
Better Homes and Gardens
1958
IDEA HOME
featuring famous products advertised in Better Homes & Gardens
AUG 24 thru SEPT 7
MANNON ASSOCIATES INC.
MILE HIGH PHOTO — DENVER

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*The 1958 cover photograph pictures the west (left) and south elevations of 3895 West Berry Avenue, the 1958 Better Homes and Gardens Idea Home. Beneath the sign, from left to right are Clyde Mannon, wife Barbara Haak Mannon, Barbara's sister Eileen Haak Claar and her husband Roy Claar, who served as Mannon's carpentry superintendent. In the background is the Centennial Turf Club racetrack that operated on the site from 1950 until 1983.*

*Photograph courtesy of Clyde Mannon.*

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## INTRODUCTION

The preparation of these *Arapaho Hills Historic Preservation Guidelines* is the third project undertaken by the City of Littleton using federal funding available for Certified Local Governments.

The first of these projects was a *Reconnaissance Survey*, completed in April of 2009.

The second was a *National Register Nomination*, completed in February of 2012 and currently under consideration by the National Park Service.

This, the third project, seeks to clearly define the elements that make Arapaho Hills unique and to offer preservation guidelines in language accessible to the general reader.

Its intent is to promote the use of historic preservation principles in making routine decisions about lot and house repair, maintenance, rehabilitation and addition design.

## BRIEF HISTORY / ARAPAHO HILLS

Between 1949 and 1957, developer/designer Edward B. Hawkins and his business partner, contractor Clyde Mannon, built the Arapahoe Acres subdivision in Englewood, Colorado. In 1954, Hawkins purchased 160 acres in unincorporated Arapahoe County for the development of a second subdivision.

The partners originally envisioned a neighborhood of 360 modern homes covering the entire 160-acre site. The Arapaho Hills subdivision plat filing in May of 1955 included 37 acres of the site with eighty-three lots (Appendix F). The boundaries encompassed the area between the west side of South Lowell Boulevard and the east side of South Camargo Road between the north side of West Berry Avenue and the south side of West Arrowhead Road.

The subdivision's street plan and lot division were designed by architect and planner Joseph G. Dion, who had assisted Hawkins with house design in Arapahoe Acres.

Under the direction of Hawkins, water and sewer service and streets, curbs and sidewalks were put in place.

After designing the sales office/carpentry shop at 5301 Lowell and the house at 3650 Chimayo, Edward Hawkins withdrew from an active design role in the project.

The balance of Arapaho Hills was developed entirely by Clyde Mannon, working as Mannon Associates, with the majority of the houses designed by regional architect Bruce Sutherland assisted by architect John Eatwell.

Six of the houses were designed by national firms for Better Homes & Gardens magazine as annual "Show" or "Idea" homes for the years 1956 through 1961. These include, in chronological order, 3790 Chimayo, 5395 Mohawk, 3895 Berry, 5490 Mohawk, 3605 Berry and 3905 Berry. One home, the Kristopeit House at 3890 Arrowhead, was designed by the son of the original owners.

Mannon Associates incrementally purchased individual lots or groups of lots from Edward Hawkins or a trust established by him. Houses were built speculatively or custom-built for individual owners.

In the early 1960s, in the midst of an economic downturn, project sales slowed. Mannon began to reconsider plans to develop the remainder of the project.

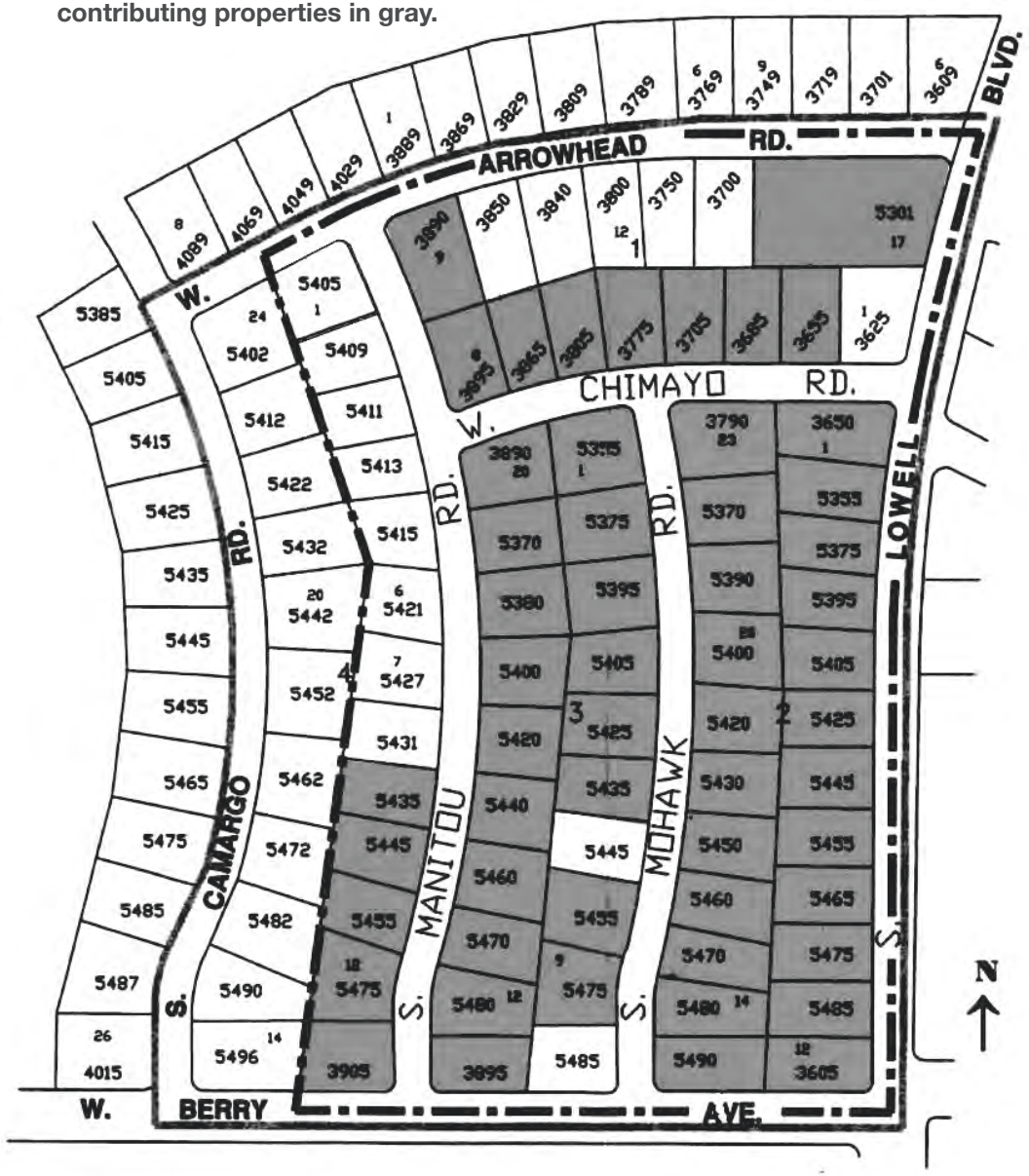
After struggling to sell the two completed houses at 5475 and 5455 Manitou, Mannon decided to abandon work in Arapaho Hills. He began to focus on commercial building and then left construction entirely.

Beginning in the mid-1960s and through the 1970s, Mannon and Hawkins sold their remaining unbuilt lots to others. Mannon also sold the sales office/carpentry shop, originally intended for eventual conversion to a house, to a private school.

More detailed information regarding Clyde Mannon, Bruce Sutherland and the history of Arapaho Hills appears in Appendix C.

**Original Arapaho Hills Subdivision Boundary**

**Proposed National Register District Boundary with contributing properties in gray.**



On May 18, 2012, a National Register Nomination for Arapaho Hills was approved and forwarded by the Colorado State Review Board to the National Park Service in Washington, D.C. for a final determination of eligibility.

The proposed National Register District includes fifty-four houses and the original sales office/carpentry shop as contributing to the proposed Historic District, along with two original signs.

The Nomination defines the following criteria for the significance of Arapaho Hills:

**Social History**
Arapaho Hills reflects broad social trends that emerged during the post-World War II period. Due to the nature of industrial development after the war, Littleton was transformed from a largely agricultural and blue-collar community to a burgeoning suburb of highly educated white-collar professionals.

*This site map was originally prepared by Littleton's Office of Community Development in conjunction with the listing of Arapaho Hills on the city's "List of Merit."*

*The gray overlay was added to identify the fifty-five buildings considered contributing to the proposed National Register Historic District.*

Many original Arapaho Hills homebuyers included engineers and managers at some of the area's most prominent firms – Martin Company, Mountain States Telegraph and Telephone, Ramo-Wooldridge, Minneapolis Honeywell and Ohio Oil.

**Community Planning and Development**
Arapaho Hills reflects new forms and features of suburban residential subdivisions that were created to house Littleton's highly mobile and rapidly expanding population in the post-World War II period.

**Architecture**
Arapaho Hills demonstrates the distinctive characteristics of a unique architectural type and period, the Usonian and International styles as they appeared in suburban residential subdivision design in post-World War II Littleton.

Arapaho Hills was designed and built by local professionals with a high level of training, knowledge and expertise in Modern residential design

It has architectural significant for its association with designer/developer Edward Hawkins, a local pioneer in Modern residential development, design and construction; Joseph G. Dion, a prominent local Modern architect and planner who designed the site and lot plan; Bruce Sutherland, a prominent Colorado Modernist architect and planner who was the primary architect; and Clyde Mannon, an established and recognized local builder who specialized in the construction of Modern residential design.

*A complete copy of the National Register Historic District Nomination for Arapaho Hills is available on the city of Littleton website at http://www.littletongov.org/histpres/ under the sidebar heading "Document Downloads" as "Arapaho Acres National Register Nomination."*

These *Historic Preservation Guidelines* are modelled on those originally prepared by the author for the Arapahoe Acres neighborhood in 2004. They address only those buildings and signs considered contributing to the proposed Arapaho Hills National Register Historic District.

In the *Arapaho Hills Reconnaissance Survey*, each building and sign was pictured, described and its design features briefly discussed. That text focused on the house exteriors as visible from the street and their relation to site, lot and other houses.

This volume largely retains that scope while taking a more comprehensive analytical approach. Each chapter defines an individual design feature of Arapaho Hills, illustrated by an elevation from an original architectural drawing and current photos. Subsequent photo pages illustrate variations of the feature that appear throughout the neighborhood. Material issues associated with specific features are included in those chapters. A final chapter discusses exterior masonry and wood siding.

Each photo is labeled with the address of the house, using initials for the street names: SLB for South Lowell Boulevard, SMaR for South Manitou Road, SMoR for South Mohawk Road, WAR for West Arrowhead Road, WCR for West Chimayo Road and SBA for South Berry Avenue.

As a whole, Arapaho Hills displays a remarkable degree of integrity. Though minor alterations such as infilled carports and replacement doors or windows are not uncommon, only a handful of buildings appear to have extensive alterations visible from the street. All of the structures remain compatible with the historic neighborhood's scale, massing and setbacks.

Though this document is intended to be comprehensive, it cannot be complete. Other design features will undoubtedly be identified on concealed or private house elevations. It is hoped that individual homeowners will produce a detailed exterior survey of their own houses, using this volume as a guide and share the resulting information with the Arapaho Hills neighborhood. A separate survey is needed to address interiors.

On a terminology note, the term "facade," traditionally used to describe what is considered the "front" of a building, or the side that includes the main entrance or is the most visually dominant, does not appear in the text. Because of the nature of house design in Arapaho Hills, the term "facade" is often irrelevant. The more generic "elevation," "face" or "side" is used in its place.

The houses are named for their original owners. In some cases, the houses were custom-designed and surviving architectural drawings bear their names. Other houses were designed and built on a speculative basis. The names of the houses were determined by comparison between original drawings, Arapahoe County land transfer records and Littleton city directories of the period.

In addition to photographs, some plans and elevations are used to illustrate the design principles of Arapaho Hills. These drawings were donated to the neighborhood by the wife and daughter of Bruce Sutherland's assistant and draftsman, John Eatwell, and are in the possession of the neighborhood archive. Variations can be observed between the drawings and the houses as they appear today.

In some cases, these variations show design changes that took place between the drawings and the completion of final construction. Others reflect changes that homeowners have made through the years.

Though these *Guidelines* largely define the houses as visible from the street, the preservation recommendations are directed at the entire house.

Unlike many conventional suburban houses of the period where defining design details were restricted to the street side of the house, houses in Arapaho Hills were fully and carefully detailed on all four exterior elevations.

Therefore, the same careful consideration is recommended for all exterior details, no matter where they appear. These exterior preservation principals can also be applied to interiors.

All of the *Historic Preservation Guidelines* in this document (see page 126) are based on the *Secretary of the Interior's Standards for Historic Preservation* (Appendix A).

As Arapaho Hills moves into the future, it will be subject to increasing pressures and threats to its historic appearance. If its integrity is to be preserved, it will have to be based on knowledge and considered decisions, not its relatively recent age, chance or circumstance.

Excessive exterior remodeling and overscaled, poorly sited and badly designed additions and replacement houses are proliferating nearby, violating the visual continuity of neighborhoods and robbing adjacent homes of privacy, views, sunlight and air.

Though insensitive additions and sweeping exterior remodeling are the most aggressive potential threats, architectural character is just as easily compromised by a series of small alterations that, taken individually, might seem insignificant. Even the cumulative effect of poorly executed repairs and maintenance can compromise architectural integrity.

How can Arapaho Hills homeowners avoid these pitfalls and preserve the unique qualities of the neighborhood into the future?

***Embrace Historic Preservation***

Arapaho Hills is a unique enclave of high-quality custom-designed and constructed homes. It merits special consideration to save it for future generations. It requires thoughtful planning to preserve it as a financial asset shared by all homeowners. Only a broad program of community-wide preservation can maintain these historic qualities and, in turn, the neighborhood's quality of life and market value.

When undertaking work on an Arapaho Hills home, homeowners should consider four distinct but interrelated approaches:

*Preservation* focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.

*Rehabilitation* acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the properties historic character.

*Restoration* depicts a property at a particular period of time in its history, while removing evidence of other periods.

*Reconstruction* re-creates vanished or non-surviving portions of a property for interpretive purposes.

