as soon as he moves to a new position."⁷

If more involvement can be induced than casually walking through a space, the richer, more meaningful and memorable that place may become. If there is an effort required to get to a destination, achieving it represents increased motivation, more intense interest, and an enthusiasm for the encounter.

These paths form joints between successive and attached domains, or journeys within one. The relationship between

domains is a function of the extent or their separation, how they are attached and the nature of the transition in between. In architecture, the nature of the relationship between the interior and exterior domains is expressed by their edges, the wall and its openings.⁸ The nature of the boundry either concentrates attention within the domain, or allows expansion beyond. Understanding the boundries of and pathways connected to it, help in the identification of a place.

The spirit of the place builds upon a combination of stimuli in the pattern of paths and domains. It is dependent upon what and how much the individual perceives and how he perceives it. It is a purely qualitative observation which should not deteriorate over time, but should enhance each encounter with the place.

These are some of the issues which directly affect the design of this thesis. They have been broken into categories for clarity of explanation but they are very connected and dependant upon each other for development and success.

Intent

The intent of this thesis is to study a form of dwelling and the interjection of an architectural statement into a natural environment without disruption or alteration of the inherent spirit and character of the site. The project is not concerned with economics, but with excellence of design.

Project Definition

"It [cluster housing] may simply 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."⁹

"A P.U.D. [planned unit development] is a parcel of land planned as a single unit rather than as an aggregate of individual lots. . . "¹⁰

These definitions are the basis for the term chosen to describe the type of dwelling and development to be studied in this thesis. The term chosen is a Cluster P.U.D. Thus, this project utilizes the ideas of attached units while designing the entire site holistically. A major difference between this development and most cluster housing projects is the importance of individuality. Here, in the Cluster P.U.D., no two units will be identical, each will be recognized through uniqueness of form, path and orientation within the whole. For the resident, his identifiable place within the community can thus become his point of reference and sense of center. Although definable as a single entity, each unit is also an integral member of the whole. The coherence of the whole is achieved through the use of common vocabulary and character. Thus, the design of the development is based upon the idea of theme and variation, where the public identity is transmitted through the character and coherence of the planned community as a whole, yet is very personalized on the individual level.

User Group

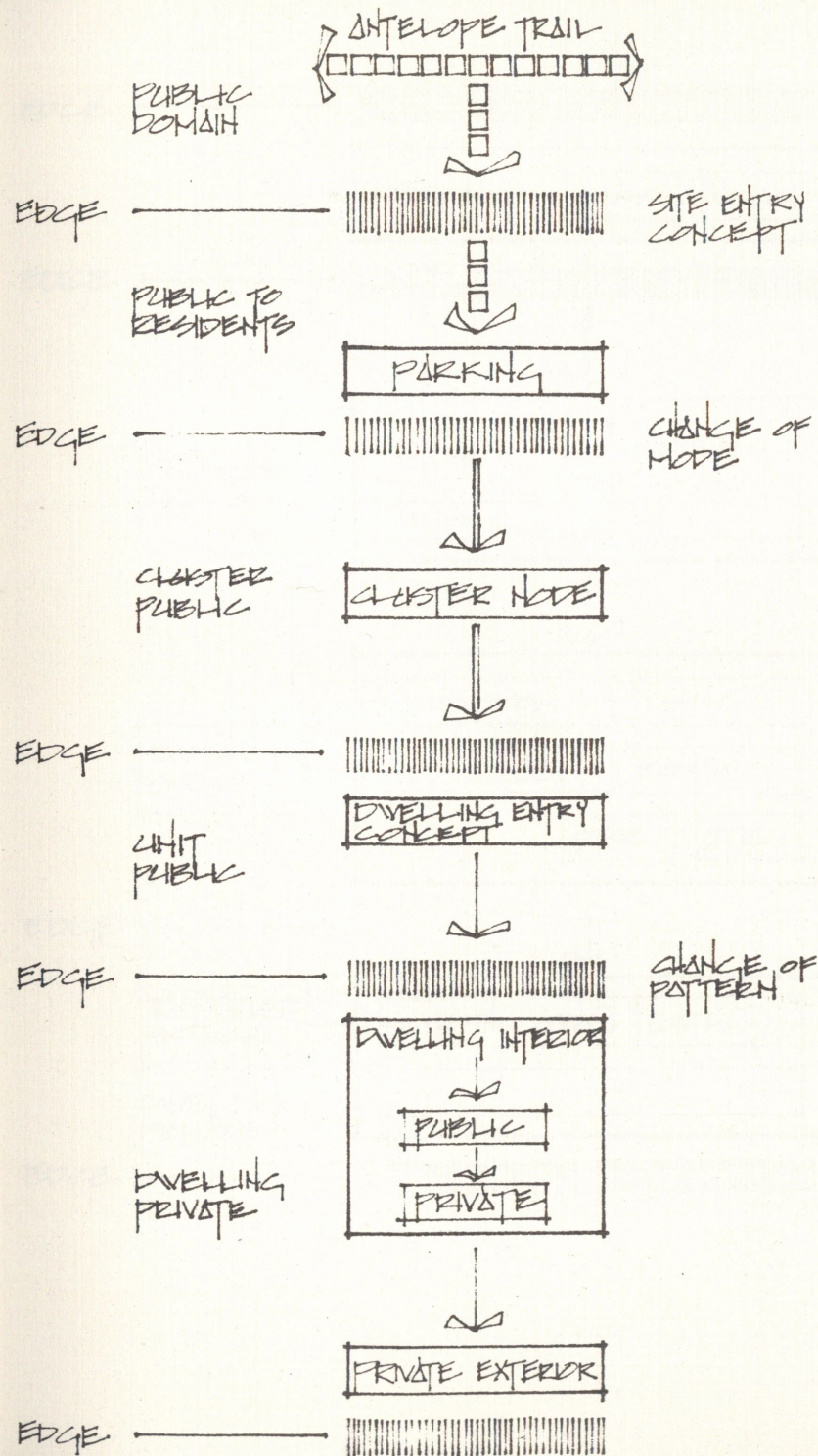
The user group for these dwellings will be determined primarily by two things: economics and attitudes towards architectural site manipulation. The cost of the dwellings is simply a resultant from the overriding concern for aesthetics and quality of space. The group of people in this income bracket appears to be a fairly healthy number of people in Billings. The second major determinant is the site itself. Since one of the major goals of the thesis is the interjection of the architectural form without disturbing the natural character, the inherent ruggedness of the site along with its slope and unrestrained drops into the canal may rule out a number of users such as the aged, handicapped or families with young children. These concerns narrow the groupings down to singles, couples with no or grown children, etc., who are fairly affluent and have genuine concern for their environment.

Implications of User Group

Their implied social status has definite references regarding parking. These are:

- provision for at least two cars.
- well designed, private parking.
- protection from vandalism and theft.
- visible from unit.
- space provided for guests and various recreational vehicles such as boats, campers, etc. which can be shared commodities, not connected to each unit.

Privacy without isolation or alienation will be of major concern.

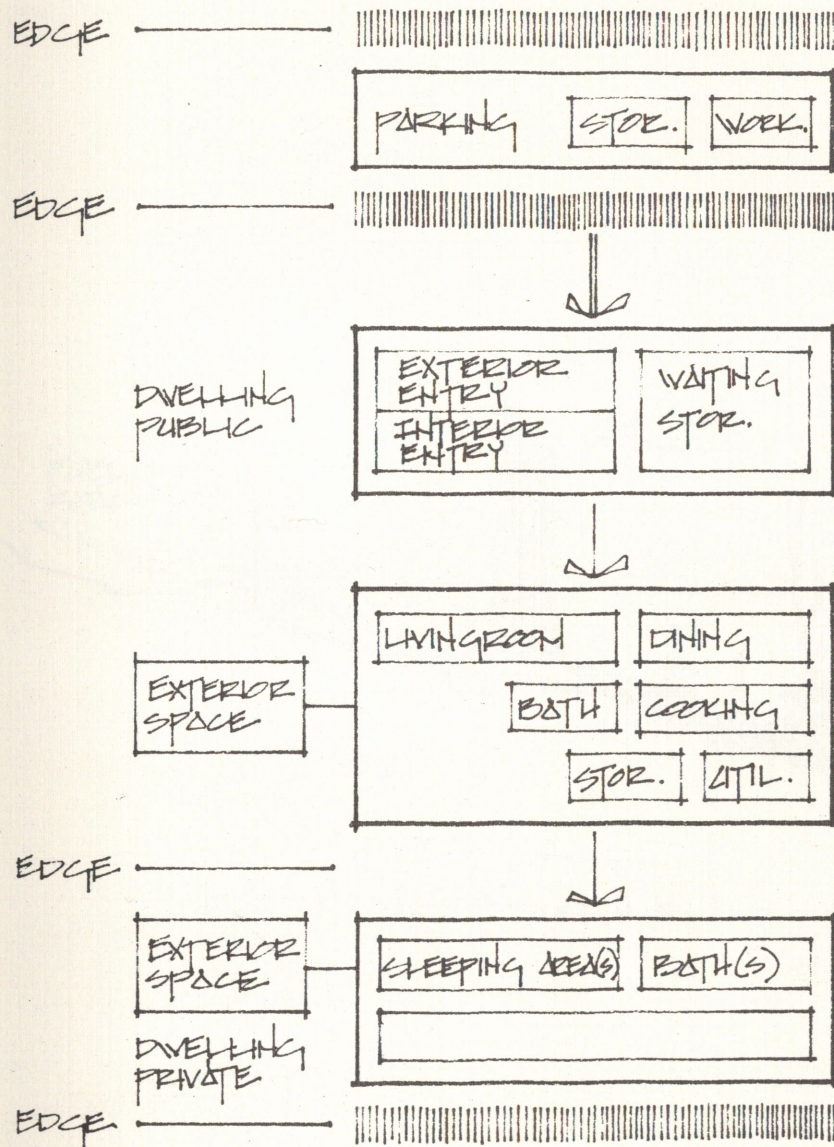


Hierarchy of Privacy

Regarding the situation of dwelling that is being investigated in this thesis, there is a very important hierarchy of exterior spaces with regard to privacy. This hierarchy is divided into two sections, one concerned with the entire development, the second in relation to each dwelling.

The first area is arranged into three stages:

- public space which includes city streets, parks, etc. The entry to the site forms the edge between two adjacent patterns.
- space which is public to the residents of the planned community. This space is common grounds accessible to every unit resident regardless of which cluster of units they live in.
- nodes which are allocated to each cluster. These areas are readily accessible to the residents in a single cluster and are seldom used by residents of the rest of the development. These nodes form a very important transition space between public and private realms.

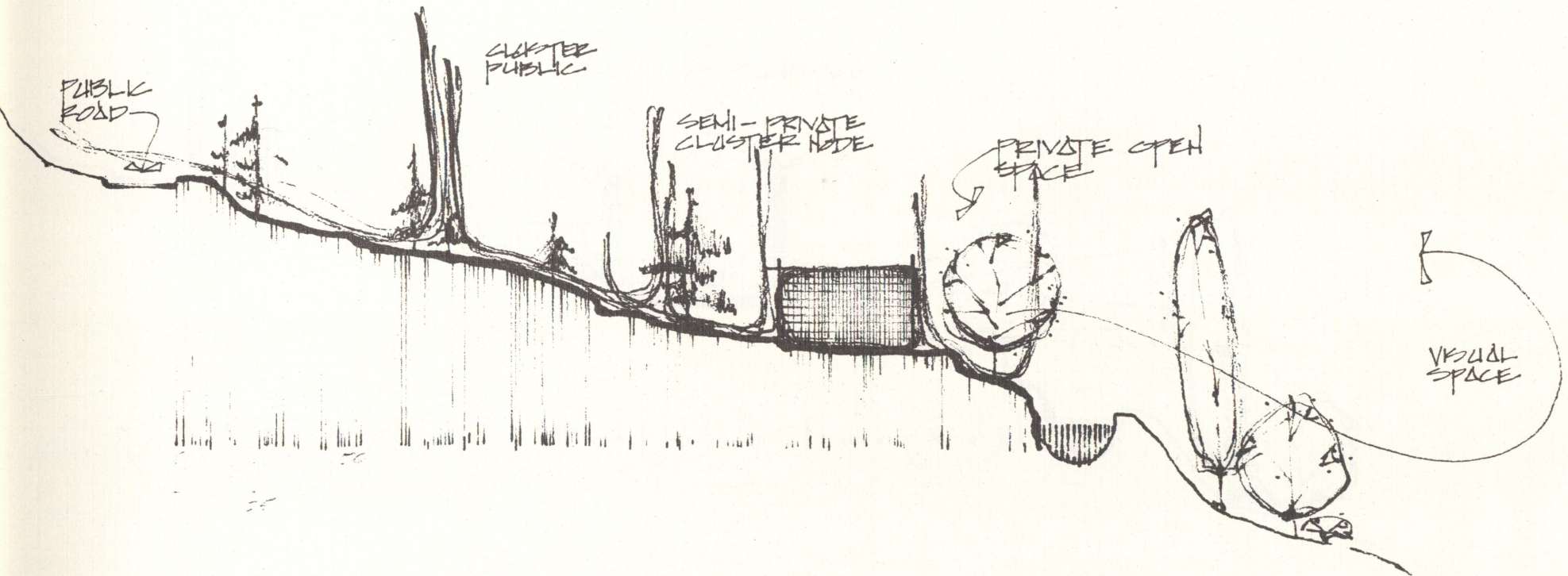


The second group affects the individual unit and its character:

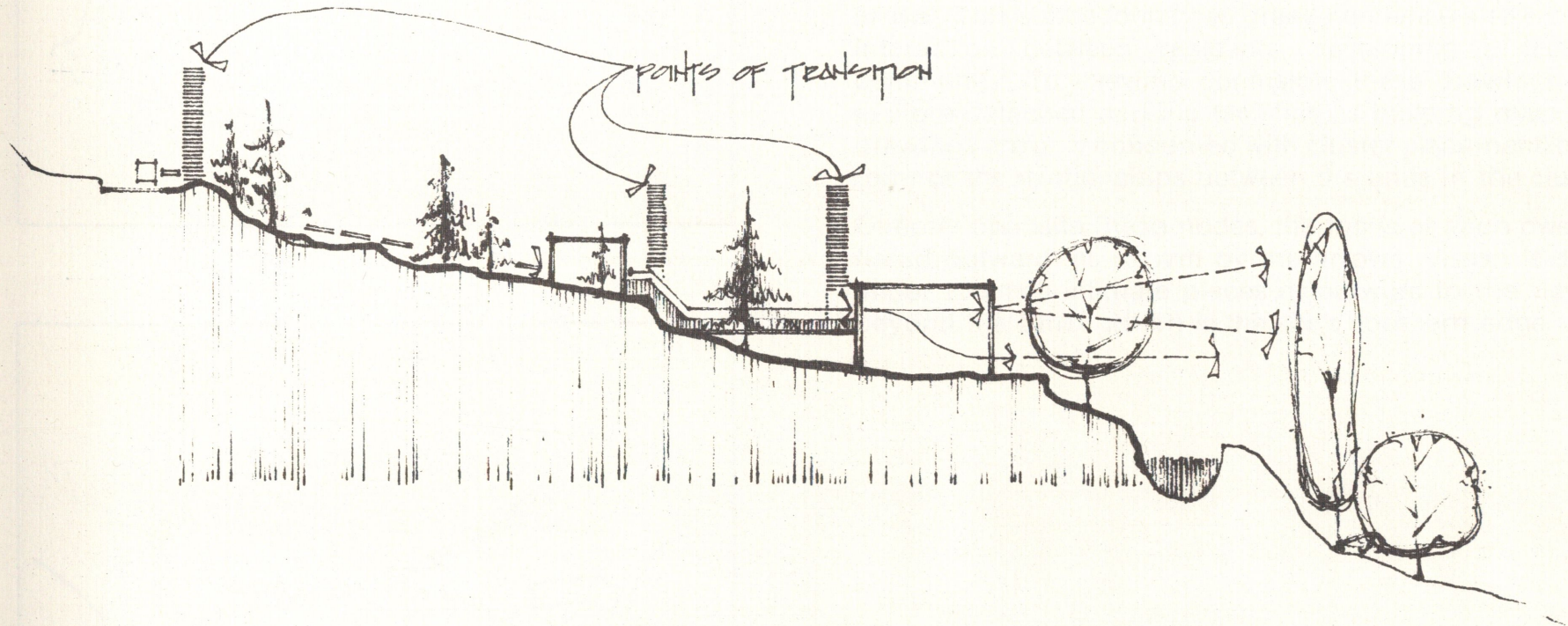
- the place of entry or entry court ("front yard"). This is the face which greets anyone approaching the dwelling. It serves as a buffer for the private realm of the interior as well as a transition zone between domains. The path one takes while moving through this threshold is vitally important because it is here that the first unit participant generated mood begins.
- private exterior space as "garden" or "backyard". This space is an extension of the interior of the dwelling and thus is private to each dwelling's occupants. This is the informal address of the building.
- the balcony. This is the exterior space with the highest degree of privacy. It is an extension of a single room.

Thus, public places shifting to private as progression along a path and through a sequence of time, events and clearly definable domains, lend a sense of order to the community.

This section is another way of illustrating the hierarchies of exterior space in direct application to this site. The different levels of privacy respond to the tiering of the site as one approaches from above.



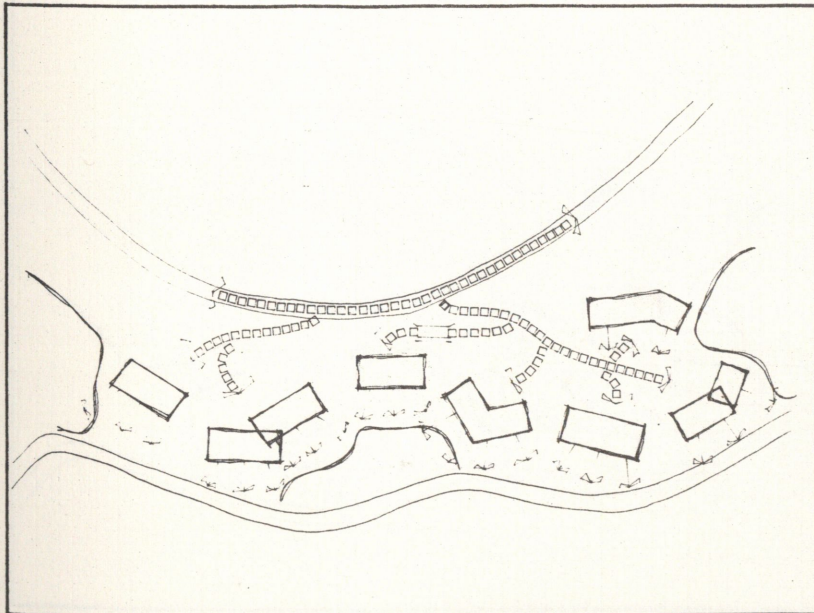
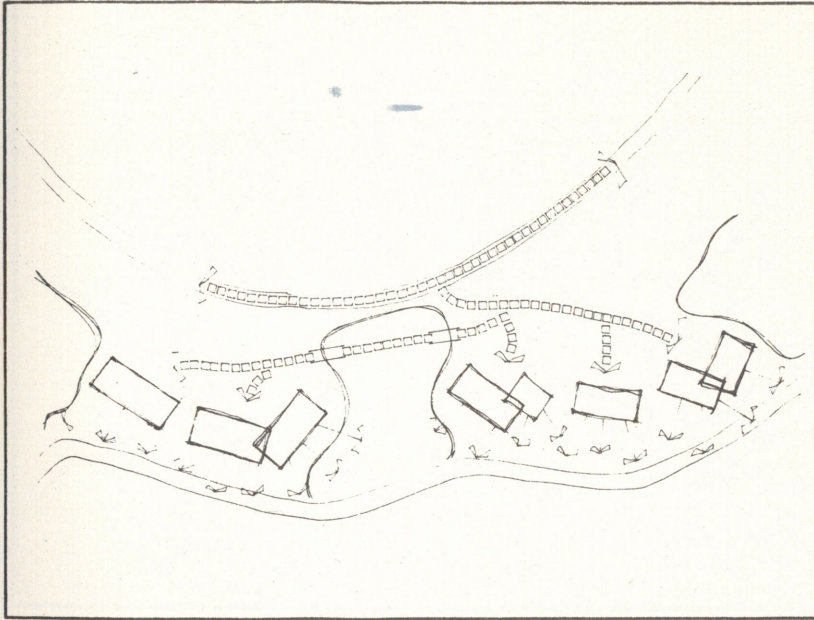
This sketch depicts the important points of transition between the different domains. What occurs at these points is very important in terms of changing states and as edges of the patterns or layers of privacy.

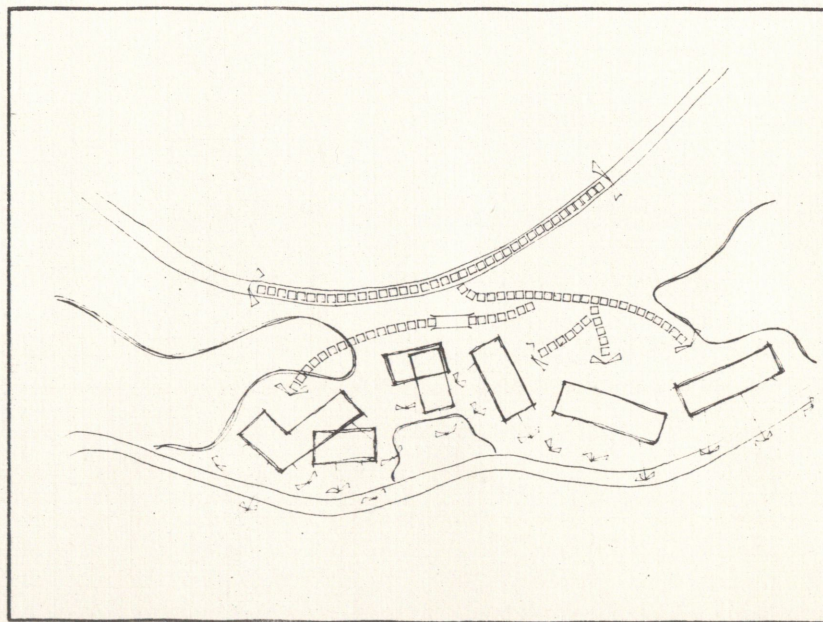
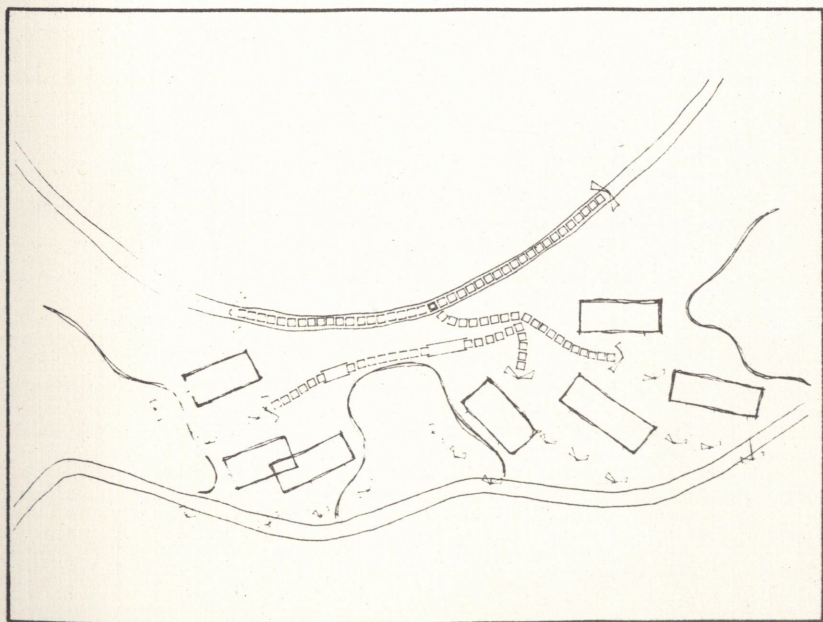
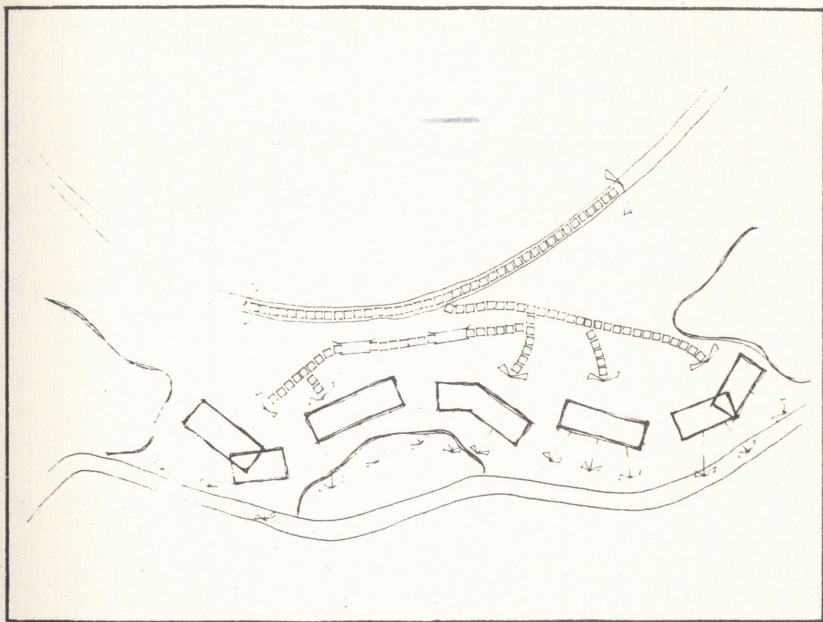


Cluster Arrangement Study

This set of drawings is intended to show possible layouts of clusters on the site. They were arrived at through analysis of natural land features, view and enclosure. The number of clusters was not predetermined. Each cluster area does not contain a solid row of units, but small groupings to allow visual and physical access through, therefore reducing the effect of a back and front of an impermeable line. Each cluster forms a focus on areas which are used for activities which are somewhat communal such as parking, mail pick-up and arrival. This subtle focus can greatly enhance and encourage interaction between residents, developing a feeling of community. To alleviate confusion, these drawings do not explore detached parking facilities as building mass. These drawings are only concerned with cluster placement, not with form or the relationships between the units in the clusters.

Directly opposite these nodes, the focus of each dwelling is flared outward, as shown by the arrows. Vision is directed either to small intimate places or outward to the view at or beyond the canal, which is the site's southern edge.