The *Secretary of the Interior's Standards* offers detailed standards for each approach.

***Help Develop and Share Historic Preservation Resources***

Homeowners in Arapaho Hills are encouraged to establish and participate in a formal or informal community group to promote a preservation ethic within the neighborhood.

Today, few homeowners have the time to effectively manage their home – be it cleaning the furnace, replacing a roof or planning an addition. Though their home represents the single most valuable asset of many owners, the daily responsibilities of family and work just don't leave much time for home projects, much less those that thoughtfully consider historic preservation.

The goal of a community preservation group in Arapaho Hills is simple — to make it easy for homeowners to successfully maintain and rehabilitate their homes using principles of historic preservation.

Such a group can share years of homeowner research and project experience by gathering, recording and sharing resources for repair, maintenance and rehabilitation projects.

A list of firms, individuals and resources that have provided quality work, consulting or information appropriate to the neighborhood would be valuable. This knowledge and information can be shared through informal one-on-one conversations, neighborhood gatherings, a newsletter and special technical guides and workshops. Arapaho Hills might also consider more contact with homeowners in its sister community, Arapahoe Acres, where similar design and construction details and materials appear.

A sample of an Arapahoe Acres technical preservation guide appears in Appendix E.

***Slow Down***

Many new owners rush into renovation projects before understanding what makes their Arapaho Hills home special and unique. Unfortunately, hasty and ill-considered decisions can destroy an important historic feature for all time.

Take the time to make the right choices and avoid repenting irreversible decisions. Even the most thoughtful and knowledgeable modern design and architecture enthusiast should live with their house and understand its unique design and features before undertaking alterations or additions.

***Know Thy House***

A careful survey itemizing a house's historic features is the first step in understanding its unique character. Later changes or additions that add to or detract from its historic character should also be identified.

Then, guided by preservation principles, homeowners can develop a plan that respects original features and quality additions while making sensitive changes that meet neighborhood design and material standards.

Homeowners should consider creating a permanent scrapbook that records the history of their individual home.

The scrapbook could include a current neighborhood directory and historical information on previous owners; repair and maintenance reference materials; historic and current plans, specifications and photographs; a calendar of regular maintenance tasks; records of house maintenance and repairs; bids, change order documents and cost records for major capital improvements; and construction and appliance warranties.

Such scrapbooks not only help the owner maintain their property, they're an invaluable tool to pass along to subsequent owners when the house changes hands.

***Do the Research***

Locating surviving previous owners can provide additional historical documents, photographs and oral histories on Arapaho Hills and individual homes.

Through the internet and word-of-mouth, house plans and copies of historic photographs and articles can be made available to the neighborhood. These can prove invaluable, as even photos with fragmentary or distant house views can provide important information to current homeowners in understanding and planning for the care of their homes.

***Shop Around***
When finding replacements for lost or damaged historic features, do-it-yourself stores like Home Depot and Lowes rarely offer masonry or siding materials, doors, hardware, lighting fixtures, or even downspouts appropriate to Arapaho Hills.

Homeowners should consider maintaining a list of salvage yards, retailers and suppliers that provide replacement materials, fittings and fixtures that most closely match historic details.

***Choose the Right Design and Construction Professionals***
A call to friends and family for references and a few quick interviews usually secure the services of a designer or contractor.

Unfortunately, due to the uniqueness of Arapaho Hills homes, few vendors are knowledgeable enough to provide services that can match the original quality and character of the homes.

Contractors tend to do too little, trying to sell all homeowners on the same repair and remodeling solution whether or not it's appropriate for an individual home. This is faster, easier and more profitable for them because they don't need to think creatively to provide individualized solutions or services. They tend to think on a functional level with little or no consideration for the importance of design features that can easily be lost or damaged along the way.

In contrast, designers and architects tend to do too much, always adding their own contemporary touch or introducing their own personal interpretation of how the historic design "should" look.

Both approaches can visually compromise and often physically damage the unique character of Arapaho Hills homes. To avoid these pitfalls, join neighborhood gatherings to locate proven references and tips on choosing professional assistance.

Even then, the strict guidance and personal project supervision of the owner is still required to ensure the best quality results.

If a homeowner has questions regarding the appropriateness of their vendor's proposal or on-going work, other more experienced neighbors may be available to help ensure sensitivity to historic neighborhood design, materials and construction.

The right rehabilitation increases the value of a historic Arapaho Hills home. The wrong rehabilitation can damage a house and reduce its value.

***Get Smart about Economic Incentives for Historic Preservation***
In addition to increased home values, there are other financial benefits of historic preservation. Assuming the neighborhood is successfully listed on the National Register, state tax credits on projects over $5,000 may be available to owners whose homes are over fifty years of age. The City of Littleton can assist homeowners in understanding and applying for these tax credits.

Other existing preservation incentives should be explored. Easement donations, in which an owner realizes a federal tax benefit for preserving the exterior of their home, is one way that current homeowners can ensure the preservation of the neighborhood into the future. Easements do not preclude all changes, just ensure their compliance with the *Secretary of the Interior's Standards*.

Neighbors should also plan to keep up-to-date on any new economic incentives for historic preservation that might develop in the future.

***Know Your Non-Resident Neighbors***
Non-resident owners who infrequently visit the neighborhood may not always be aware of the exterior condition and appearance of their property. Lines of communication should be kept open between resident and non-resident owners, all of whom should be listed and kept up-to-date in a current neighborhood directory.

When the market value of a rental house is reduced by poor maintenance, the value of neighboring properties is also adversely affected. When a badly deteriorated property is eventually sold, it is much more likely to be subjected to an aggressive remodeling by the subsequent owner, often specula-

tors who purchase run-down properties at bargain prices.

In addition to state tax credits, non-resident owners may also be able to realize federal tax credits on rental properties rehabilitated in concert with the *Secretary of the Interior's Standards*.

***Choose Your New Neighbors***
The future preservation of Arapaho Hills depends on finding new homeowners that understand and appreciate the values of the community and are sensitive to retaining the historic qualities of the neighborhood.

The use of selected realtors who will seek out the most appreciative audience for Arapaho Hills homes should be encouraged. This may attract new home buyers who value the historic qualities of the neighborhood and are dedicated to its preservation. It will also ensure the highest possible sales price for the homes.

Realtors and prospective buyers should understand that those seeking a house that's completely contemporary in size, design, finishes and plan, will find a newly-built or custom-built house the best alternative.

For those seeking to freely remodel a home to suit their personal tastes and lifestyles, an existing home with no architectural significance is a better choice.

Similarly, many other historic neighborhoods can offer the charms of arched windows, or other features characteristic of Victorian houses, Arts and Crafts Bungalows or Tudor style cottages.

Owning a home in Arapaho Hills is not for everyone. The neighborhood has social, cultural and architectural significance that transcends its value as mere residential real estate. Individuals who are not interested in playing, at least to some extent, the role of cultural steward, should consider whether or not an Arapaho Hills home really meets their needs.

***Stay Involved***
Homeowner monitoring of neighborhood infrastructure and utilities maintained by the city of Littleton and other public and private entities is essential to the interests of the neighborhood.

Homeowner participation in Littleton community groups, working with elected officials and staff or serving on city boards can all help ensure the continuing quality of life in Arapaho Hills.

Littleton is currently re-evaluating its ordinance and policies related to historic preservation. The knowledge and resources of Arapaho Hills residents can make a valuable contribution to this process.

Historic preservation tools and processes developed by the Arapaho Hills community can be translated to other historic Littleton neighborhoods of all architectural styles and periods.

Beyond the immediate concerns of the neighborhood itself, promoting the preservation of important commercial and civic structures is essential to the quality of life in Littleton, including modern structures that reflect the city's post-World War II historic context. (http://www.historycolorado.org/archaeologists/post-world-war-ii-documents).

Littleton is fortunate to have active cultural groups that are deeply involved in the creation of arts programs in the schools and the community at large. Arapaho Hills residents can make a valuable contribution by helping raise awareness of the importance of local history, architecture and design in the life of the city.

Other ways for homeowners to get involved and stay informed are memberships in regional, state, national and international preservation groups and sharing publications on post-war modernism and historic preservation.

**SITE**
The Arapaho Hills site is located on a low ridge overlooking the eastern plains.

The highest elevation, 5,444 feet, is located at the northwest corner of the neighborhood. The site drops 65 feet to the south and east.

Many residential developments of the period leveled their sites for more cost-effective design and construction.

In Arapaho Hills, the natural topography of the site was retained and the houses were individually designed to negotiate the grade changes.

Modern street planning is also a feature of the neighborhood.

This aerial photo of Arapaho Hills, taken while the construction of homes was still in progress, shows the site and street planning designed by architect and planner Joseph G. Dion.

Manitou, at the top of the photo and Mohawk, below, curve slightly to the east between Berry, at left and Chimayo. At right, Chimayo curves slightly southward west of Lowell. Arrowhead, which runs parallel to Chimayo on the north side of the neighborhood, is outside of the photo frame to the right. All interior roads are approximately fifty feet in width.

The street plan provides a strong sense of visual continuity. The gentle curves of the streets block direct views through the neighborhood. The only through streets are Lowell to the east and Berry to the south. This creates a park-like site with landscaped views, privacy, safety and quiet.

The asymmetrical siting of the houses and variations in massing and roof form clearly distinguish Arapaho Hills from more conventional subdivisions of the period, like the one located just east of Lowell, at the bottom of the photo.



*Aerial photograph courtesy Clyde Mannon, c1960.*


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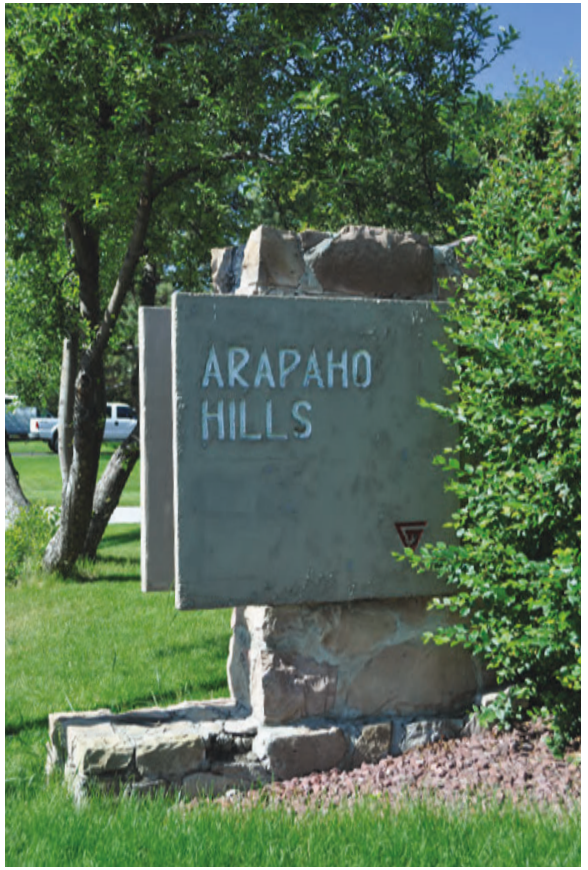

Approaching from the northeast, the first Arapaho Hills building visible is the former sales office/carpentry shop at Lowell and Arrowhead, now a pre-school.

This original signage, intended to be removed after the completion of neighborhood sales, survived behind shrubbery. Dating to the inception of Arapaho Hills, the logo and typography were probably designed by Edward Hawkins.



Lowell, which carries the heaviest traffic adjacent to the neighborhood, forms the east perimeter of Arapaho Hills.

This view shows the west side of Lowell looking south from Chimayo. The houses, positioned behind a 25' setback, are largely concealed by landscaping. No sidewalks appear on Lowell or Berry, only curbs.




Also visible beside the street light in the smaller photo at left, this original neighborhood sign appears on the side lawn of 3650 Chimayo facing Lowell.

It is constructed of two cast concrete slabs secured to a pink rhyolite masonry base. The recessed text and logo are painted.




West Berry Avenue, at right, is also a major thoroughfare but carries less traffic than Lowell. Here seen looking east, it forms the south boundary of Arapaho Hills. A contemporary, design-appropriate neighborhood sign appears at the corner of Berry and Manitou.

Opposite Arapaho Hills, on the south side of Berry, are the extensive grounds of Littleton's Goddard Middle School.





This view shows the scene looking west on Chimayo from Lowell. On the interior, overhead utilities run along the rear lot lines. The lines visible here run behind the houses on Lowell and Mohawk and cross above Chimayo to the north.

Looking east on Chimayo from Manitou, the eastern plains are visible in the distance.



This view also looks east on Chimayo, just west of Mohawk.

The streets are paved in asphalt. Narrow sidewalks with angled curbs and gutters were cast in place as a single concrete unit on the interior of the neighborhood. Known as "Hollywood" curbs, these provide a visually consistent transition between the street and driveways by eliminating the need for curb cuts.



This view looks south on Manitou. Just visible in the distance, at the crest of the ridge south of Berry, is Littleton's Goddard Middle School.





These two views show Manitou, looking to the north.

Wide lawns, specimen trees and beds of shrubs and perennials dominate views throughout the neighborhood.





Looking south on Manitou, the west end of Chimayo is visible at left.

The Day House is centered on Chimayo where it intersects with the north end of Mohawk.



The gentle curve of the street is clearly visible in this view looking northward on Mohawk.

**LOT**

While the site and street planning provide a strong sense of visual continuity in Arapaho Hills, the lot design and siting of the houses form the basis of the neighborhood's visual diversity.

Lots in Arapaho Hills are rectangles or slightly irregular polygons in shape, ranging in size from 2-1/4 to 3-1/4 acres.

On Lowell, lots are largely level.

On other streets, lots slope downward from west to east and north to south. The houses on these lots have two levels, taking advantage of views to the east from the front, side or rear.

Formal and informal staircases negotiate grade changes within the lots.

Bruce Sutherland's site plan for the Stadler, Hurtt and Roscoe houses on Lowell illustrates many lot design principles of Arapaho Hills.

Sitting on largely level lots, the houses are positioned behind a 25 foot setback. Walk and driveways are combined to form larger continuous expanses for landscaping.

The houses are positioned at varied angles to the street and each other, creating a more diverse streetscape and providing privacy between houses and from the street.