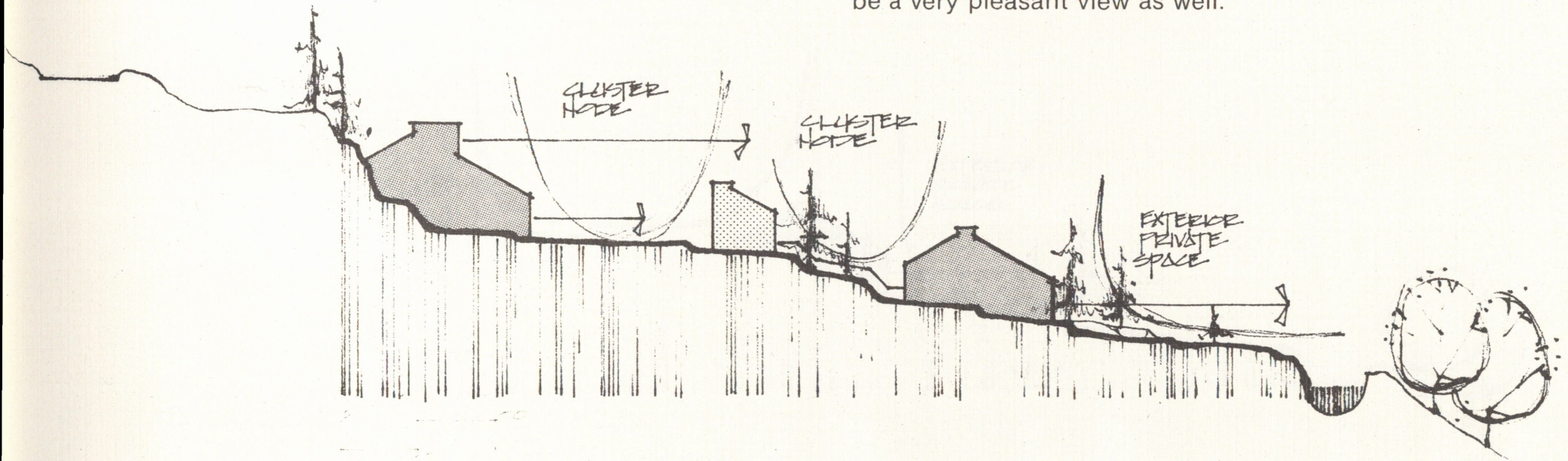




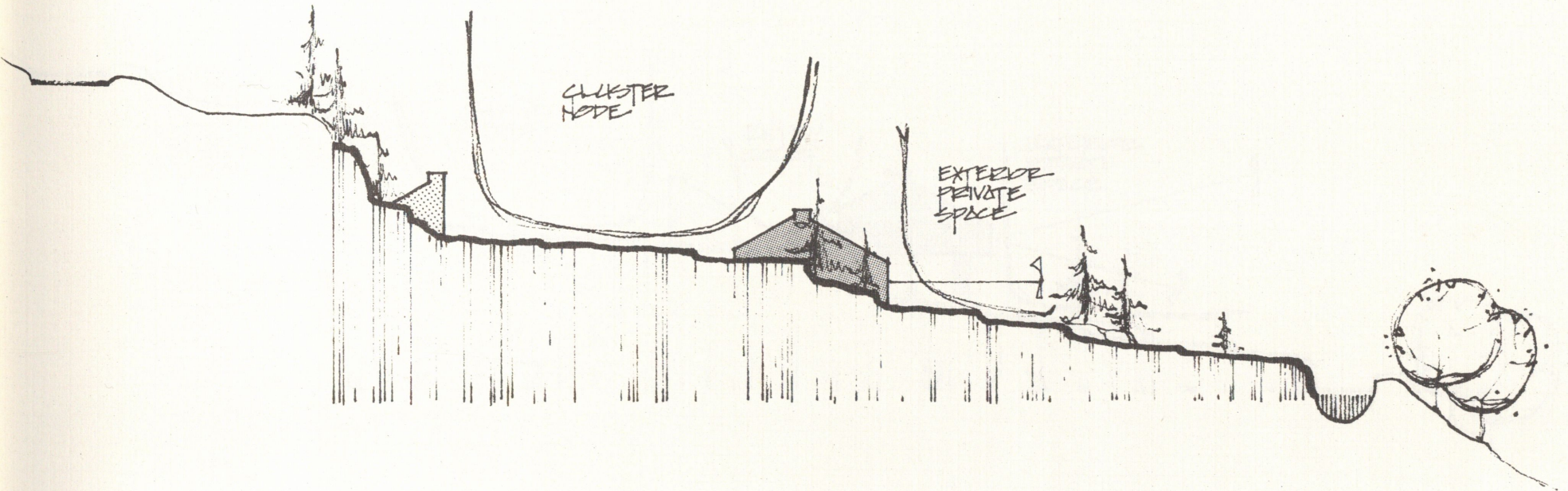
Building Ground Relationships

The following series of sketches depicts a study of the ways in which a building on this site may meet the ground. The different strategies show not only the building's relationship to the ground, but they also have implications regarding densities and relationships to each other. The images shown are purely representational, they are not indicators of a design direction or decisions regarding form. They are only a comfortable representation of an attitude about melding with the site rather than overpowering it.

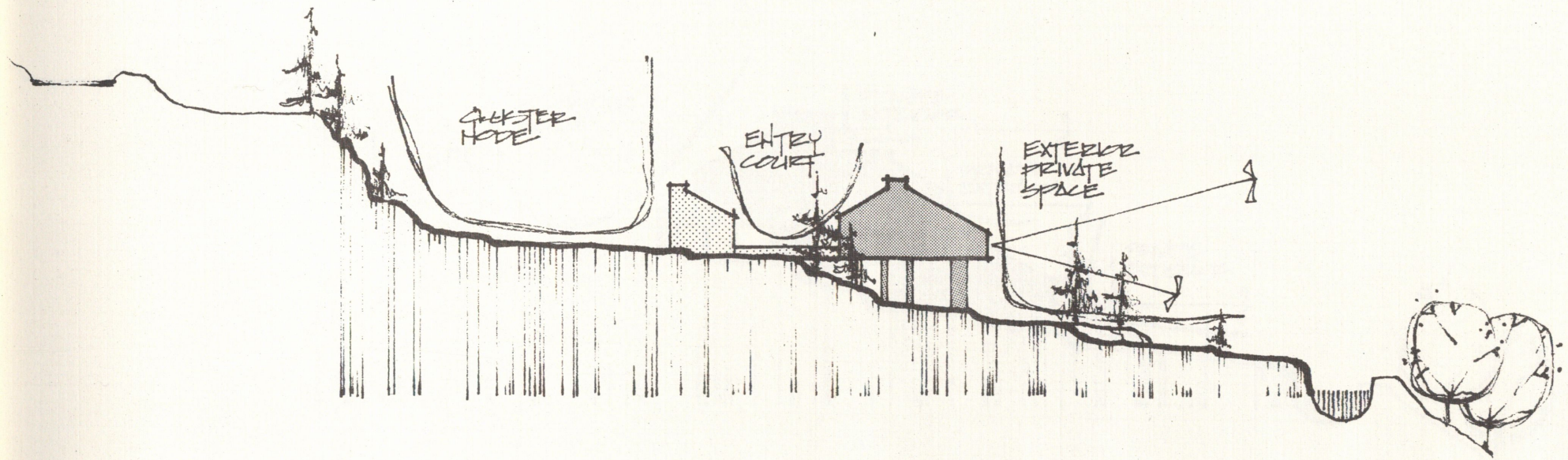
- In this study, the built form is nestled into the land form. There is a sense of communion with the earth created here. At this particular location on the site, this scheme has the potential for the development of a dual cluster system of nodes, separated partly by parking structures, and partly by natural features. The uphill units do however have the disadvantage of having their major orientation towards the cluster node and parking. This may be alleviated by raising any spaces with outward view above the level of the lower structures, allowing vision above and beyond them. The composition of the roof forms below have the potential to be a very pleasant view as well.



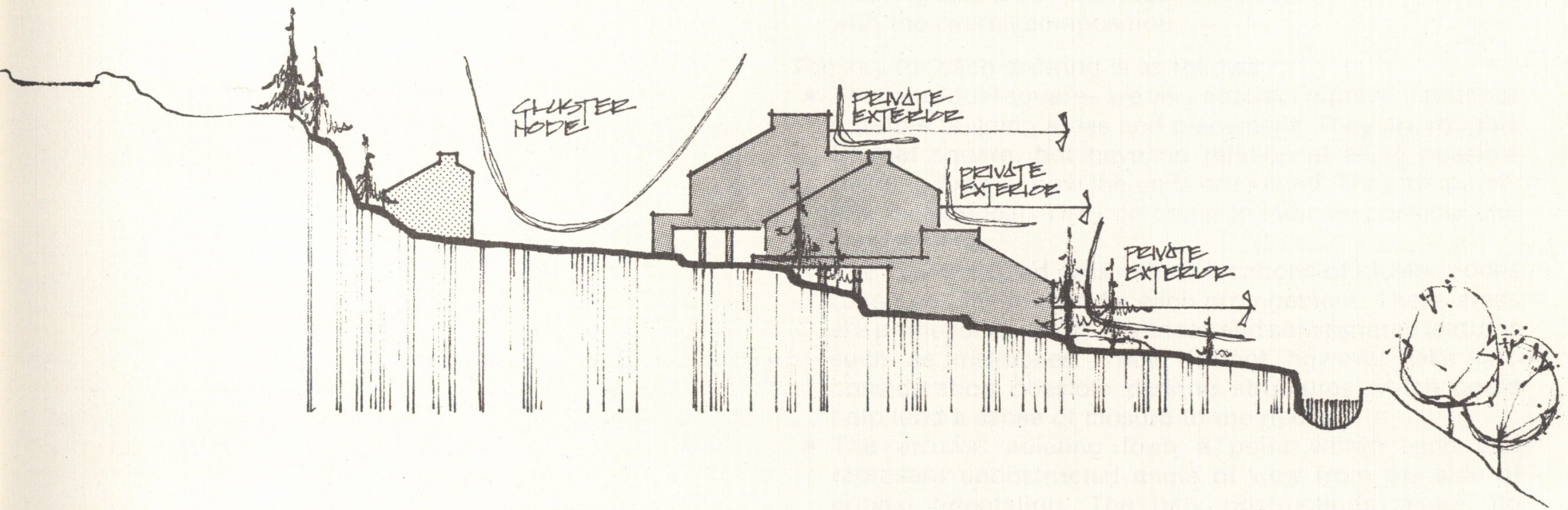
- The units in this strategy appear to be rising from the earth or descending and being camouflaged by it. Visually, this is a very quiet and unobtrusive solution. Entries and the distance to be traveled from the parking structures could be sources of difficulties. There is a thermal advantage to this tie to the ground. They also have a definite front and back as determined by view.



- In this investigation, the structure is detached and floating above the ground, thus allowing the site to continue on its natural course. Statement of entry is greatly enhanced by the bridging to the dwelling. It is also the most dramatic in terms of position of form, mood and views. The opportunities for exploration of movement in space are quite interesting and can be studied by the connection of building interior with outdoor space. There are however, climatic trade-offs created by allowing air movement under the structure.



- This investigation has the potential to be a much higher density solution. Here, the units are stacked, using each other for support and as a part of their own composition. There is great variety created by entries at different levels as well as by private exterior space. The roofs are being used as space for people, rather than just forms. This organization offers a number of options of meeting the ground, which can be combined differently for each cluster. There is however a shift in the character of the development associated with this higher density which could change the initial conceptions of this development.



Cluster Layout Development

The purpose of this set of drawings is to begin to understand the implications of site zoning and cluster arrangements. Each arrangement is derived from:

- a direct relationship to the natural features and variations of the site.
- a concern for the needs of cluster nodes, public to each cluster, of individual unit private space, and of community open space.
- a need for variety.
- creating a sense of individual place without losing contact with the overall composition.

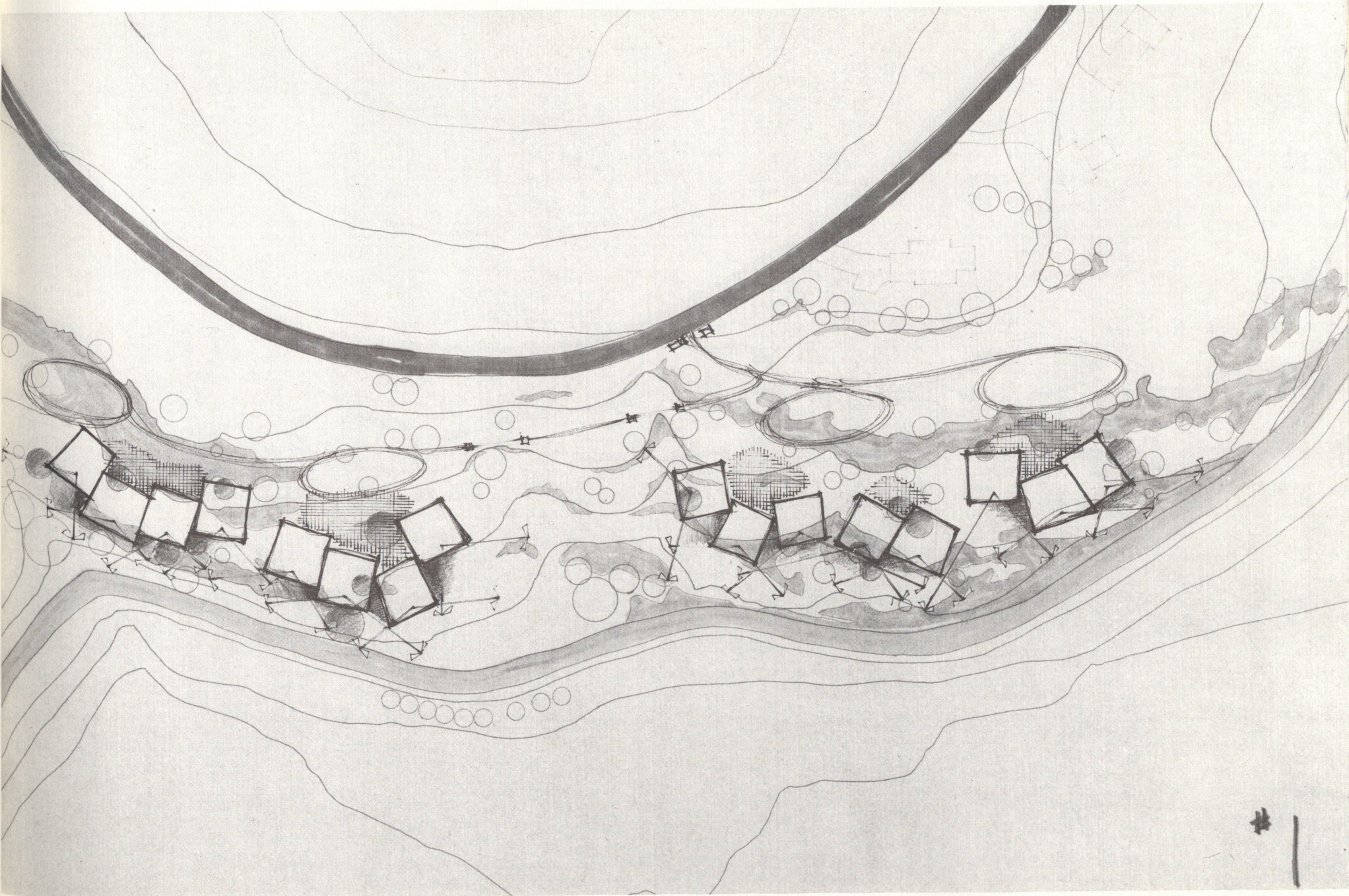
The key for each drawing is as follows:

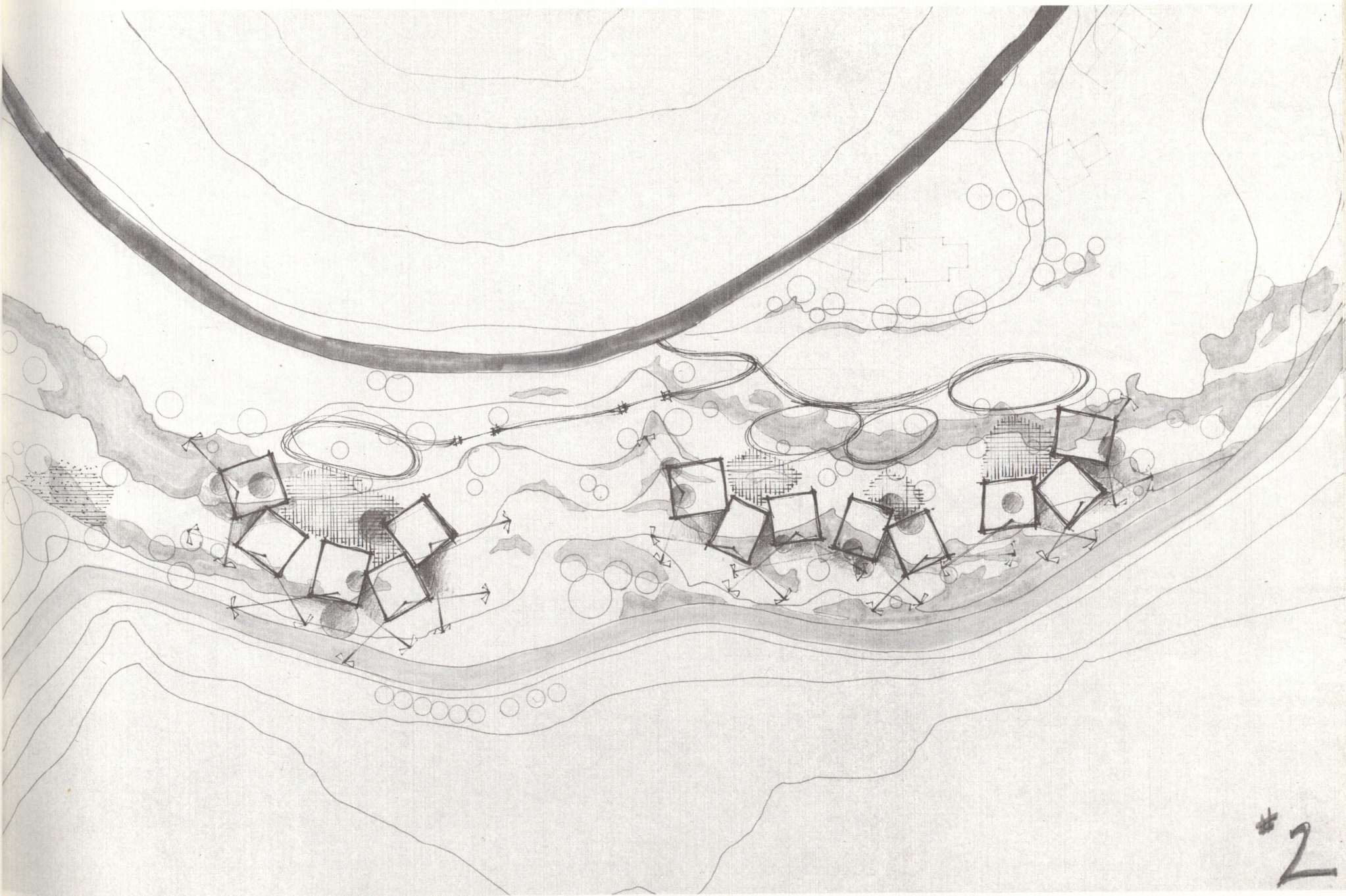
- The individual squares are very abstract representations of possible building areas and placement. They are roughly 50 feet square, but have no relation at all to possible building form or how the units are joined. They are purely representational. They do begin to indicate possible unit orientations.
- The crosshatched areas show locations of cluster nodes (open space) created by each arrangement. These areas are prime for dwelling entrances and some shared features such as mailboxes. They do not however take into consideration possible parking structures which could help lend a sense of closure to the nodes.
- The arrows radiating from a point within each unit represent unobstructed angle of view from the side of critical orientation. The only obstructions taken into account are other unit representations. Natural features are not for clarity of the drawing. These features would in most cases change the angle shown. It is not the intent of the cluster arrangements to have each unit's view consist of only landscape or only another unit, but a conscious mix of the two. View is not restricted to only this orientation.
- Shaded areas are indications of possible private exterior space, created both by the angle of view study and different masses.

- The trees which are shaded are only those which are disturbed by the representative volumes. They are to be taken into account during the design process and preserved wherever possible.
- Very loose lines and bubbles represent vehicular paths and parking nodes. The bubbles do not dictate exact locations, they only indicate that parking will be specific to each cluster and in areas which relate to each cluster.

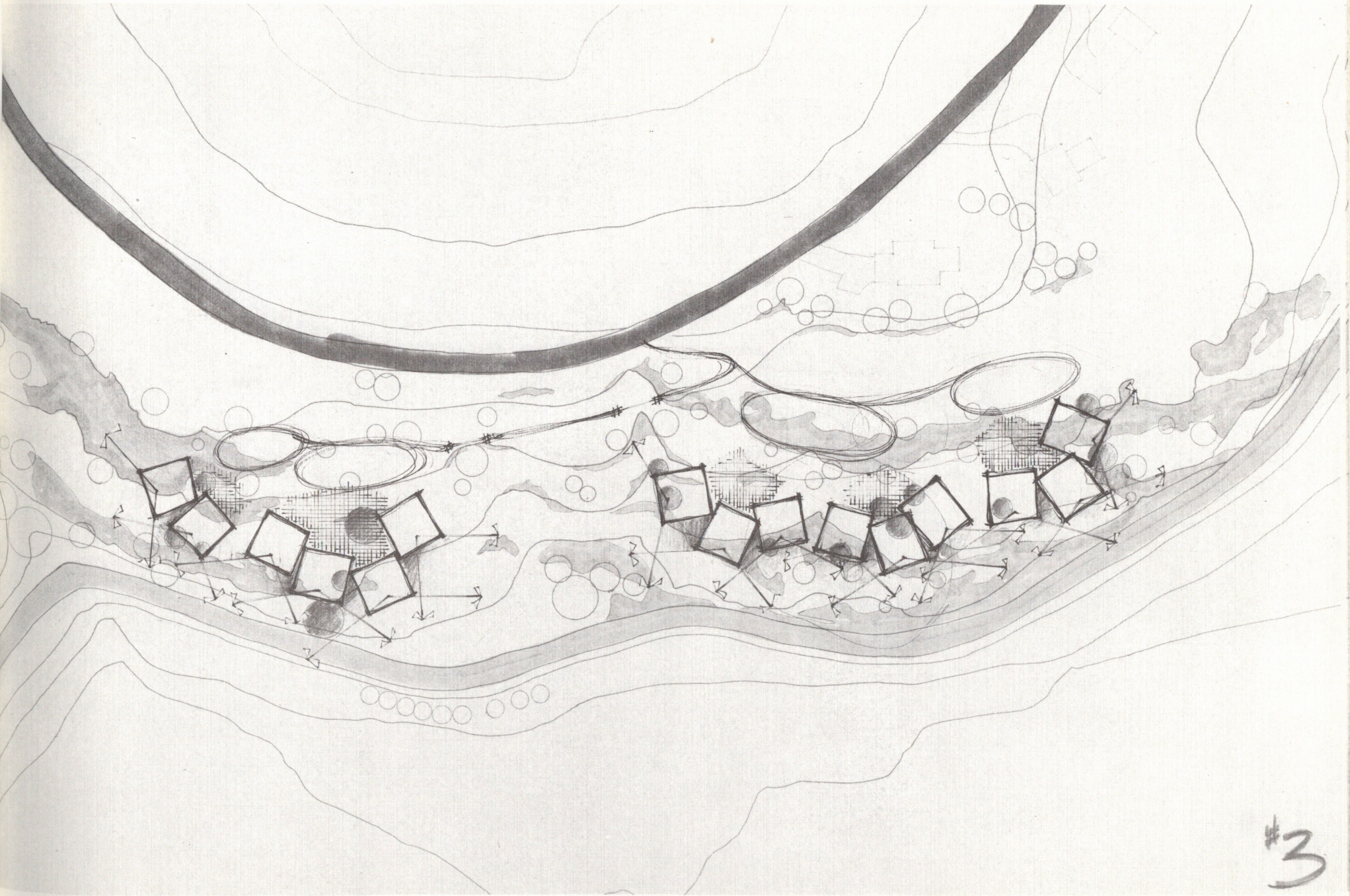
Several concepts developed during this study which modified each successive scheme. These important ideas and goals are:

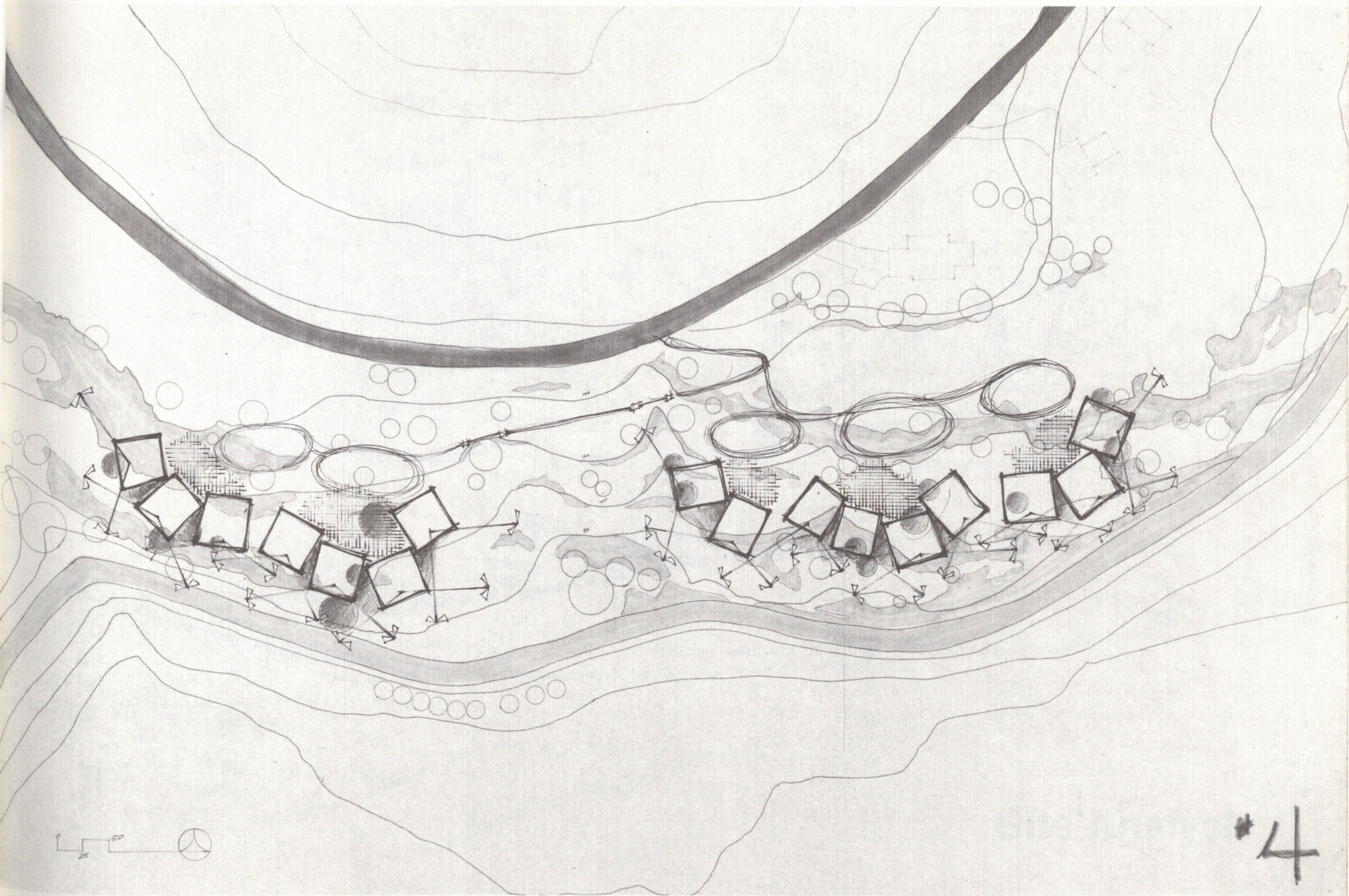
- To keep the vehicular path uphill so as not to cross into the pedestrian realm. The path thus forms an edge to the two domains.
- The cluster bows upwards and away from the canal in the center of the site to acknowledge the natural thrust of the canal and to open centralized community space.
- By using placement and orientation of units, attempting to provide a sense of ending and edge to the development.
- There is a need for variety of unit groupings.
- Each unit is taking advantage of adjacent natural land features such as being oriented towards existing "pockets" of land which could be used as private exterior space.