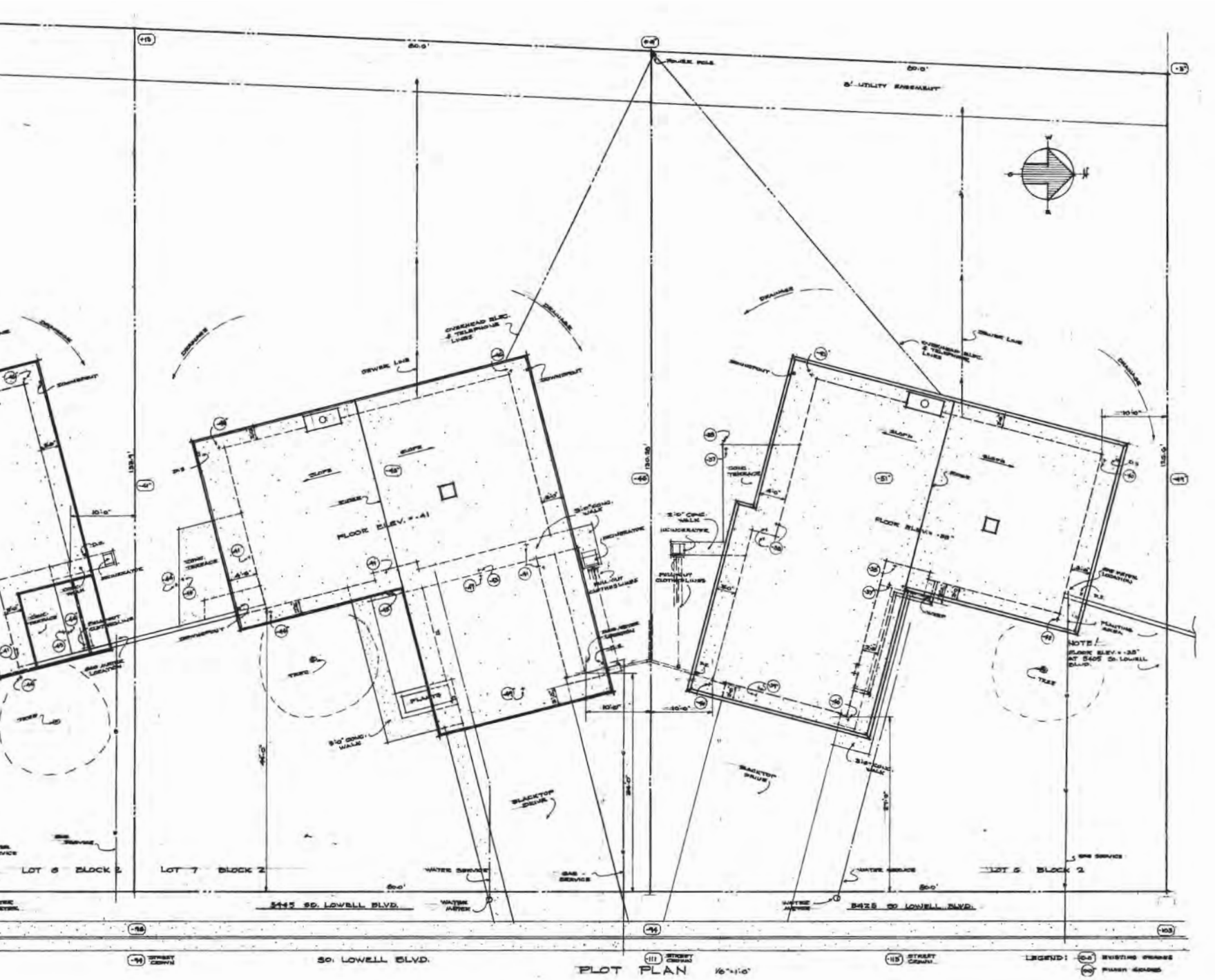
Masonry walls, sometimes integral to the body of the houses, extend across the lot lines to divide the front yards from the private side and back yards.

Planting locations for specimen trees are indicated and in the side service yards, incinerators, pull-out clotheslines and utility meters are shown.

Incoming electric, telephone and sewer lines are noted, along with the locations of downspouts and site drainage. An eight foot utility easement appears at the rear of the lots.




*Bruce Sutherland's lot design for 5455, 5445 and 5425 South Lowell Boulevard of December 18, 1958. Drawing courtesy the Arapaho Hills Archive.*




PLOT PLAN 1/8"=1'-0"

The walls and fences that divide public from private areas of the yard are important lot features. They help create the strong horizontal orientation and visual continuity that characterizes Arapaho Hills.

1 A concrete block wall joins the Stadler House to a lower wall to the north, at right.

2 The Stadler wall separates the front and back yards. It ends at the north wall of the house, then resumes to the south, just behind the face of the garage.

3 A walk branches off the driveway to the front entrance, creating a narrow planting bed adjacent to the garage wall.

4 The Hurtt House driveway serves a two-car carport. The walk, at left, runs the length of the driveway.

5 Between the houses, the concrete block wall of the Stadler House and the red Lyons sandstone wall of the Hurtt house join.

6 A concrete block wall forms the face of the Hurtt House. It extends beyond the house to divide the front and rear gardens.

7 The wall continues across the lot line to form the garden wall of the Roscoe House.

8 A single walk and driveway lead to the Roscoe entrance, once sheltered by a carport. The concrete block wall perpendicular to the entrance extends past the house, joining a neighboring fence to the south.









4



5445 SLB

5



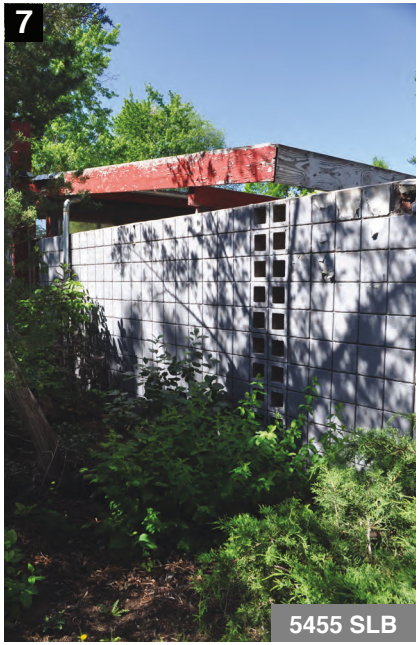
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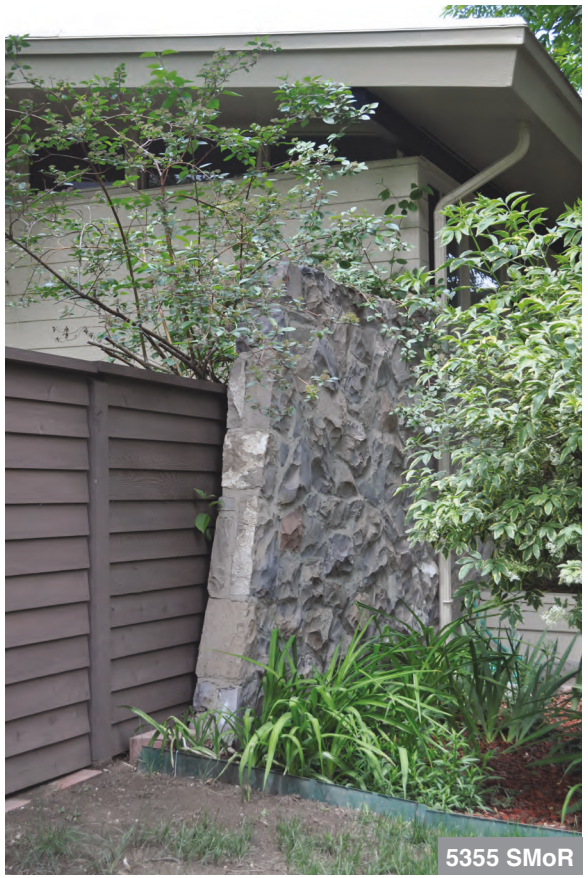






This curved wall forms the face of two adjacent carports. Between, it creates a high garden wall that separates the public and private areas of the yards.

A lower wall with wood gate extends from the face of the house to the lot line. Both are constructed of the same masonry.




Walls and fences are sometimes combined. Here, masonry extends beyond the face of the house to form an angled garden wall.

A contemporary fence, very formal in design, emerges behind the wall and extends across the lot line to the adjacent house.

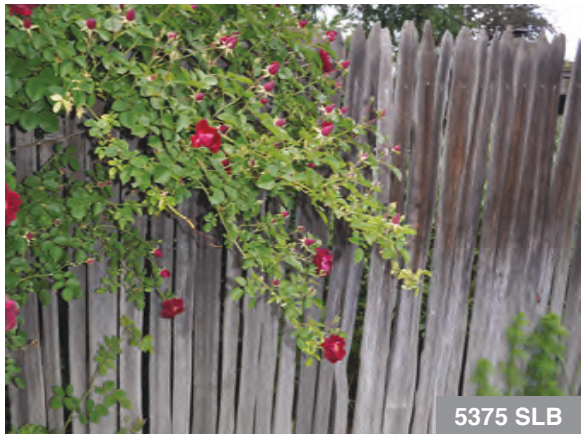






Theses two formal fences relate to the wood siding materials of their respective houses.


5420 SMoR


5375 SLB

This rustic fencing material is formalized for use in a front yard by the addition of a simple horizontal cap.

Informal grapestake fences commonly appear between back yards.


3655 WCR

Masonry is also used for retaining walls, negotiating grade changes within and between lots. This rhyolite retaining wall steps down from the side wall of a garage.


3685 WCR

Two concrete block walls, one high and one low, flank the red sandstone masonry wall that carries this carport roof.

To the right, the wall also defines a planter. To the left, it forms a retaining wall along the curvilinear driveway.




This curvilinear retaining wall follows the driveway as it drops to a garage located below street grade.




A formal staircase rises from the foot of the drive to join an upper walkway to the main entrance.

The wall and staircase are both constructed of the same red brick as the house.







This staircase rises from the front walkway along a masonry planter to the front entrance.

From the driveway, this stair rises to a covered front entry.


5420 SMoR

More informal staircases appear, often in back and side yards.

This stair descends a steep side yard amid a naturalistic setting of native red stone.


5395 SMoR

Surrounded on three sides by the house, this recessed courtyard includes a staircase with a series of landings that rise from the front walkway to the entrance.

Beside the stair, low retaining walls form a planter box.


5370 SMoR


5455 SMoR


5400 SMoR


5301 SLB

Other masonry walls define low planting beds at grade, adjacent to the buildings.


5455 SMaR

Walk and driveways are rectilinear and curvilinear. Here, a short, straight walk and concrete driveway are set perpendicular to the street.

This long, wide asphalt walk and driveway forms a broad curve from the street to the garage. A walkway to the back yard branches off at right. A staircase rises to the entrance.


5400 SMoR

This semi-circular concrete driveway curves through the lot, branching off to the garage, carport and formal entrance to the house.


3685 WCR


3790 WCR

Another curvilinear driveway turns beneath a two-car carport positioned across the face of this house. At right, the driveway expands to form a parking pad.


5490 SMoR

In the two lower photos, both these walk and driveways begin perpendicular to the street and form curvilinear pads for parking and access to garages and carports.


5420 SMoR

On this lot, a semi-circular gravel drive and informal landscape create the feeling of a remote mountain property.


3685 WCR


5375 SMoR


5420 SMaR


5355 SMoR

Expansive lawns enhance the visual continuity of the landscape.

Mature trees and shrubs frame the houses.


3895 WCR

Large specimen trees are common.

Perennial borders, more contemporary than original, are increasing to reduce the water usage and maintenance requirements of lawns.


5435 SMoR

Perennial beds often appear between driveways.


5400 SMaR

In addition to trees and shrubs, perennials appear as isolated specimen plants, seen here in a foundation planting with crushed rock.


5445 SMaR

A few lots have naturalistic landscapes. This view looks from a natural landscape across to the more conventional front lawn next door.


5420 SMoR

The original owner of this house, born and raised in the mountains of Austria, was a pioneer in the use of native plants and rock in a naturalistic setting. He commissioned this house and garden to evoke a mountain cabin.

**PRIMARY VOLUMES**
In Arapaho Hills, rectangular and polygonal volumes of varying dimensions are massed to form asymmetrical houses of diverse form and size.

These volumes and the manner in which they're grouped create the next level of visual diversity in the neighborhood.

Houses range from approximately 1,200 to 2,500 square feet, but their actual size is often concealed or amplified by their siting and design.

The form and arrangement of primary volumes is most clearly visible on corner lots. As a result, the massing of most houses is concealed from the street.

For this reason, original plans and elevations are used to illustrate this chapter instead of photographs.

The Crews House illustrates the most simple composition of primary volumes in Arapaho Hills.