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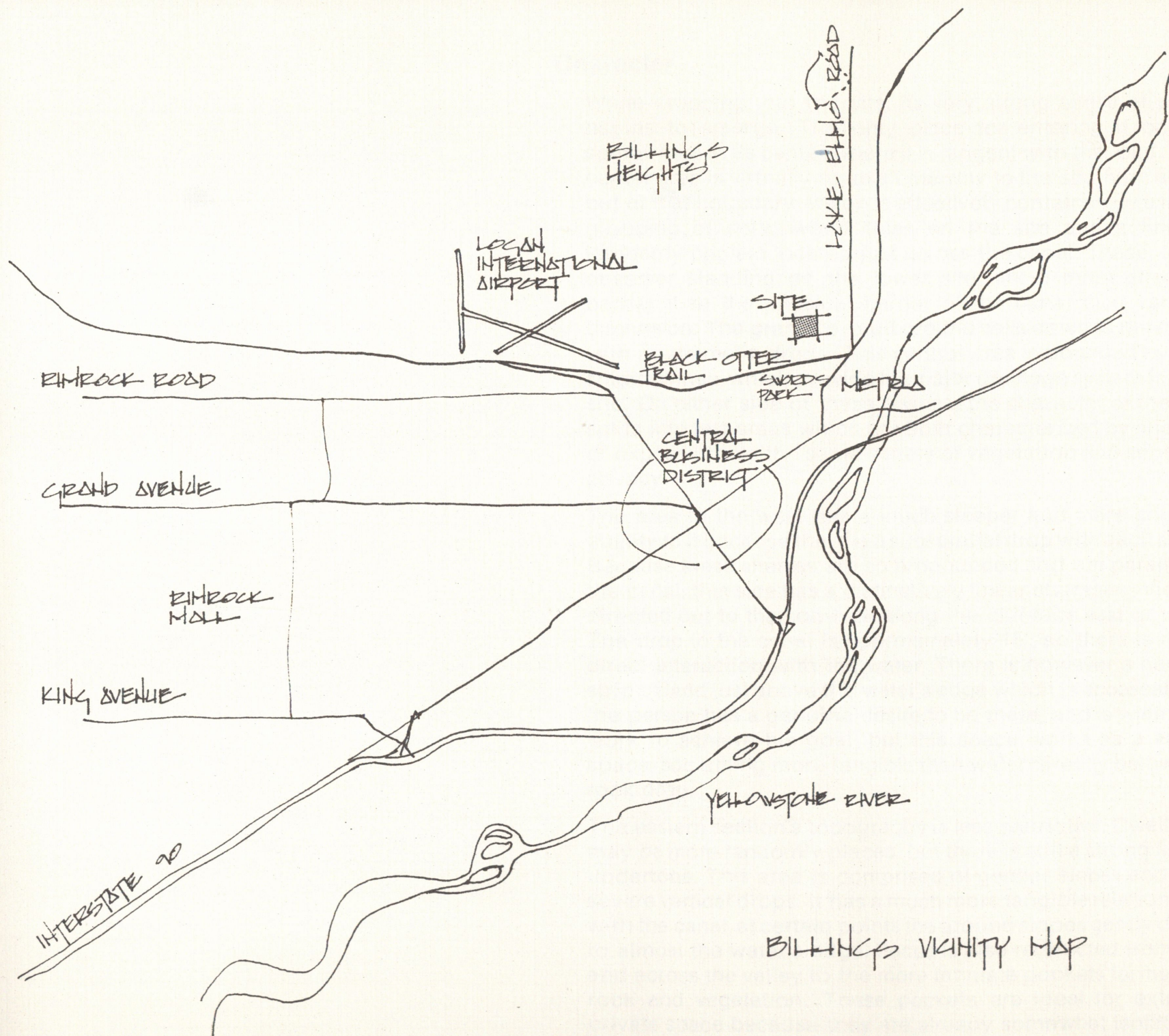


Site Analysis

Site Context

The area surrounding the site is a complex mixture of suburbia, parks and natural land. The area known as the Heights has become a heavily populated extension of Billings. The price of land there, due to its popularity, natural features, etc., has become very high. The majority of the housing being built there is quite large and expensive. Unfortunately, this does not necessarily mean sensitively or well designed. There have been very few houses built with any conscious and sensitive response to their natural settings, but this appears to be slowly changing. There is a growing trend for the houses to be more responsive to their site, especially in their treatment of the traditional yard.

Thus, as no sensitively built contextural character or vernacular exists, the designer must gain insight from some other source. The present, prevalent building forms in Billings say nothing about its natural context or even the general region of the country. In this situation, rather than drawing from an established pattern, one turns to the rich natural context, looking at forms, colors, textures and orientation of the land itself.



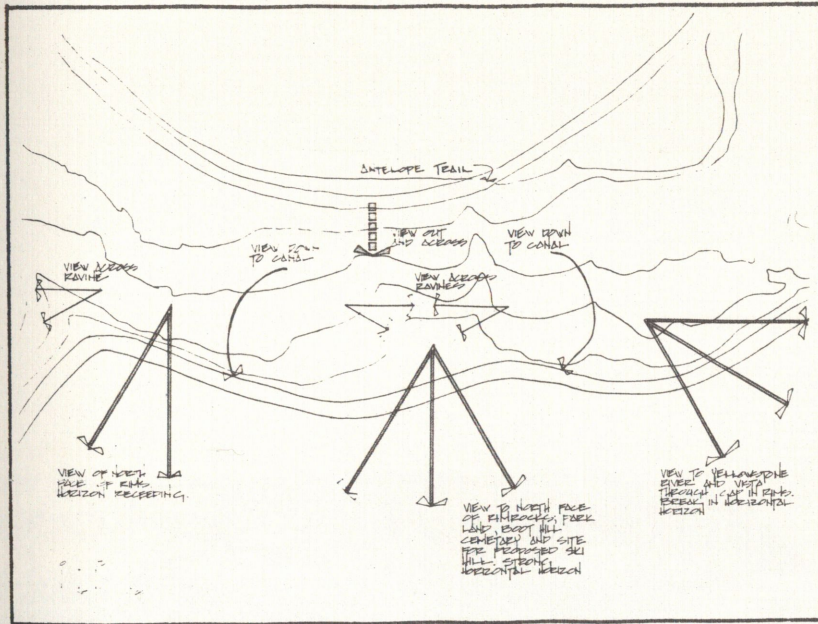
BILLINGS VICINITY MAP

Character

While dropping into the site, its very strong sense of place begins to emerge. The only place for entering it occurs somewhere in its center where it is tangent with the road. This center area is virtually open all the way to the southern edge, but at that boundary, vision is effectively contained by a large grouping of cottonwood trees on the site and a line of lombardy poplars located just across the canal. These, to an observer standing on the lower site, are a more effective barrier than the physical barrier of the canal their vertical dimension. The grass covered ground rolls down to the canal with no dramatic drops. This central area is bounded by two small ravines, which provide the major drainage system for the site. On either side of these ravines, the character of the site splits into two areas which are both characterized by shelves of exposed rock, the same variety of vegetation and sense of privacy.

The area to the west has a much steeper and more angular quality to it because there is a substantial drop with each shelf. Because these shelves are so pronounced and run parallel to the canal, this side has a distinctively linear character. View is directed out to the south or along the cliff face east or west. The drop to the canal is approximately 15', so there is not a direct interaction with the water. There is however a narrow strip of land just above the water's edge which is accessible if the person has a genuine desire to be there, and is willing to work to achieve his goal, but this space works as a visual space, something more tangible than water directly below the rock drop.

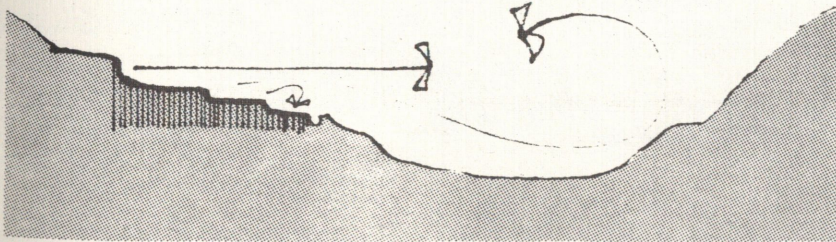
The eastern section's topography is less restrictive. Dwellings may be more randomly placed, but there is still a strong linear undertone. This area is comprised of gentler slopes and less severe vertical drops. It has a much more tangible relationship with the canal, at certain points the ground slopes gently down to almost the water's edge. Focus is also redirected from out and across the valley to the more intimate pockets formed by rock and vegetation. These pockets are ideal for exterior private space because they are already somewhat isolated. 28

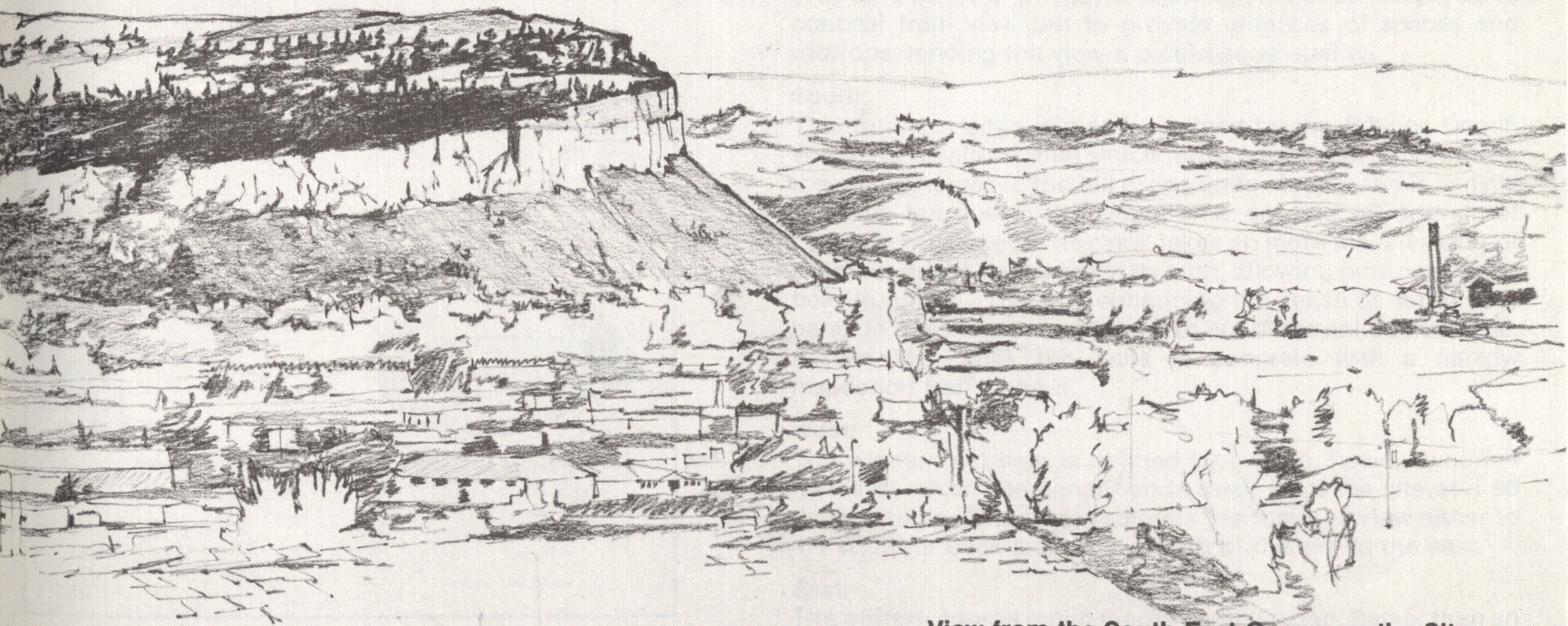


View, Vista and Focus

While standing on Antelope Trail, view is basically directed to the south due to the orientation of the hill. This view does not become an endless vista to everything and therefore focusing on nothing, but is focused at and contained by the north slope of the Rimrocks. This view is very circular and inclusive because of the valley in between. This brings that edge or definer of view much closer to the viewer. The entire area is your visual space, but your physical position is somewhat detached and you are an observer rather than a participator. The site itself drops away in front of you, almost unnoticed.

As one descends into the site from above, the focus changes to a much more intimate one. The site begins to focus into itself, culminating as you move towards the canal in sandstone plateaux and in small pockets of space defined by natural rock and vegetation formations. The variety of textures, forms, and paths now draw more attention than an outward view.





View from the South East Corner on the Site.

Edges

The site is very clearly defined and contained on three sides, those being the north, south and west. The character of those sides is:

North:

The hillside is split by Antelope Trail which forms the northern boundary of, and provides access to the site. The road is presently gravel. This edge becomes a backdrop as the hill continues to rise on the north side of the road. From this road, the proposed building locations on the site seem nestled into the hillside below, which drops away quickly enough to provide a sense of privacy and place, yet not so steeply as to conceal from view but to provide glimpses of spaces and rooftops, lending the view a picturesque quality.

South:

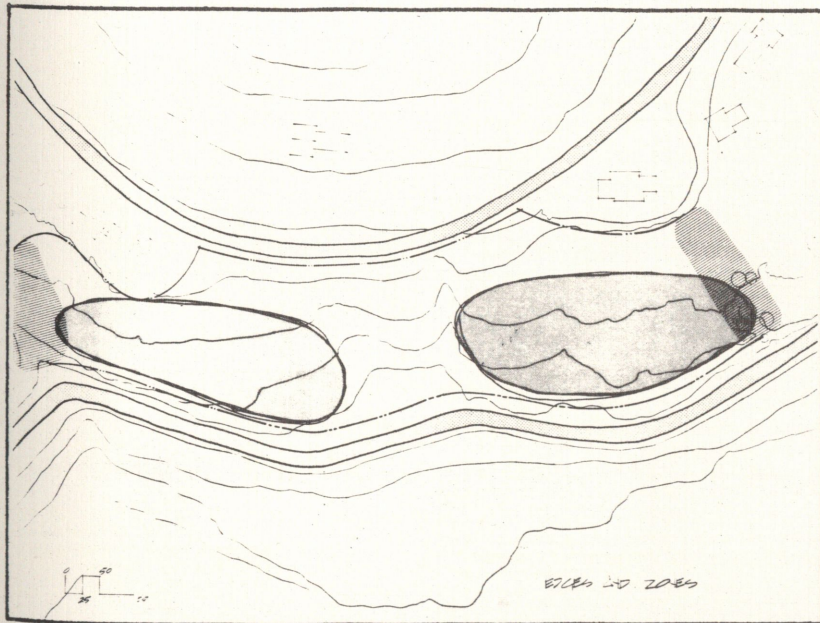
The southern edge is clearly defined by the Billings Bench Water Association canal which forms a brief plateau breaking the slope. Across it, the hill drops quite steeply and is heavily wooded, but due to the slope, view out and beyond is not completely blocked. The canal takes on more the character of a stream due to the bends in its path, allowing portions of it to float in and out of sight, enhancing the sense of depth. The bank on the site side has been cut out of the solid sandstone. Across the canal, the bank is concrete with a narrow inspection trail along it.

West:

The western extreme is defined by a deep, heavily wooded ravine at which the canal bends away from the site at a 90 degree angle. This edge redirects the focus of view either to the south or back along the length of the site to the east.

East:

The eastern edge is much more subtly defined. Rather than an explicit edge, there is a sense of implied containment. This occurs due to rounding the crest of a slight incline, a scattered vegetation line, and a change in character of view and a feeling



of exposure due to increased awareness of noise from the area below. The site has a very removed, intimate and introspective mood. One of a quiet observer. When passing this implied edge, one suddenly feels exposed and involved with the activity of the buildings and highway below. Thus, this line of change from observer to participator forms the fourth edge. It is also the point at which a person walking along the canal must break from it and skirt an obstacle of rock.

The site boundaries, as they are explained here, lend a very comfortable and readily interpreted sense of closure, which may be developed in order to reinforce the cohesiveness of the planned neighborhood. This unity is important in creating a sense of place.

Climate Analysis

Billings' weather is varied, but not usually extreme. There are however, several conditions which have implications in the design of dwellings. One of these conditions is snow. Less than 20% of yearly precipitation falls between November and February, heaviest snow falls occur in the spring and fall, coming in from the north to northeast. These snow falls may be individually heavy but usually do not accumulate due to warm west to southwest chinook winds or drainage winds moving down the Yellowstone Valley. In dealing with the snow, several things must be taken into account:

- removal of snow from pedestrian and vehicular paths and the locations where this snow is then deposited.
- the snow load on structures.
- as dictated by roof structure and surface materials, whether the snow is retained on rooftops and used as a compositional element, or if it is encouraged to slide off, and when it does, where the snow lands.

Moisture on the site either ponds(natural or man-made), runs off down the hill or is absorbed. Billings being a semiarid climate, receives around 14 inches total precipitation per year, one third of it falling in May and June. Thunderstorms occur about 30 days a year beginning in May and ending in September. Any runoff and the accompanying mud must be dealt with in the design of these structures.

After the spring's rapid weather fluctuations, the summer consists of low humidity, warm sunny days and cool nights. There are frequent afternoon clouds, but very little rain. With proper protection from the sun during the day and adequate ventilation, this temperature swing can be used as an advantage.

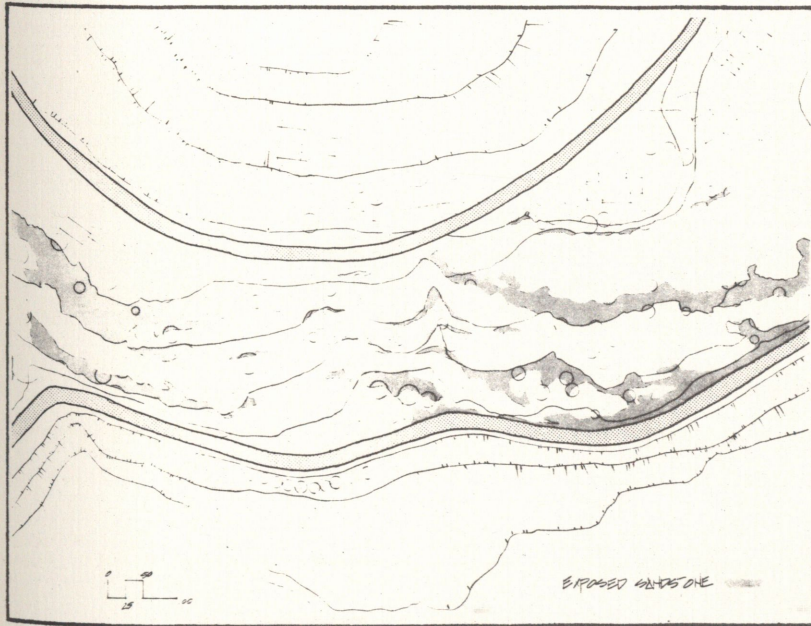
The site specifically is quite well protected from the cold north winds and drifting snow. Being on a slope of southern exposure, it is also ideal for controlled solar gain.¹¹

Utilities

This area of the Heights is on the city electricity, sewer and water lines, which simplifies these two issues of functioning success. City lines for all utilities lie buried beneath Antelope Trail, so fresh water coming in will capitalize on gravity, grey water and sewage will be pumped up the hill, which is in no way a design restraint. There is a fire hydrant located approximately at the center of the site across the road.

Soil Conditions

The basic composition of the site is a thin layer of topsoil over a solid sandstone base. The structure's foundations could be as simple as pads connected to the rock if it is solid, or pilings down to the bedrock. Problems would arise if part of the footings were located on rock and part were not. The site poses no major obstacles to construction.



Programming

Entry

The space of transition from the exterior to the interior domain, intimately a part of both.

Theory:

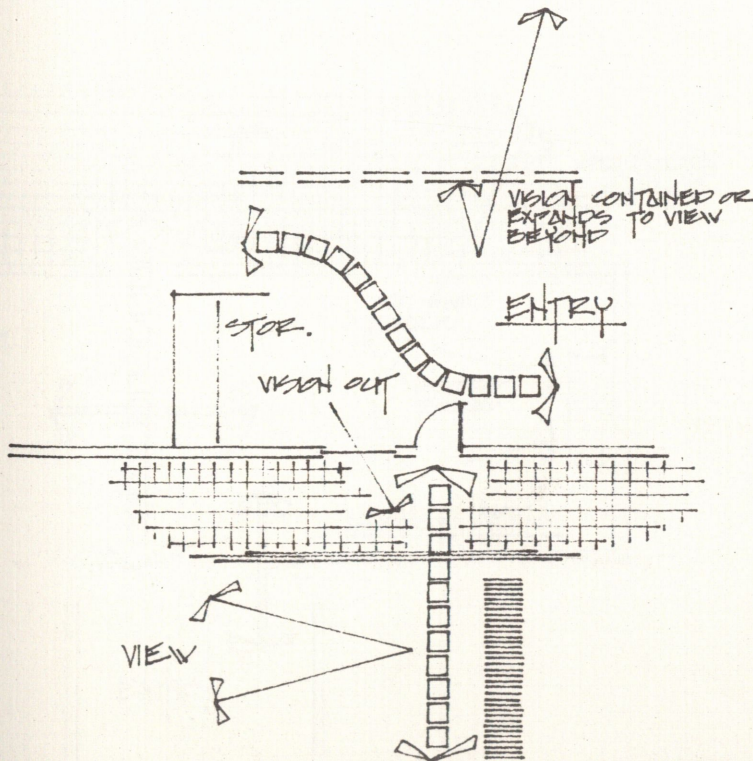
The idea of entry suggests the concept of threshold, the joint between two domains, the edge between two patterns. It is the interface between the public and private realms, a signal of change and possession. The door itself is a symbol of privacy, security and ownership. It is an eddy point along a path.

Character:

The entry is a place of greeting and orientation, a decision making area concerned with ease of movement. It should be inviting while still asserting the need for permission to enter. A feeling of use will heighten that invitation. The entry is the place of introduction to the interior character of the architecture as well as to the residents. It may be a contracting and enclosed space, confining view, or, one of expansion, the door a temporary interrupter of a view which is reintroduced and focused by the entry space.

Goals:

- the entry statement begins by some change, or indicator along the path.
- to create a comfortable place to wait both on the interior (using artifacts such as seating, artwork, etc.) and on the exterior by providing shelter, etc.
- provision of space to deal with change of climate of exterior to interior involving clothing, mud etc.
- to provide opportunity for occupants on interior to see the exterior waiting area.
- public and private interior paths should be easily discernable.
- there is need for adequate lighting, both at the door and along the path to it.



Living Room

A common space used by all residents and their guests.

Theory:

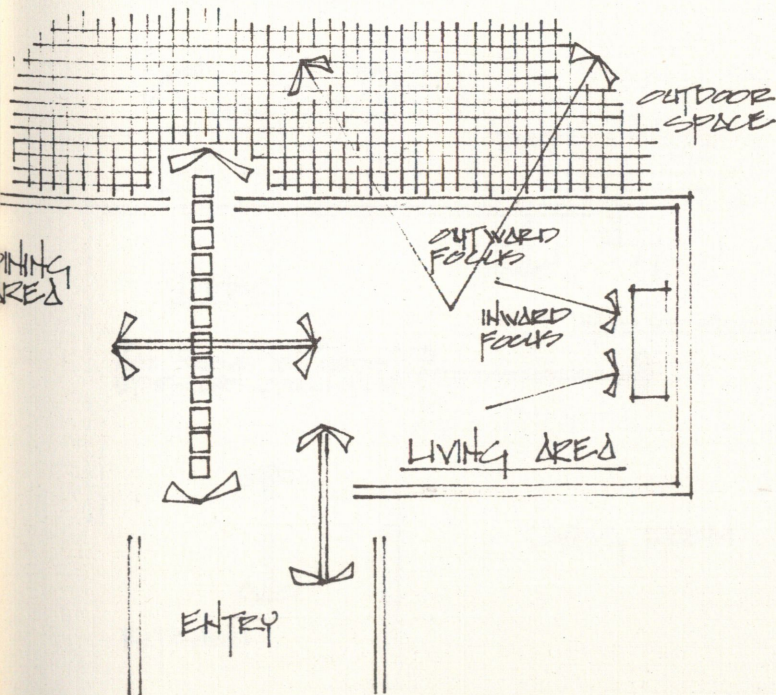
The living area is traditionally the gathering place in the dwelling, and thus generates a sense of center. This idea of center is especially expressed in the fireplace, which is a point of focus for the room. Its upward motion is dynamic and a symbol of uplifting movement and striving for higher goals.

Character:

This room must be the creator of and container for many varied moods. It must be able to expand visually and physically beyond its appointed edges, and also to contract to an intimate scale. It must accommodate both dynamic and passive activities. Lighting is a major mood and atmosphere dictator and therefore is a very important in the character of the place. As the area of lighting condenses, perception is condensed and focused. The space must provide a focus, an object or position. To one degree or another, there is an air of formality in the space due to the involvement of the guests and our culture's traditions. The identity of the place is personalized by the residents' artifacts which are indicators of both taste and status.

Goals:

- to create a sense of center of the home.
- to create a sense of openness, yet with privacy.
- a visual and physical connection with the exterior environment.
- a scale of space which accommodates large groups as well as individuals, a place for both the observer and the participator.
- to provide a space which can accommodate a variety of furniture and seating arrangements.
- to establish circulation paths which do not interrupt a domain of activity within the space.
- to provide varied and ample daylighting, and ambient and spot lighting which are individually controlled.
- to provide space for display of the owner's artifacts (wall space, shelves, etc.)



Dining Area

Theory:

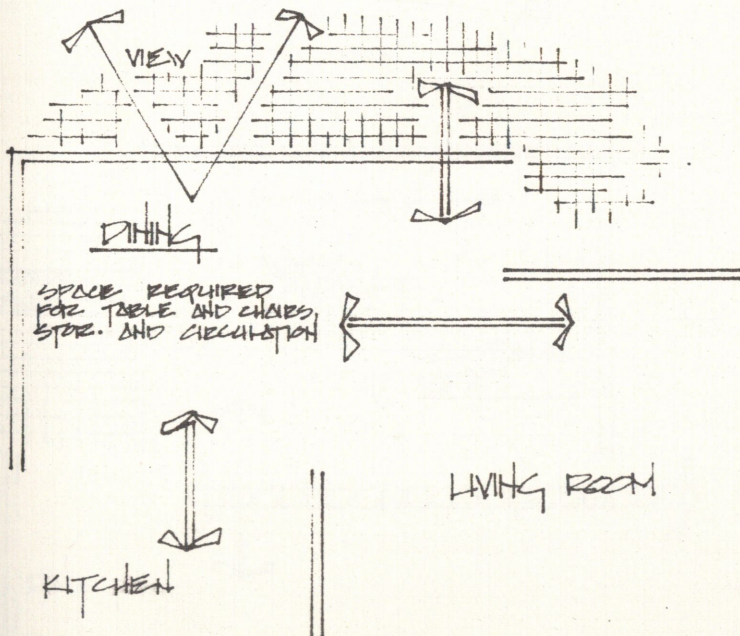
The ritual of eating is a prime concern because it is the reason this space exists and has meaning. This event can be casual or formal.