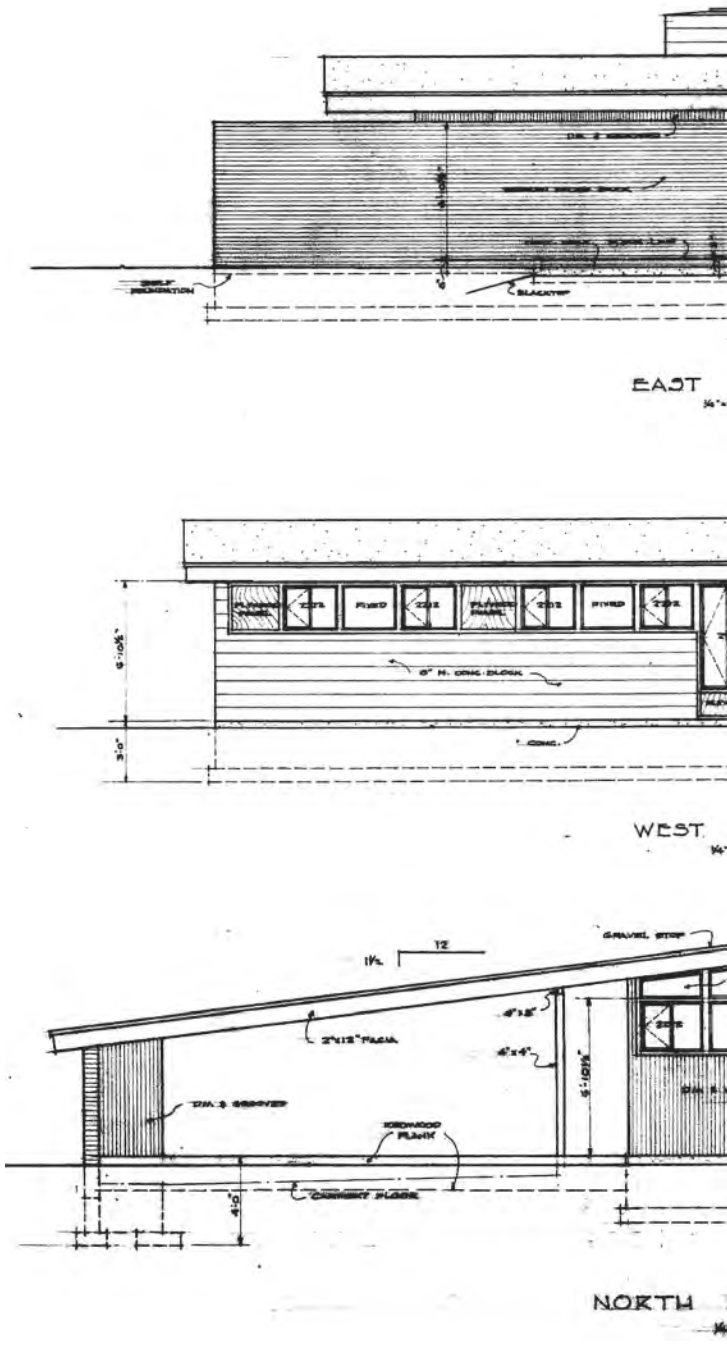
It is a one-level house located on a flat lot facing Lowell to the east.

The body of the house is a single enclosed rectangular form.

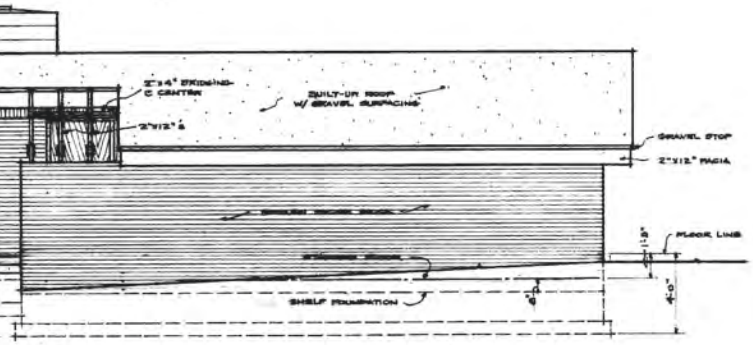
An open carport is positioned perpendicular to the east elevation of house, the entrance facing south. It has since been converted to an enclosed garage.

On the foundation plan, the open and closed nature of the two volumes and the relationship between them is clearly visible.

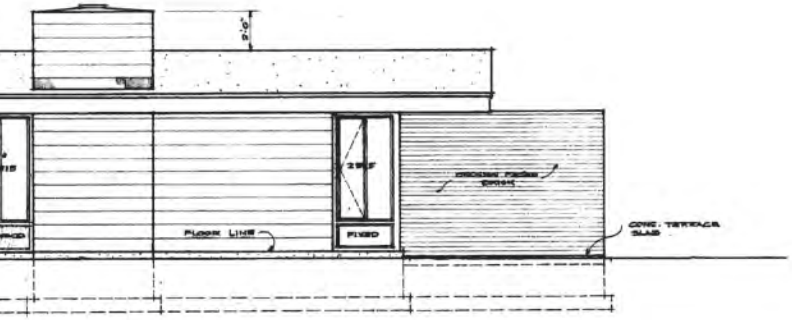
In other houses, the number of primary volumes increases and the manner in which they're combined becomes more complex.



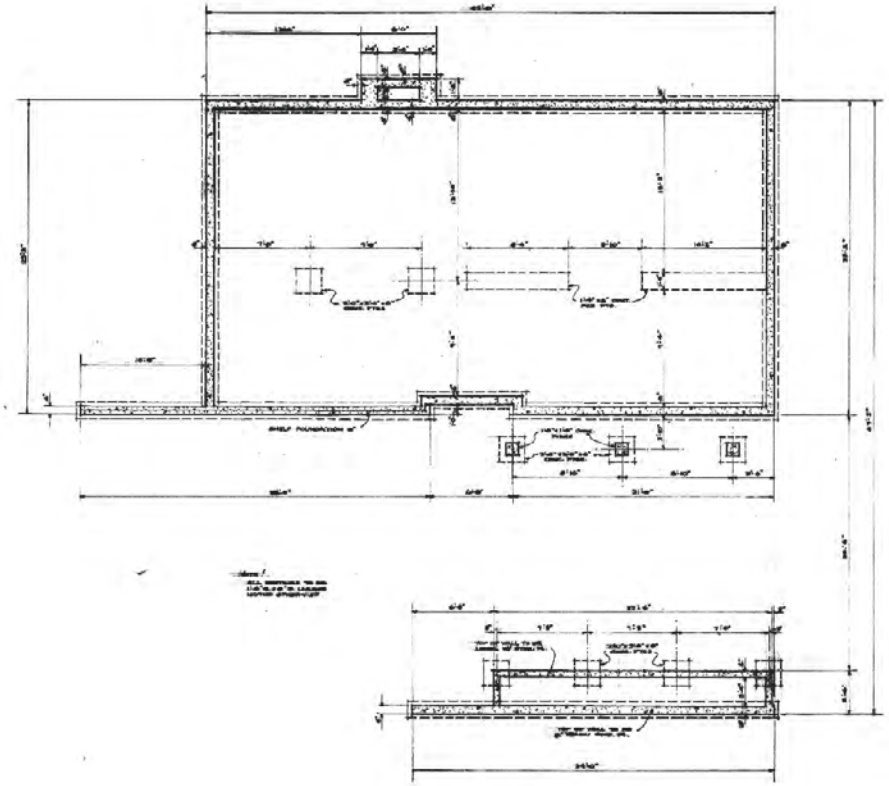

*Bruce Sutherland's architectural design for 5375 South Lowell Boulevard dated March 9, 1957. Drawings courtesy the Arapaho Hills Archive.*



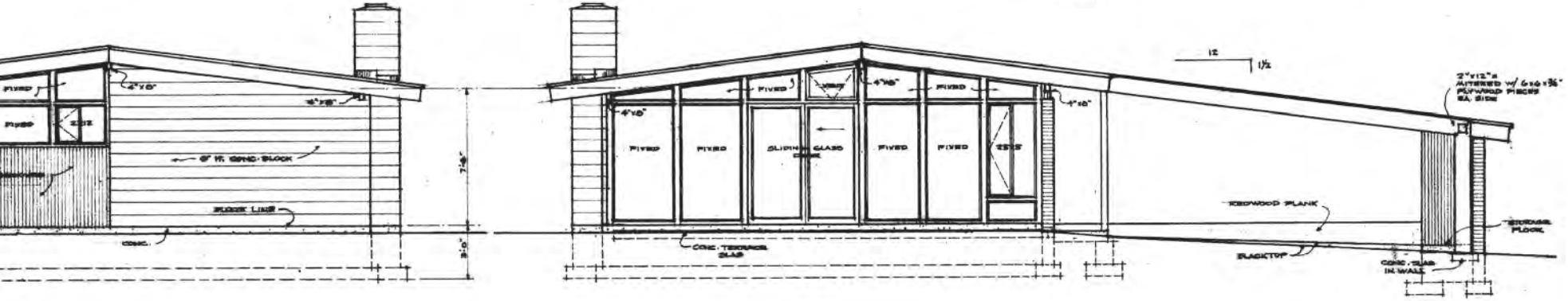

ELEVATION




ELEVATION



FOUNDATION PLAN




ELEVATION

SOUTH ELEVATION

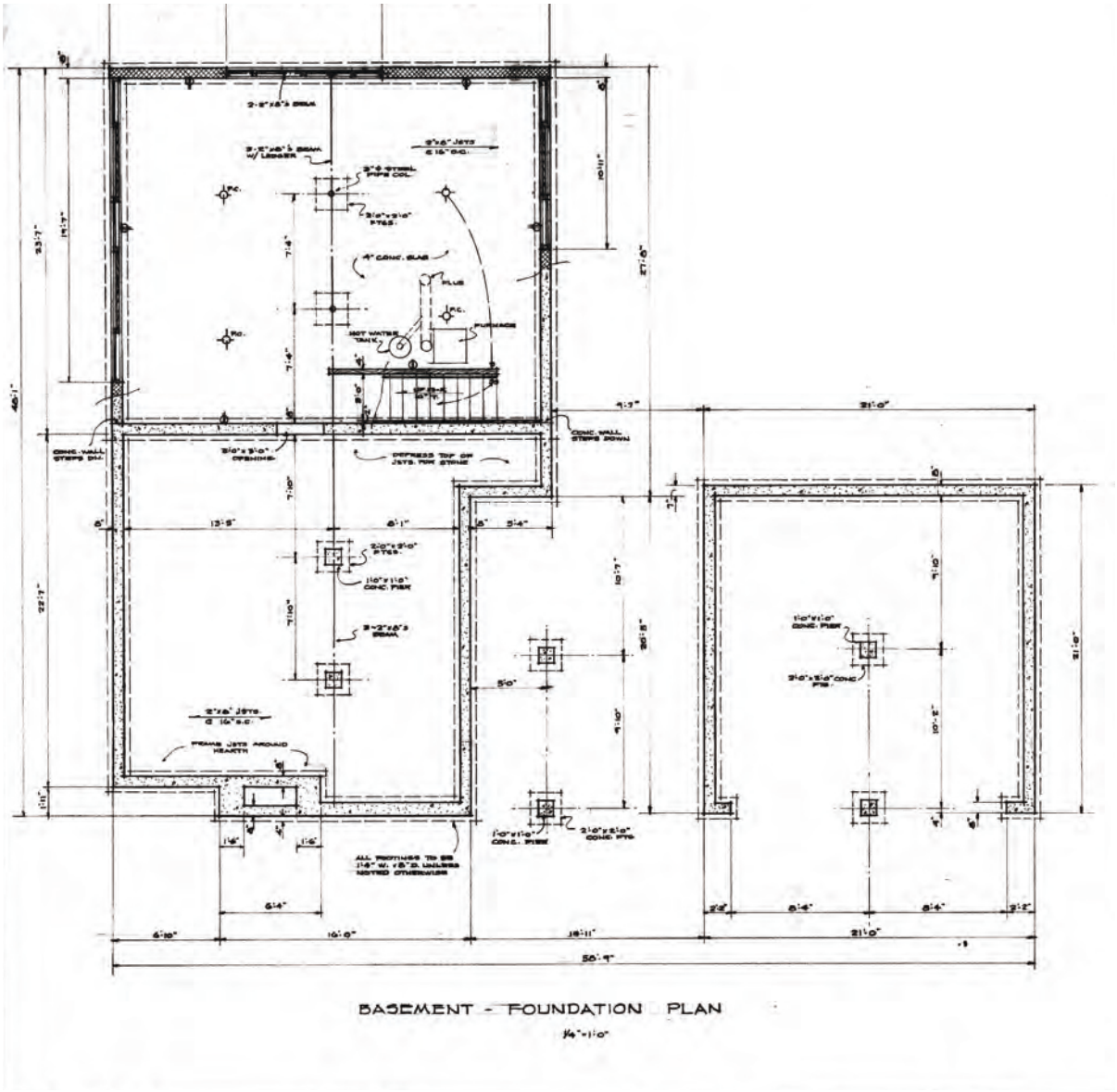
From the street, the Withrow House appears to be a single long, rectangular volume.

The plans, however, reveal five perpendicular volumes, four closed and one open.

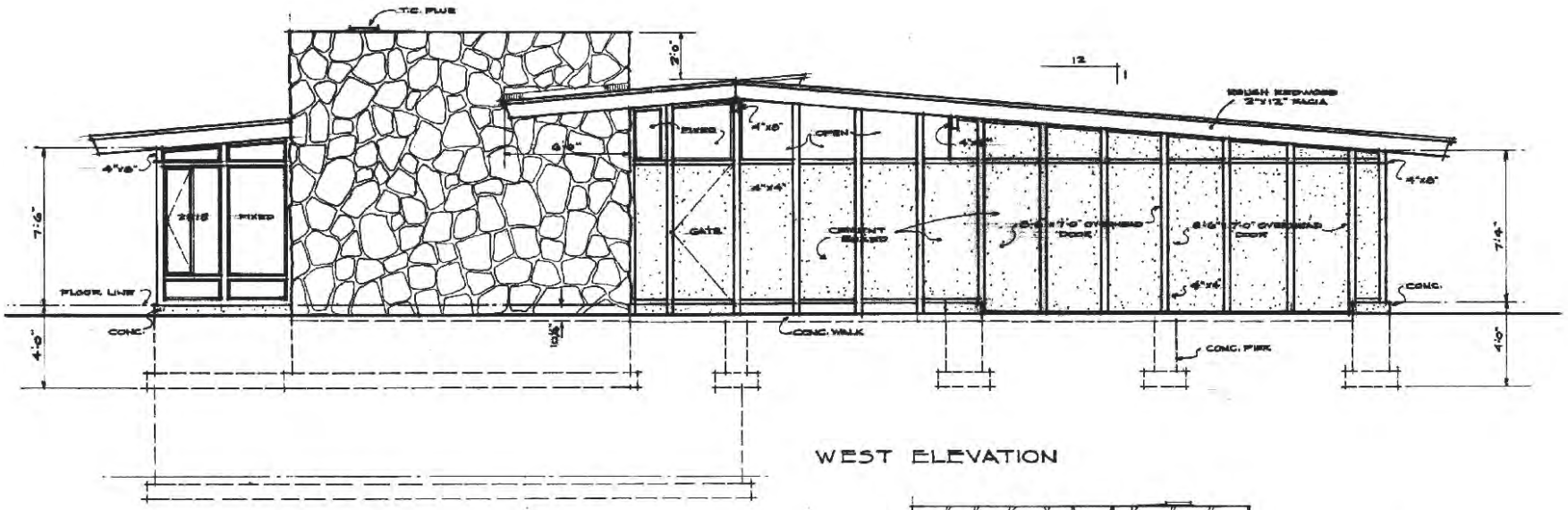
Two volumes are stacked to the rear of the lot, the lower volume partially below grade.

In front, facing west on Manitou, is a third house volume and garage, both positioned level with upper volume to the rear.

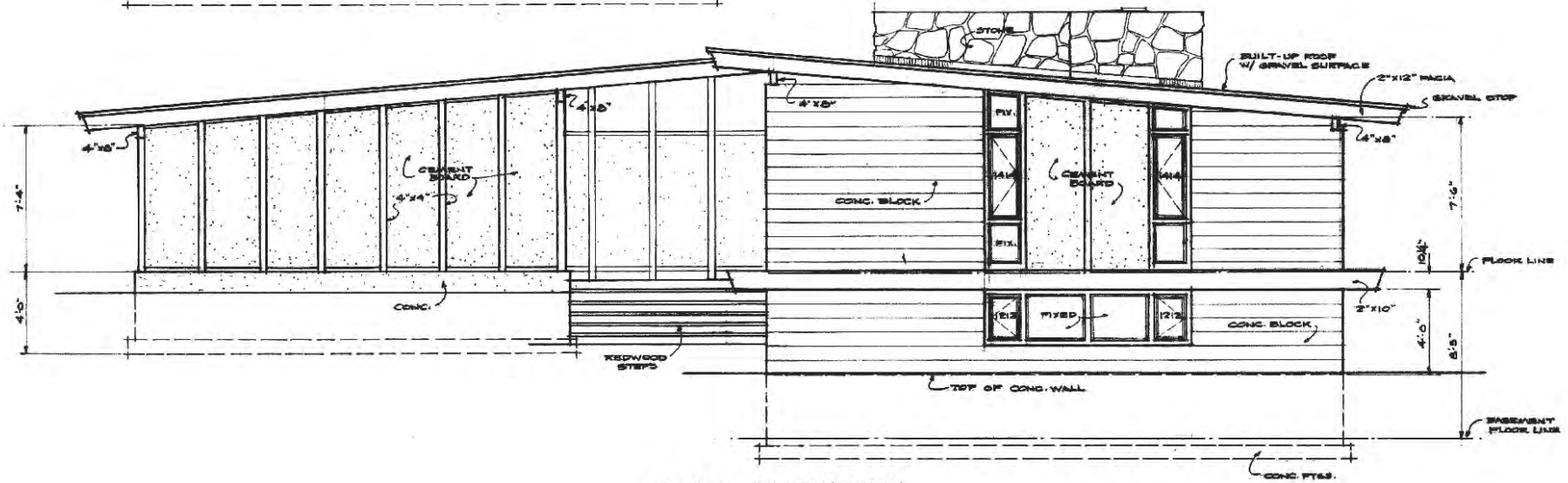
Between the house and garage is a breezeway. Open to the back yard and screened facing the street, it serves as a formal entrance court.



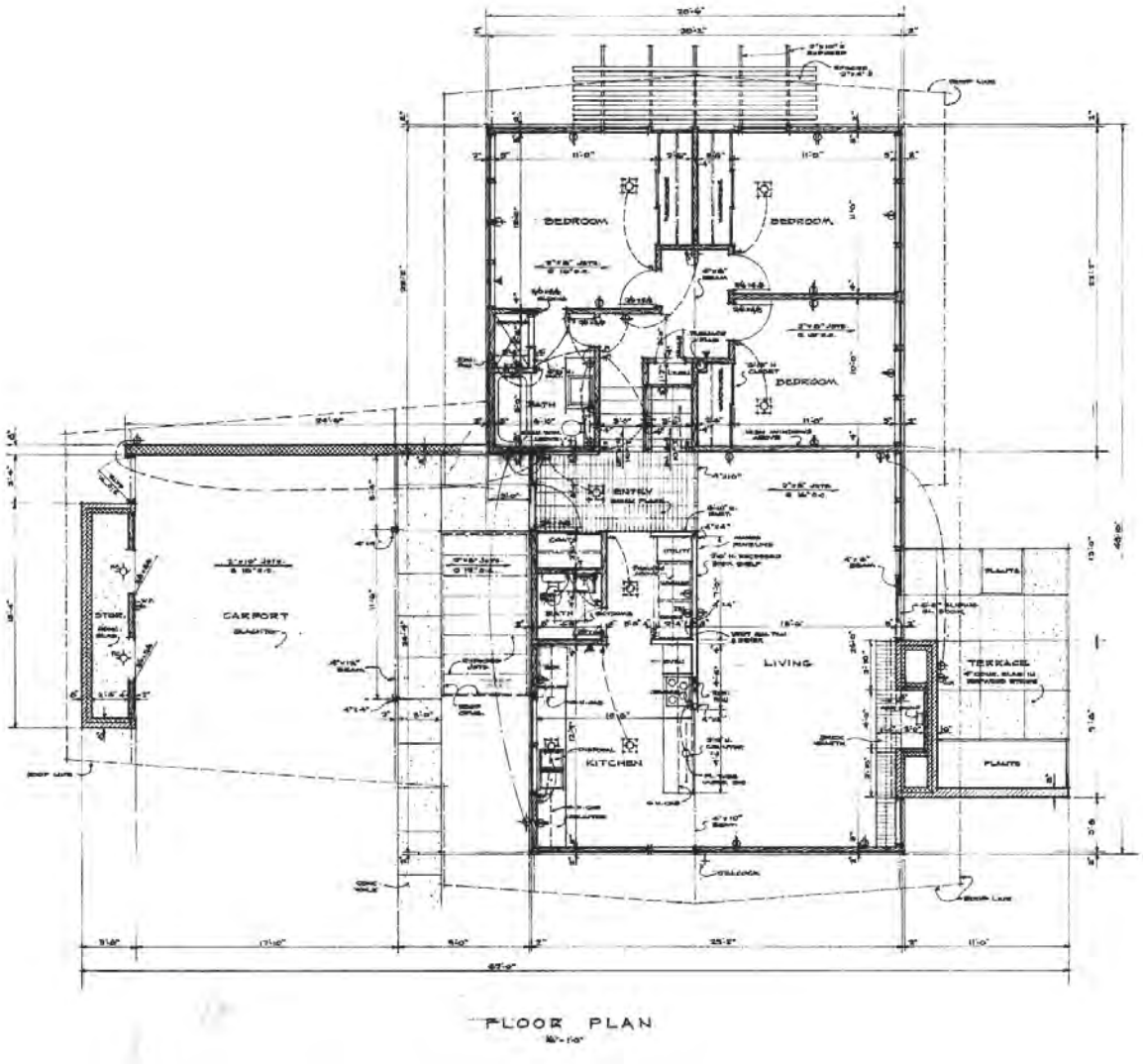

*Bruce Sutherland's architectural design for 5460 South Manitou Road dated October 15, 1957. Drawings courtesy the Arapaho Hills Archive.*




WEST ELEVATION




EAST ELEVATION




The Winter House is composed of four perpendicular primary volumes, three closed and one open.

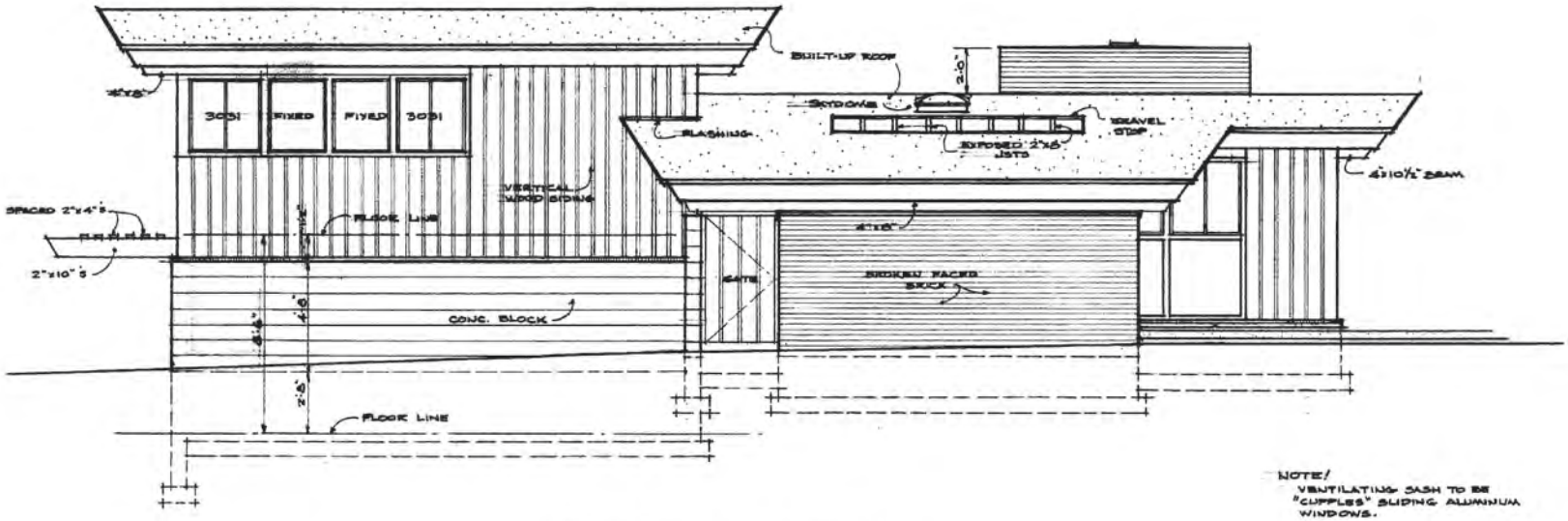
To the east, toward the rear of the lot, are two stacked volumes, the lower one set partially below grade.

To the west is a single volume facing Manitou. This volume is positioned between the upper and lower levels to the rear, creating a tri-level house.

From the street, the upper stacked volume is partially visible to the rear.

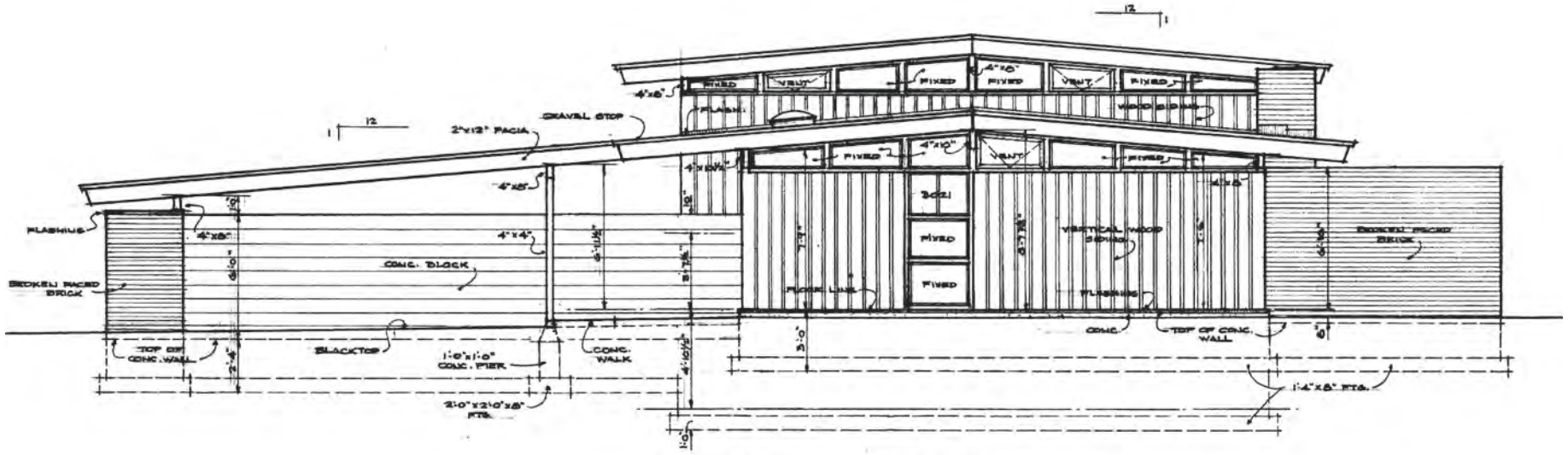
To the north is an open volume, a two-car carport.

*Bruce Sutherland's architectural design for 5380 South Manitou Road dated April 28, 1958. Drawings courtesy the Arapaho Hills Archive.*




NORTH ELEVATION

1/4"=1'0"




WEST ELEVATION

1/4"=1'0"

The Dupy House sits above the street on the west side of Manitou. The lot rises to the west and north of the driveway.