Character:

Due to the nature of eating, there is created a very concentrated, inward focus, yet there is also a need for the feelings of expansion not constriction to provide comfort. The space must be flexible enough to accommodate a wide range of moods from quiet inner reflection and repose, to lively, boisterous parties. Major factors in the creation of mood are; lighting, acoustics, freedom or confinement of view, the ability to overflow the edges of space, circulation patterns within and as joints between domains, and the possessions of the residents.

Goals:

- to be flexible enough to serve different sized groups in different settings.
- to provide ample circulation around table and chairs.
- to allow people to overflow into adjoining interior and exterior spaces.
- adjacency to cooking area.



Cooking Space

Theory:

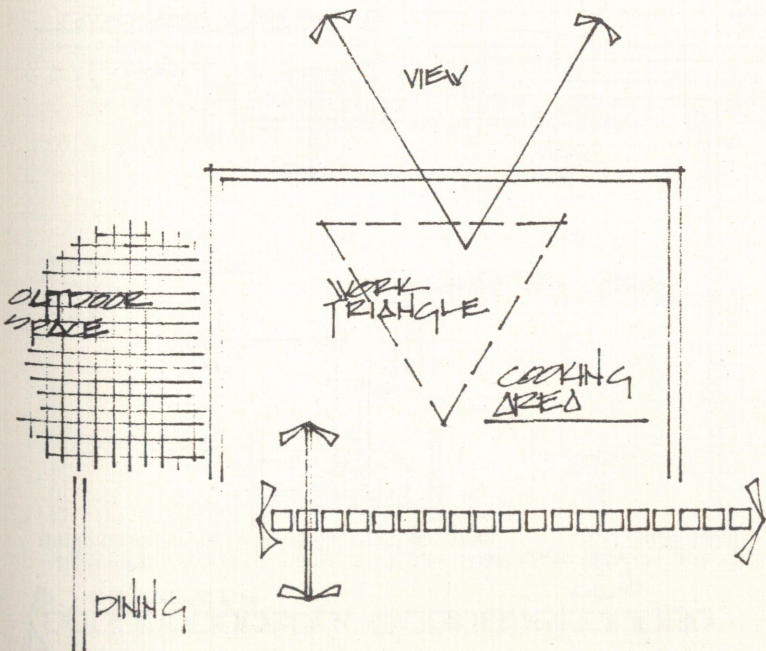
The kitchen is the symbol of warmth of the home and family circle. Because of the activity and sense of warmth created here, it can at times of food preparation, snacking and partying, become the place of focus in the dwelling.

Character:

In this space, because it is so functionally oriented, a lively atmosphere is essential. Providing a sense of relief by connection with the outdoors is important in the creation of this atmosphere. It should be a place which removes some of the boredom from everyday tasks. It must also be viewed as not only a place for food preparation, but as a stage for performing the art of cooking.

Goals:

- to facilitate ease and convenience of task and movement.
- to use the work triangle as an organizing design tool.
- to create a space large enough for it to function well, yet not so large as to make working in it consist of mostly movement.
- to provide access for servicing.
- to create direct and unobstructed circulation to the dining space.
- to provide view for relief.
- ample natural and artificial lighting.
- because cooking is a major source of heat, protection from the sun is necessary.
- to provide natural and mechanical ventilation.
- to contain the noise produced.
- allow a space for eating.
- ample storage and counter space must be provided.



Bedroom

A space which is dedicated to the privacy of the individual.

Theory:

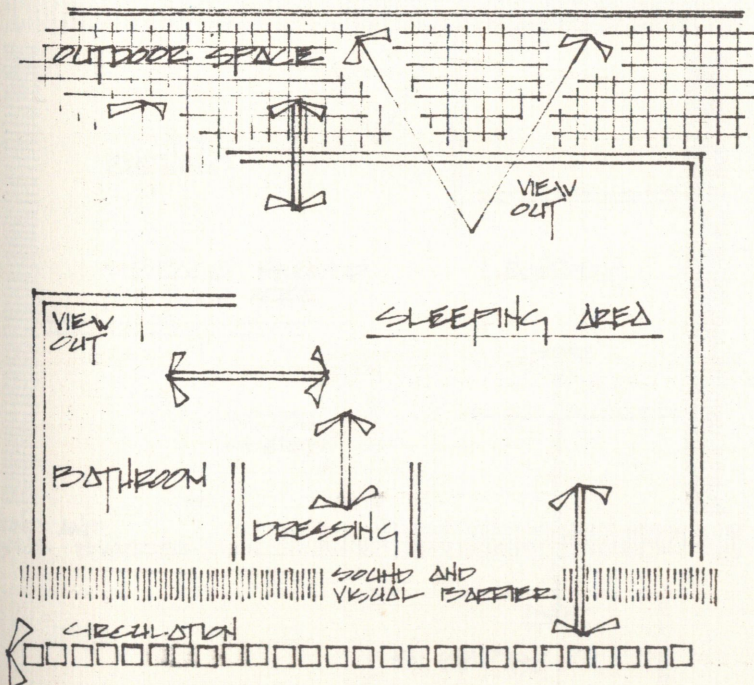
The bedroom is not only a place to sleep, but a very private, personalized domain with great meaning and importance to the individual. It can be a place of escape where its spirit is a reflection of the individual who positions himself and his possessions within the framework of the architecture. This is not to say that the architecture alone does not possess a quality and spirit. Its inherent sense of place may be very strong, but those possessions personalize and claim the space.

Character:

Because this is the most intimately personalized space in the dwelling, it takes on the qualities of a private living room. It can be a place of quiet solitude and sleep, or filled with activity. Here, passage of time is very important, especially morning and evening. Time is an indicator of activity. A connection with the outdoors is a resulting indicator of time, and therefore the space must be allowed to overflow its boundaries and permit the exterior to penetrate into the interior.

Goals:

- to provide view and connection with the movement of the sun.
- to use lighting to control mood.
- to allow the space to expand to the exterior.
- to adequately buffer the space from unwanted intrusion.
- to provide space and circulation for the processes of waking and getting ready for bed.
- to provide easy access to bathroom facilities.
- create a scale in which a person in the sleeping position is comfortable.
- to create a sense of security through controllable lighting etc.



Bathroom

Theory:

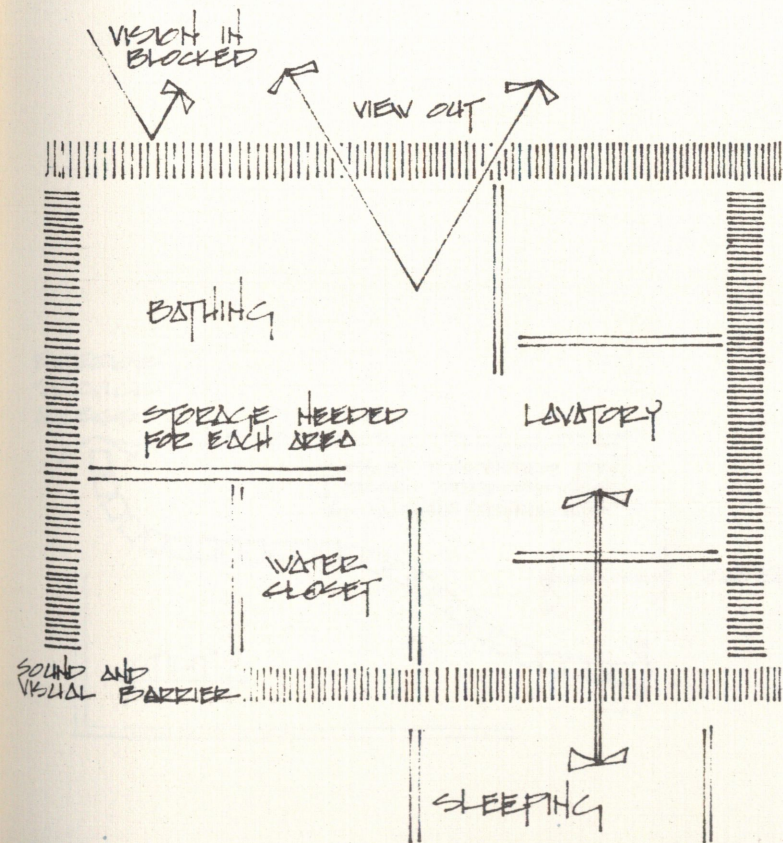
The ritual of bathing in our culture is a very private, intimate sequence of activities. These acts are performed not only for hygiene, but also for personal enjoyment, hence they are important for fulfilling some of the needs of the human spirit.

Character:

The nature of this space demands not only a well functioning place, but an air of privacy, leisure and relaxation. Its interior character may range from a bright very lively mood, playing upon the slick, shiney character of the functioning parts, to a very subdued soft atmosphere. Due to the necessary buffers surrounding this room separating it from the rest of the dwelling, a connection with the outdoors may be needed to keep the space in contact with the whole of its surroundings, not just the path leading to it.

Goals:

- to provide space to facilitate the varied activities of:
 - bathtub/shower
 - watercloset
 - lavatory
- to provide adequate counter space and storage.
- to allow view to the outside while blocking view in.
- to provide an abundance of light, natural and incandescent.
- to provide adequate natural and mechanical ventilation without drafts.
- sound isolation.



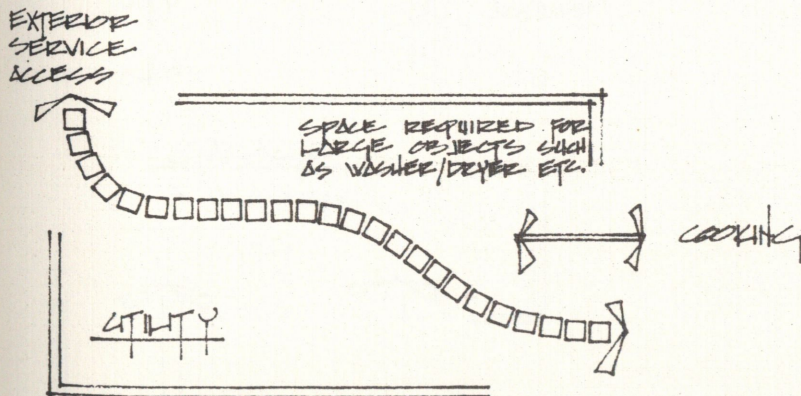
Utility or Laundry Room

Character:

This room must not be a bleak, dull space which would make working in it even more mundane and boring.

Goals:

- ease of function.
- ample storage.
- room for large appliances such as washer, dryer, freezer, etc.
- washtub.
- service access.
- natural light if possible.
- open floor space.



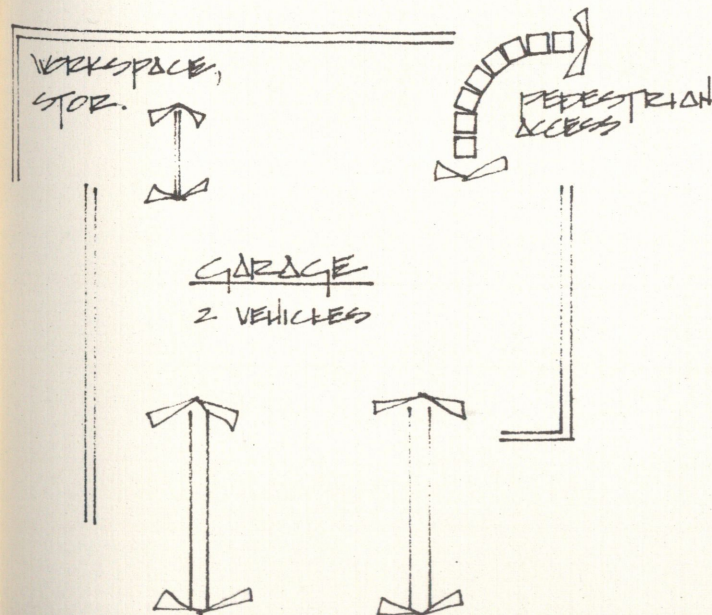
Garage

Character:

May be either a double car garage or a garage carport combination. It should not appear as a large obtrusive mass and should not mark the major entry statement of the dwelling.

Goals:

- must provide storage for two vehicles.
- contain some storage and workspace.