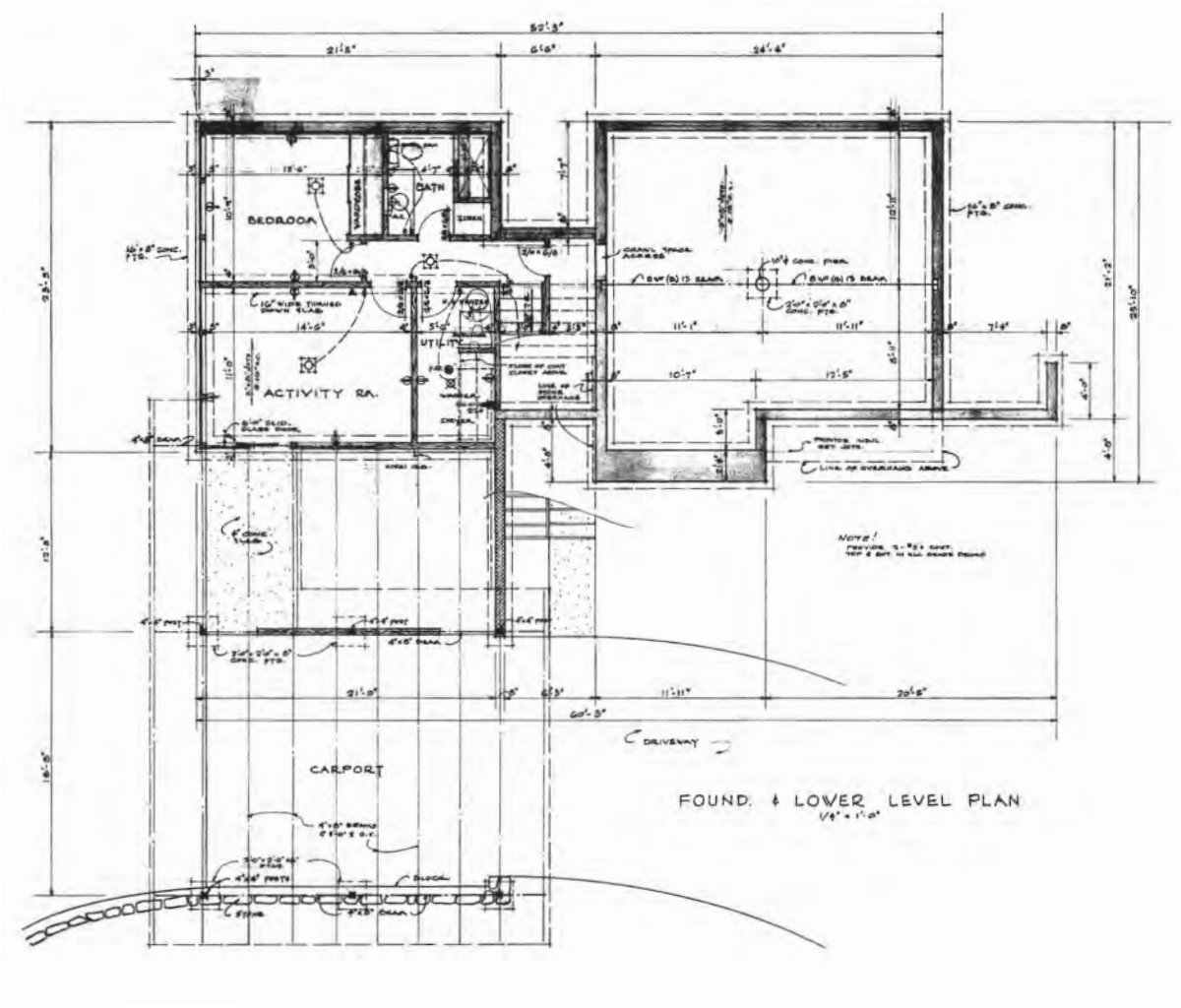
Five volumes form the body of the house, three closed, and two open.

Two volumes are stacked to the south. Level with the top volume, a single volume appears to the north. Between them, a small, narrow two-story volume forms the main entryway and central stair hall of the house.

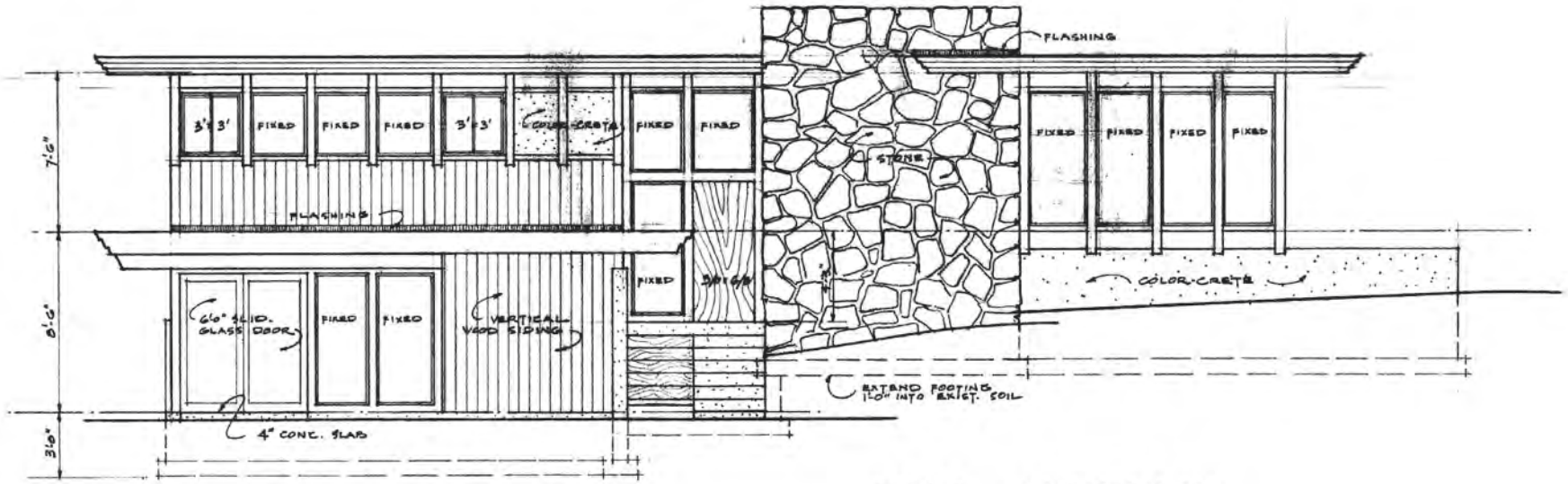
Level with the lower volume of the house are an open carport and courtyard.

The carport, now converted to a garage, was originally open to the north.

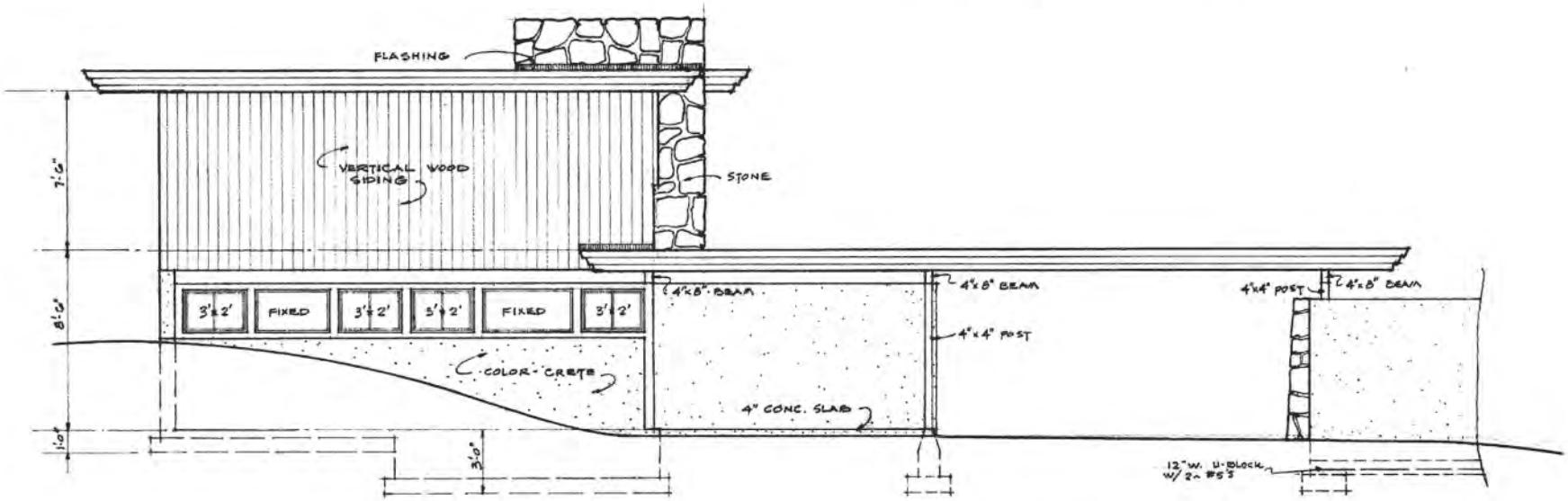
The courtyard, now enclosed, was open to the south side of the yard.



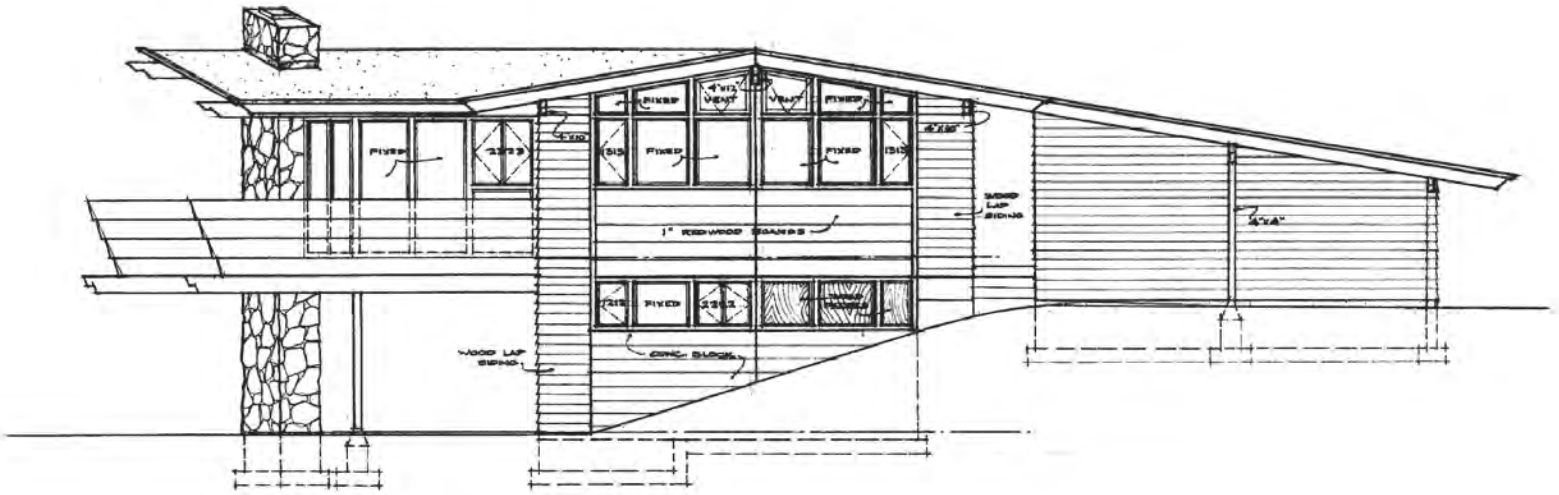

*Bruce Sutherland's architectural design for 5455 South Manitou Road dated March 26, 1962. Drawings courtesy the Arapaho Hills Archive.*




EAST ELEVATION
1/4" = 1'-0"

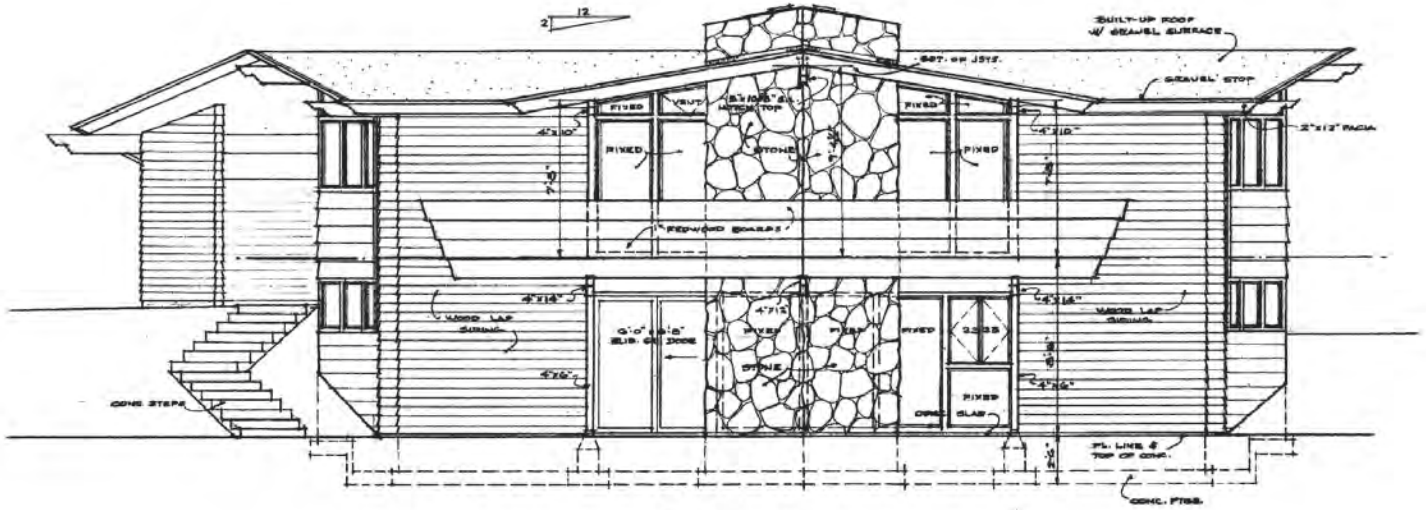



SOUTH ELEVATION
1/4" = 1'-0"




NORTH ELEVATION

1/4" = 1'-0"




EAST ELEVATION

1/4" = 1'-0"

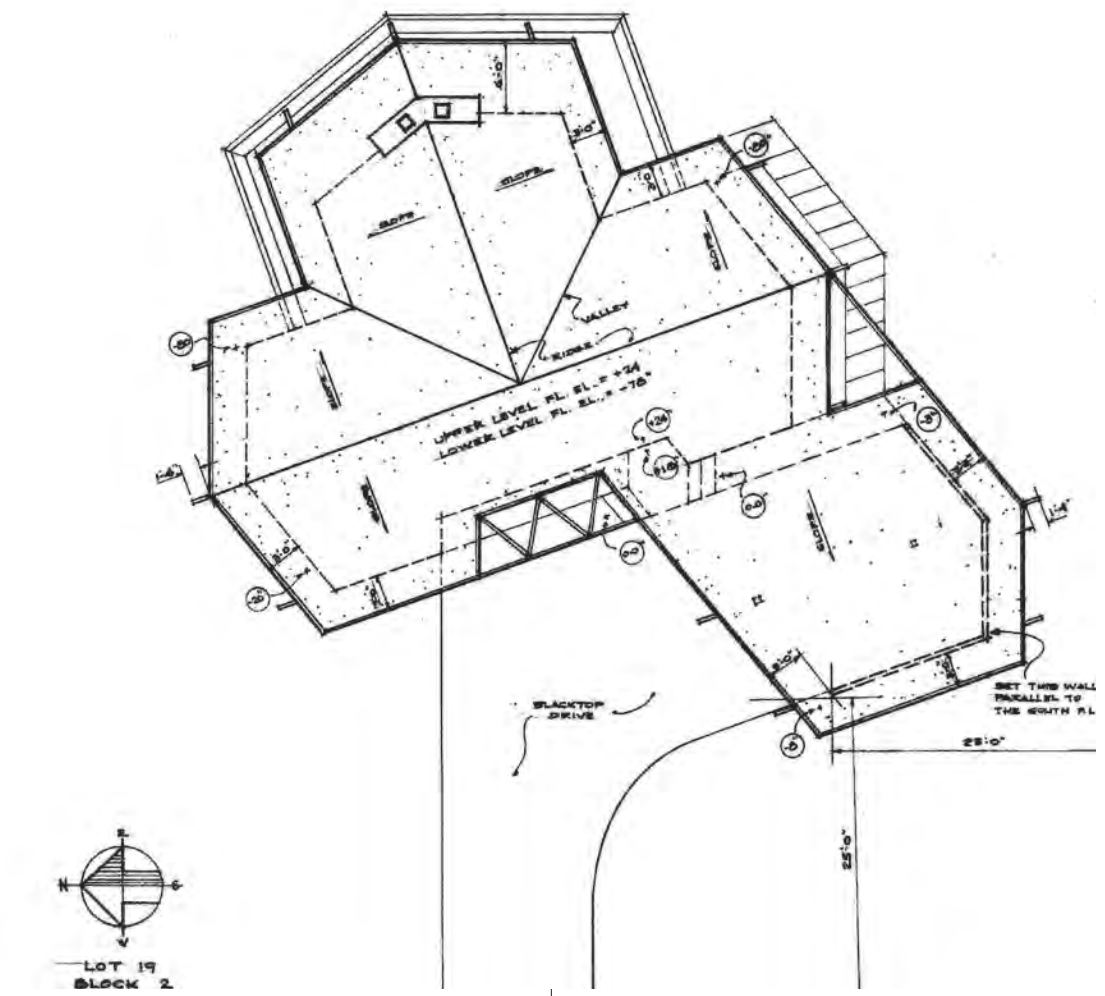
The Van Dalebor House consists of five eccentric polygonal volumes, three closed and two open.

The west section of the house, toward the street, is formed by two stacked polygonal volumes, the lower volume partially below grade.

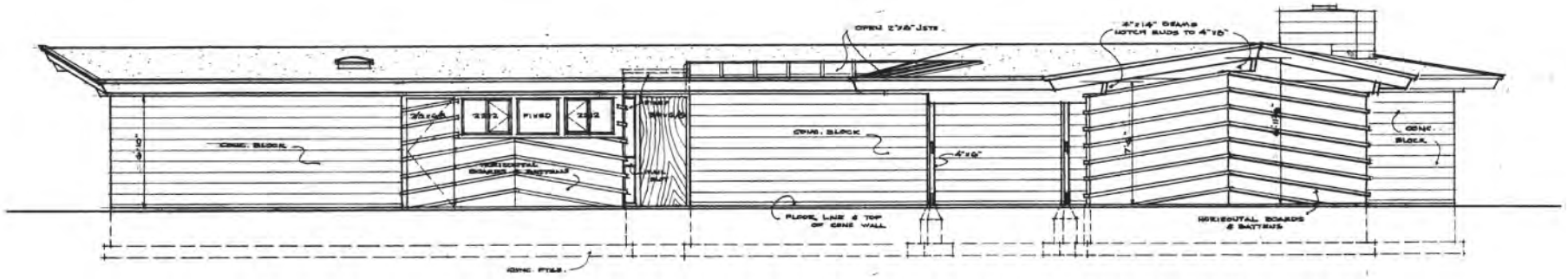
A second pair of volumes, set perpendicular to main body of the house, are stacked to the rear. The upper volume is closed, forming a continuation of the living space at the upper level of the house.

The lower volume is open, forming an patio around the chimney level with the back yard.

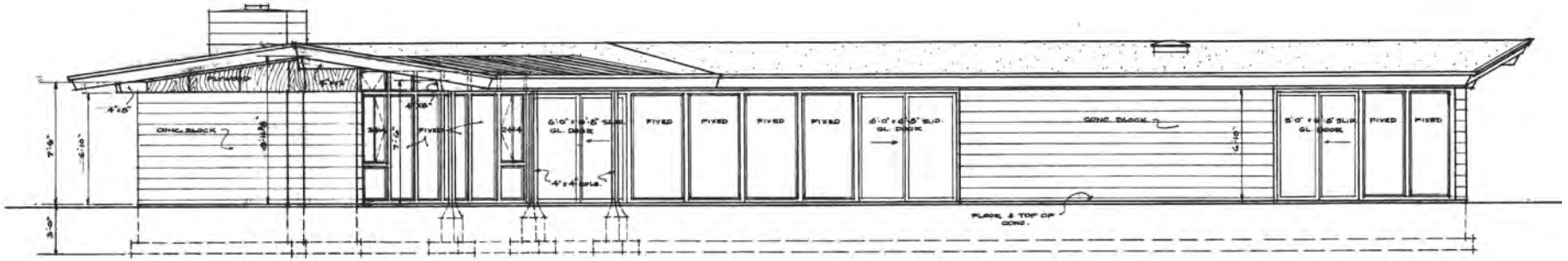
Facing the street, positioned at an angle to the main body of the house, is an open volume that serves as a two-car carport.



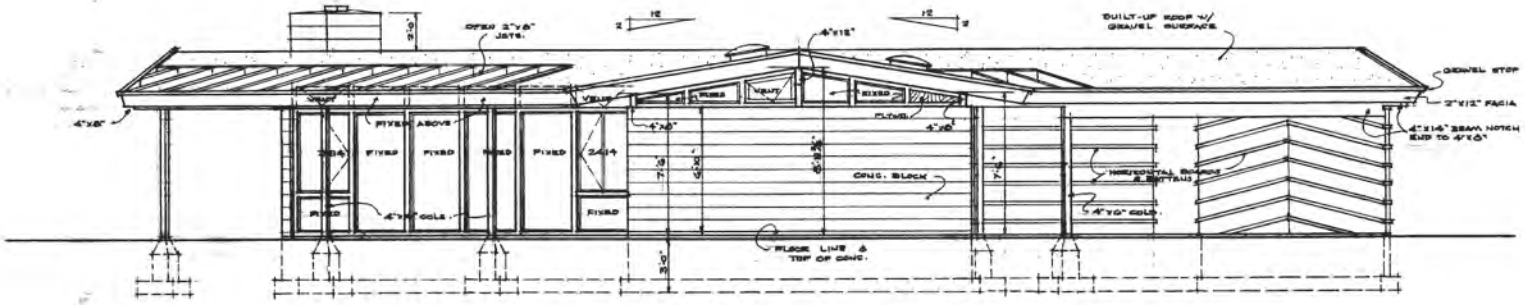

*Bruce Sutherland's architectural design for 5420 South Mohawk Road dated March 12, 1960. Drawings courtesy the Arapaho Hills Archive.*



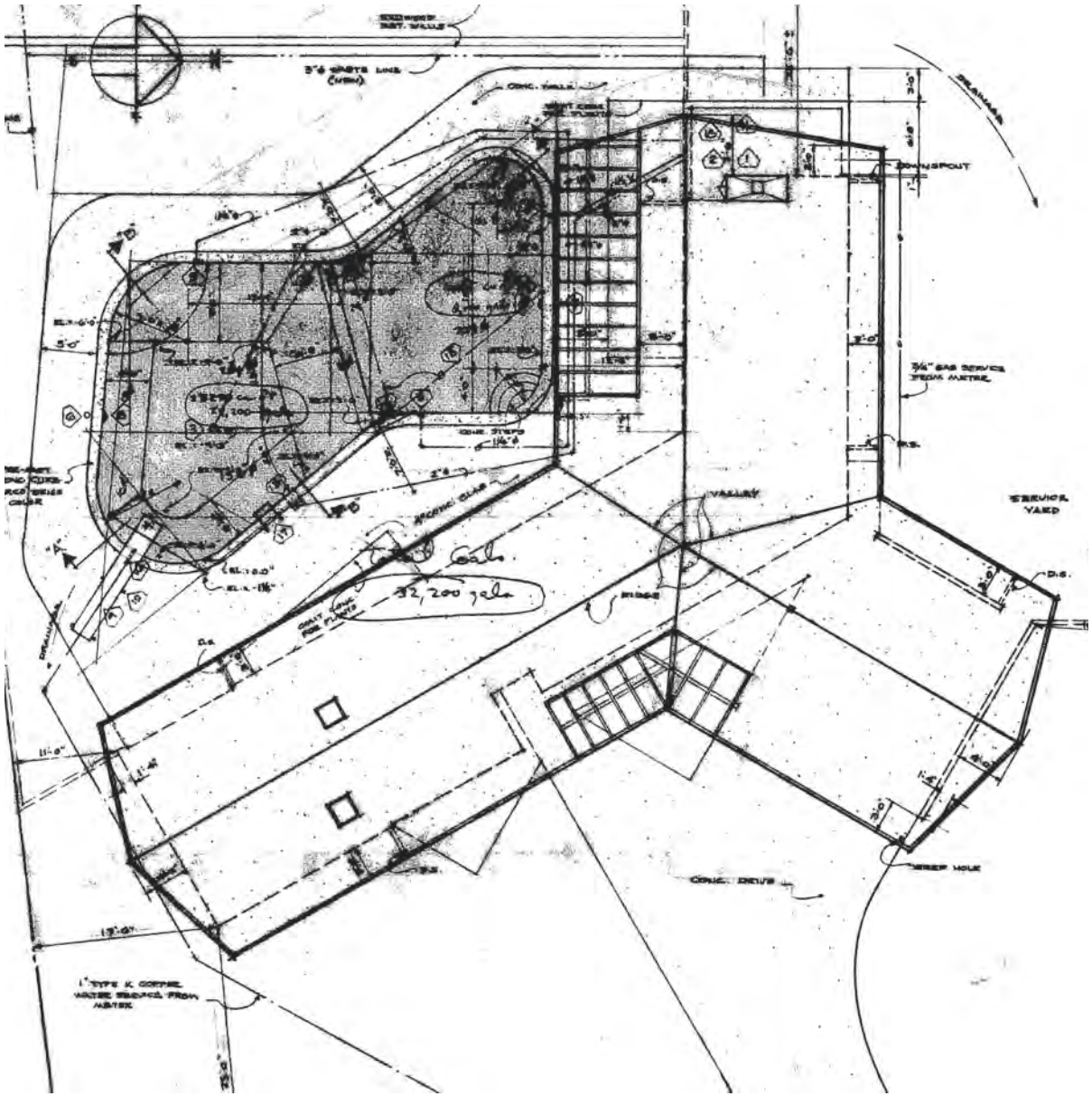

NORTH - EAST ELEVATION
1/4"=1'-0"




SOUTH - WEST ELEVATION
1/4"=1'-0"




SOUTH - EAST ELEVATION
1/4"=1'-0"




The Nyman House is composed of three rectangular closed volumes joined at 45 degree angles.

The house is a single level.

Two angled volumes form the body of the house. The back yard between them originally featured an in-ground pool.

The third volume, positioned to the northeast, serves as the garage.

Adjacent to the driveway, the angled volumes of the house and garage form a small open entry courtyard.

*Bruce Sutherland's architectural design for 5475 South Mohawk Road dated May 24, 1960. Drawings courtesy the Arapaho Hills Archive.*

**SECONDARY VOLUMES**
Smaller volumes are used to add more dimensionality and visual interest to the primary volumes of a house.

These include prominent roof fascia, chimneys, balconies and planters boxes that are rectangular in form.

Secondary volumes are largely horizontal in orientation.

The number of secondary volumes increases with the size and complexity of the house.

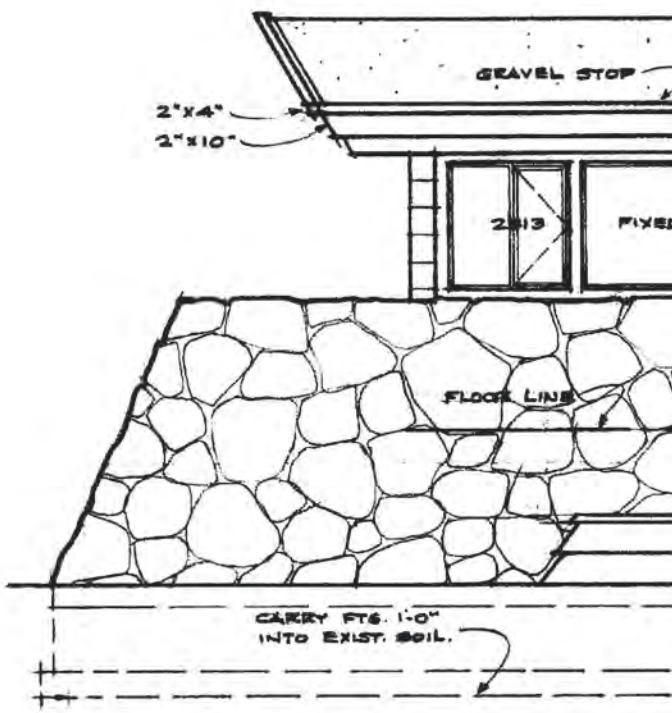
The Edds House, located on a prominent corner at Chimayo and Mohawk, presents a highly visible example of secondary volumes.

A deep balcony wraps the east and north elevation of projecting primary volume. The angled balcony fascia, clad in redwood lapboard, also extends around the south elevation.