Footnotes

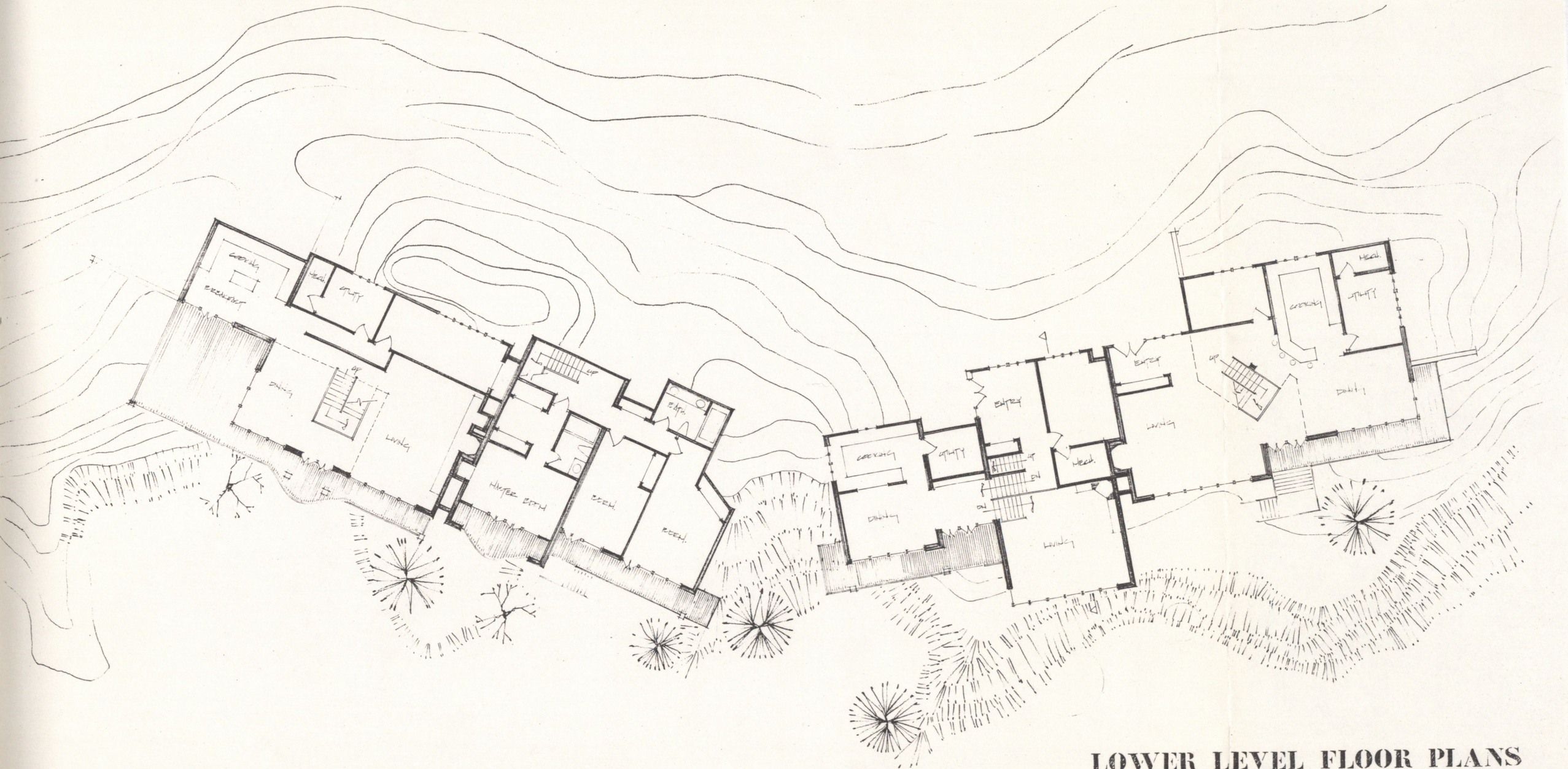
1. Sergius Ivan Chermayeff, *Community and Privacy*, (New York: Doubleday, 1963) page 63
2. Richard Uterman and Robert Small, *Site Planning for Cluster Housing*, (New York: Van Nostrand Reinhold, 1977) page 9
3. Charles Moore, Gerald Allen and Donlyn Lyndon, *The Place of Houses*, (New York: Holt, Rinehart and Winston, 1974) page 45
4. Kent Bloomer and Charles Moore, *Body, Memory and Architecture* (Yale University: 1977) page 105
5. *IBID*, page 96
6. Edward T. Hall, *The Hidden Dimension* (New York: Doubleday, 1966) page 68
7. *IBID*, page 51
8. Christian Norberg-Schulz, *Genius Loci: Towards a Phenomenology of Architecture* (New York: Rizzoli, 1979) page 63
9. Uterman and Small, *Site Planning for Cluster Housing*, page 1
10. *IBID*, page 10
11. National Oceanic and Atmospheric Administration, *Local Climatological Data: Annual Summary with Comparative Data, Billings, Montana, 1981*, (National Climatic Center, Asheville, North Carolina)

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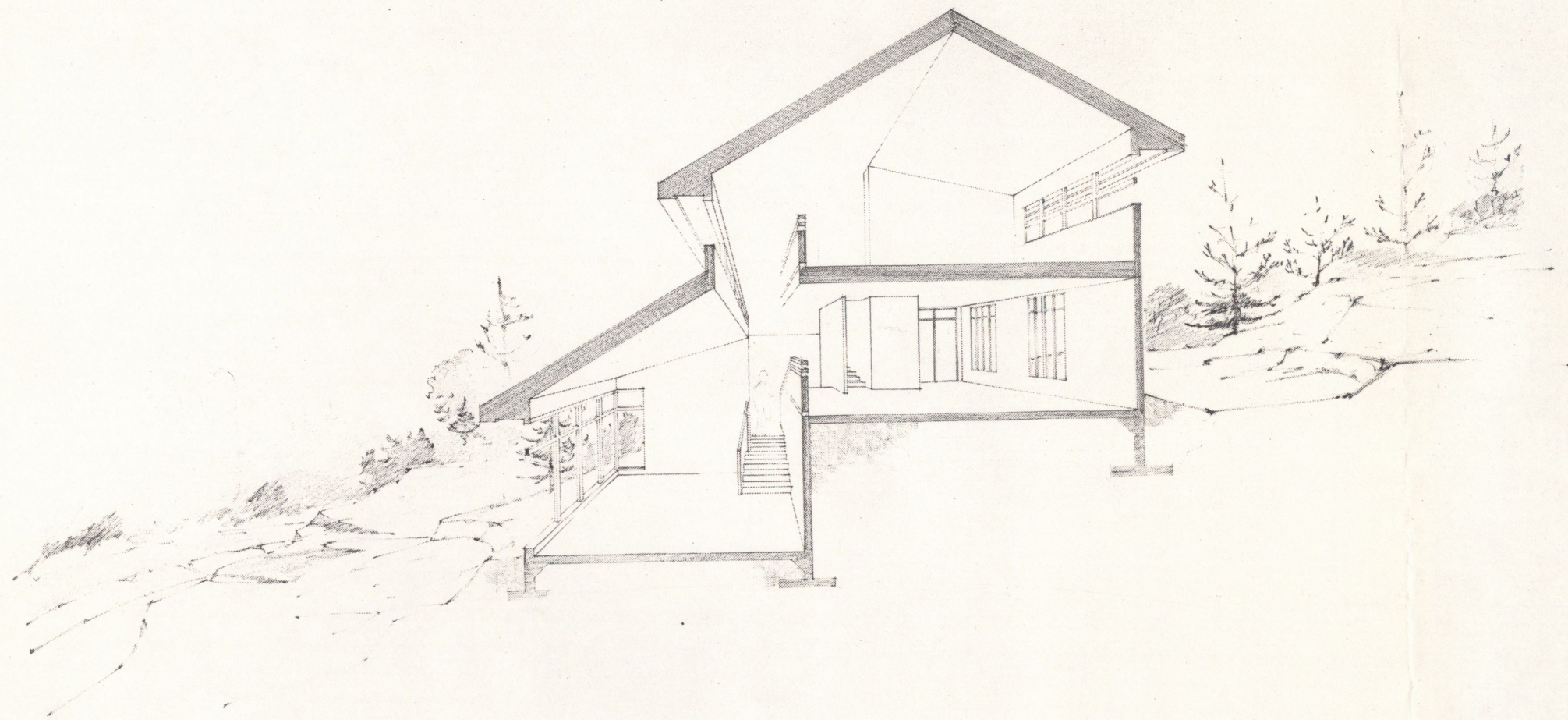
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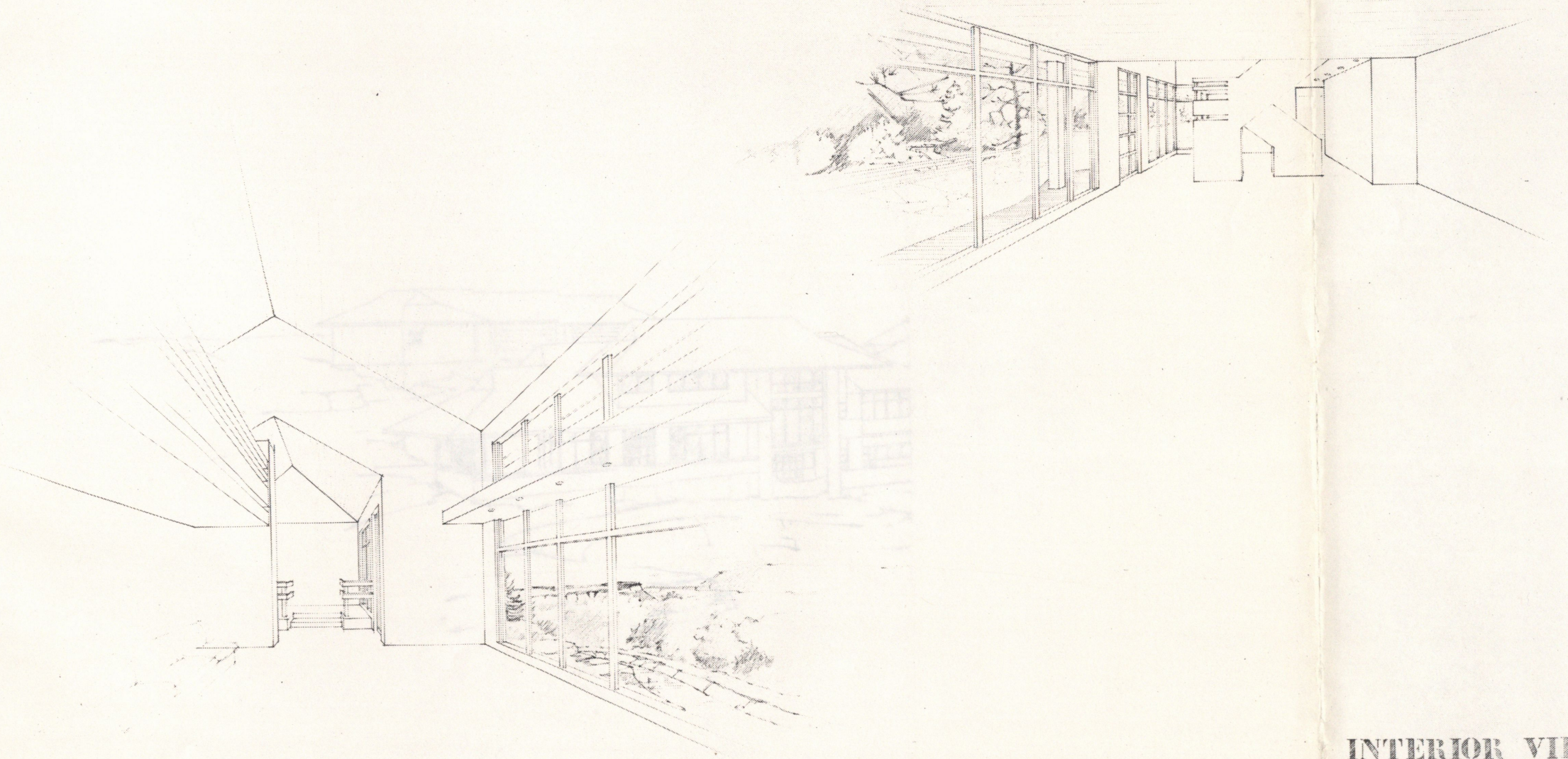
MASTER PLAN



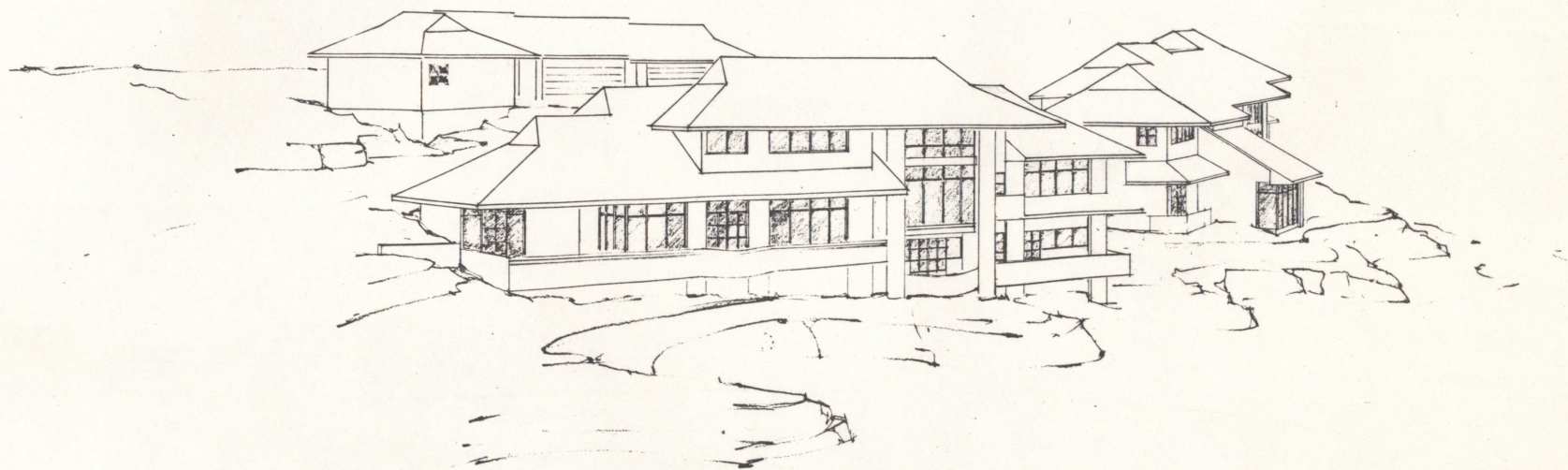
LOWER LEVEL FLOOR PLANS
SCALE: 1/8" = 1'-0"



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