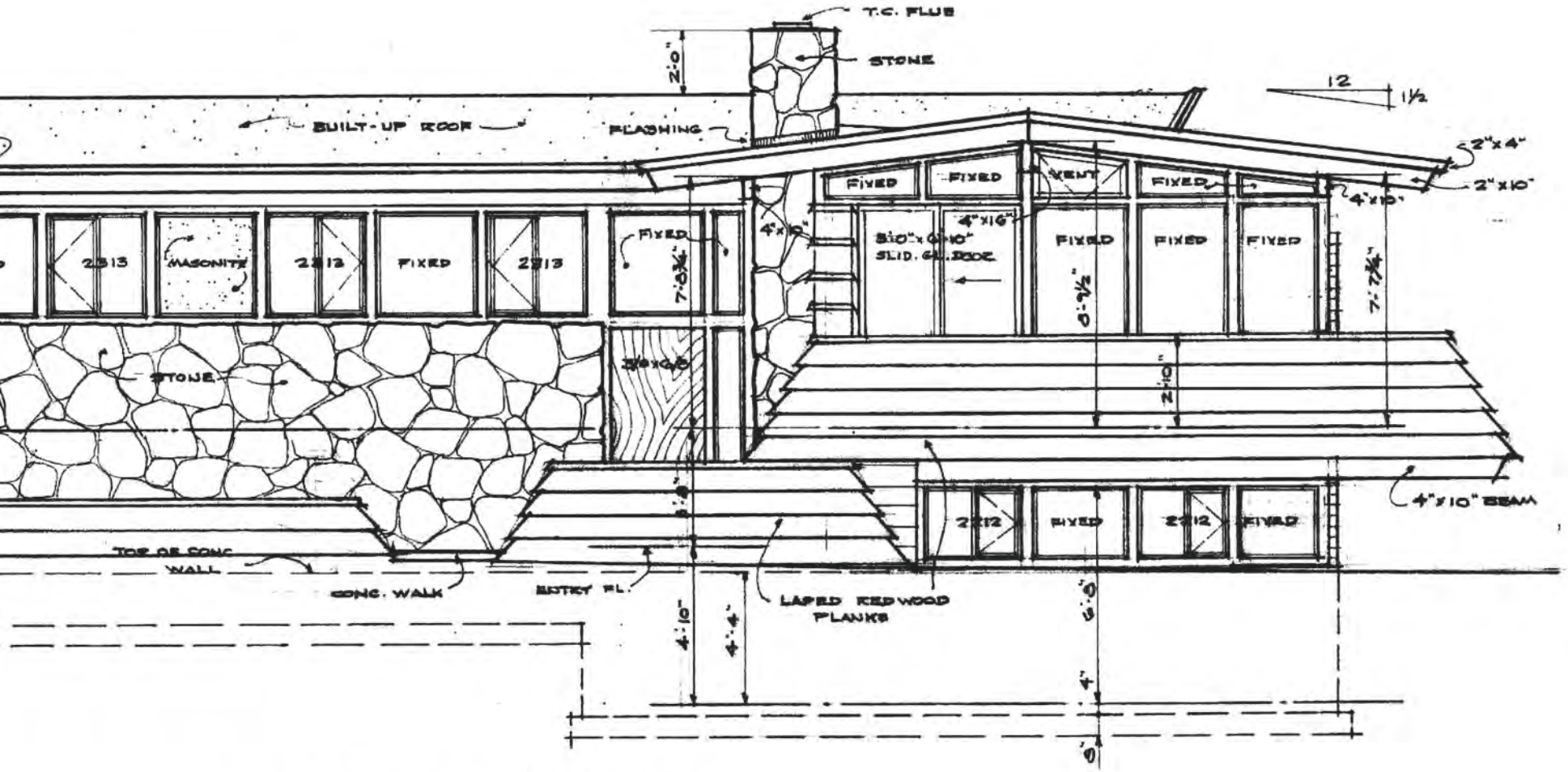
Two planter boxes display the same fascia as the balcony.

A massive rhyolite masonry chimney rises perpendicular to the main entrance.

The prominent angled roof fascia also serves as a secondary volume.




*Bruce Sutherland's architectural design for 5355 South Mohawk Road dated December 9, 1959. Drawing courtesy the Arapaho Hills Archive.*




EAST ELEVATION

¼"=1'-0"

Secondary volumes add complexity and interest to the primary volumes that form the body of the Edds House.

1 A large slab chimney is positioned perpendicular to the front entrance of the house, its vertical form moderated by the overlapping horizontal roof fascia.

2 The massive balcony dominates most views of the house from the street.

3 The angled and faceted roof fascia also visually functions as a secondary volume.

4 Across the face of the house, a low redwood planter box is detailed to match the balcony fascia. A similar lost planter box once defined a front entry court.

5 The balcony projects out into the landscape surrounding the house.







3
5355 SMoR


4
5355 SMoR


5
5355 SMoR







Planter boxes are an important secondary volume. This angled wood planter box wraps around two elevations of the house, terminating at the front entry court at left.

A simple rectangular planter box of red brick masonry extends beyond the face of the house into the landscape. Its placement emphasizes the location of the front entry door to the right.




A rhyolite masonry planter carries the corner column of this carport roof.




Concrete block forms a retaining wall and planter across the face of this open carport.


3895 WCR


5405 SMoR

Chimneys are another important secondary volume. These simple slab chimneys of red and gray brick rise adjacent to the wall.

Chimneys interrelate with roof planes in a variety of ways. Here the overlapping fascia moderates the vertical thrust of the chimneys.


5460 SMaR

A massive rectangular stone masonry chimney is the focal point of this house.

At left, the roof plane terminates at the chimney. At right, it partially overlaps onto its face.




3650 WCR

This rhyolite chimney wall sits entirely in front of the roof plane. Behind, perpendicular sidelights appear adjacent to the front entry.



3805 WCR

The rhyolite masonry of this chimney stops short of the roof line. A round concrete flue rises above it, in front of an inset window composition and behind the roof fascia.



5455 SMoR

Here, the relationship between the secondary chimney volume and the roof and wall planes of the house are visible.

At left, the wall is set behind the chimney, where the roof plane terminates. At right, the wall is flush with the chimney and the roofline extends partially onto its face.


5435 SMoR


3685 WCR

A row of exposed aggregate panels are joined to form the chimney wall of this house. The angled roof line extends across it.

While many secondary chimney volumes are slabs, others are large rectangular masses displayed at the corner of houses.


5490 SMoR

The roof line overlaps onto the face of both side of this massive chimney. At left, the roof forms a shallow porch over the front entrance. At right, it shelters a window composition.




On houses of multiple levels, chimneys can rise to two stories in height.




A balcony fascia atop the garage and a massive chimney define this home.

The roof and stepped balcony fascia both partially extend onto the face of the chimney.




This projecting balcony wraps around three sides of this angled two-story chimney in an east-facing back yard.


5440 SMaR

A chimney with overlapping roof fascia and planter box form defining features of this primary elevation.



3775 WCR

The cantilevered balcony extends around the corner of the house and terminates on the face of the chimney.

The chimney, planter box and balcony all form secondary volumes of the house.

**PLANES**
In the same way that volumes are massed to form the body of a house, roof, wall and floor planes are joined to create the volumes themselves.

In conventional homes of the period, walls and floors join at right angles and high-pitch roofs extend to form shallow eaves.

In Arapaho Hills, flat or low-pitch roofs extend far beyond the walls below and walls project beyond the body of the house to form garden walls. Extended floor planes create balconies and sunscreens.

The planes themselves are distinguished by their shape, contour and depth. They may be rectangular, trapezoidal or polygonal, flat or curved, thick or thin, open or closed.

Planes also join in a variety of compositions that interrelate with primary and secondary volumes.

The Schaefle House rises above the street on the east side of Manitou.

It displays two distinct roof planes, the flat roof of the house and the folded-plate roof of the carport.

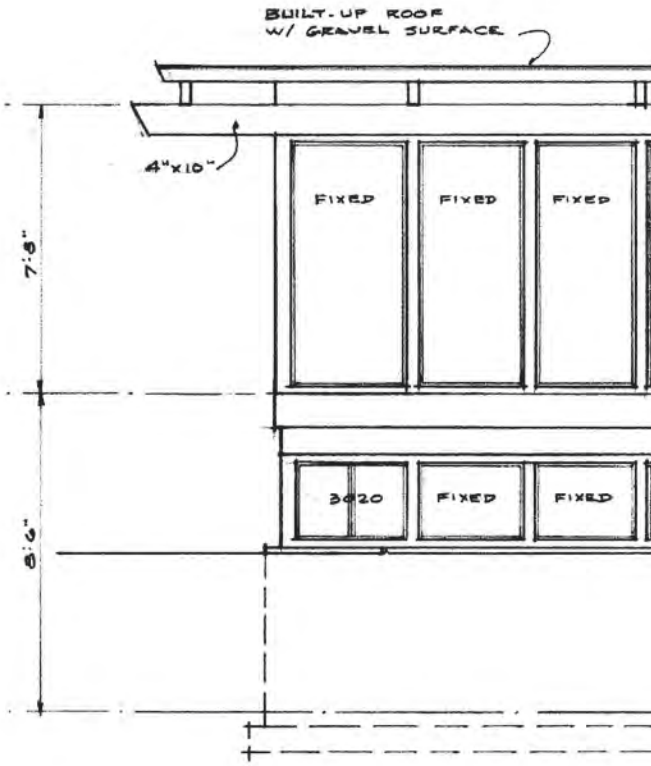
The flat roof plane of the house partially extends onto the face of the chimney.

Both roofs extend beyond the walls below to form eaves of varying depth.

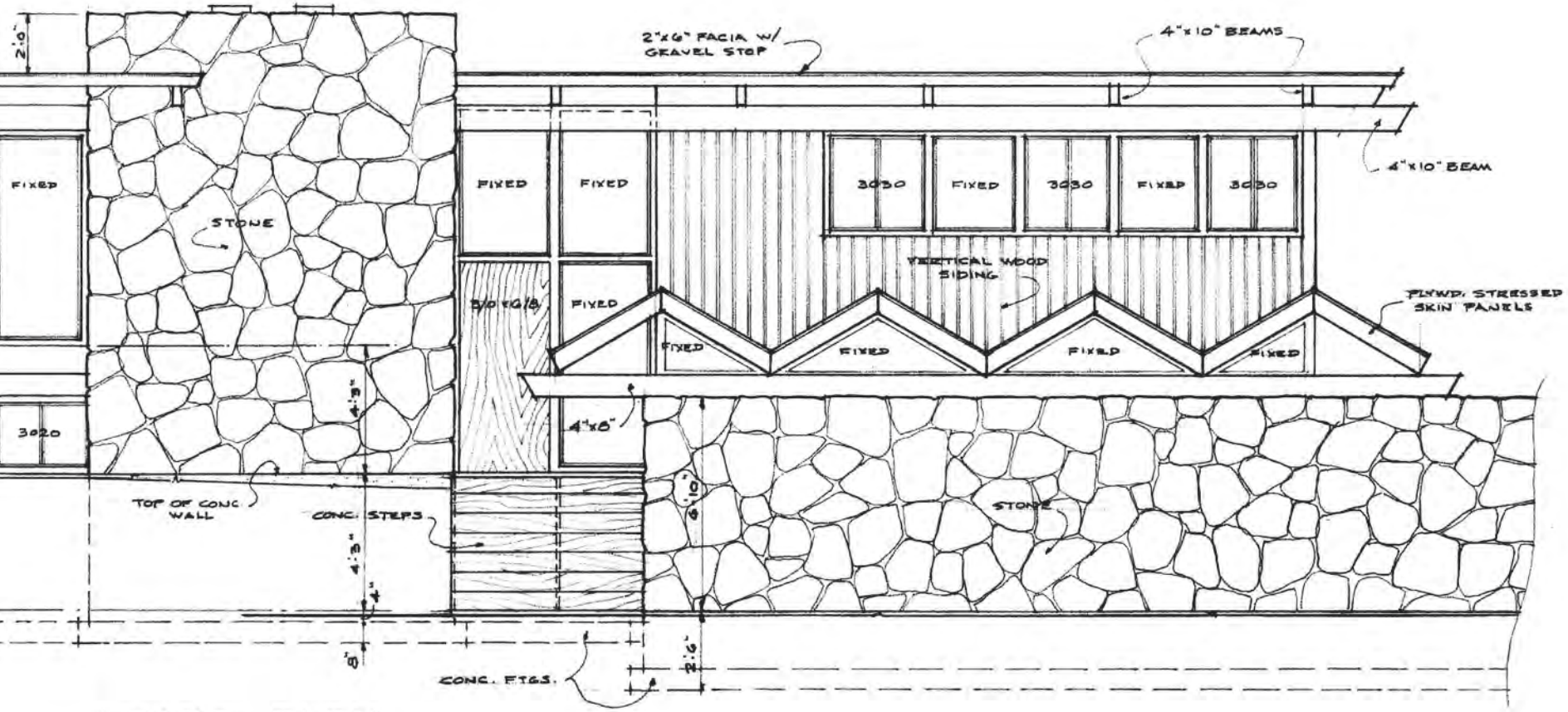
The front walls of the house are recessed behind the massive chimney wall.

The front wall of the carport is positioned parallel to the house at the grade of the drive. The curving line at the end of the wall at right indicates that it was originally intended extend across the lot line to form a feature of the house to the north.

Instead, the house was the last to be designed and built by Sutherland and Mannon in Arapaho Hills.




*Bruce Sutherland's architectural design for 5435 South Manitou Road dated February 14, 1963. Drawing courtesy the Arapaho Hills Archive.*




EAST ELEV.

1/4" = 1'-0"

In Arapaho Hills, shed roofs, formed by a single angled plane, appear along with symmetrical and asymmetrical front- and side-gable roofs. Both these angled roof planes are low in pitch, reinforcing the overall horizontality of the neighborhood.

The Schaefle House features the neighborhood's most simple roof plane, a single, horizontal flat roof. The carport features the most complex roof plane, a folded plate roof.

1 The flat roof plane extends over the southeast corner of the Schaefle house. A shallow overhang extends over the largely windowless south wall. The deeper overhang at right begins to shade the full-height east-facing windows at mid-day.

2 The folded-plate roof of the carport is held above the masonry wall below by wood columns.

3 A open sunscreen or arbor projects between the first and second level of the house.

4 The folded plate roof of the carport provides a lively contrast to the flat roof of the house.

5 The carport roof engages the front wall of the house at the recessed entryway.







3
5435 SMaR


4
5435
5435 SMaR


5
5435
5435 SMaR


5400 SMaR


5425 SLB


5425 SLB


5460 SMoR

This front-gable roof has the peak of the roof facing the street.

It's asymmetrical, with two roof planes of differing lengths joined at the peak.

The roof accentuates the long horizontal form of the house.

This house has a symmetrical front-gable roof. Both sides of the roof are equal in length. The peak appears at the center of the house.

The garage has a shed roof, its highest point aligned with the peak of the gable roof behind. Both roofs are pitched at the same angle.

Here, with the shed roof pitched at a lower angle and set asymmetrically on the face of the house, the two roof forms are more distinct.


3890 WAR

A long shed roof and flat roof are combined on these two, perpendicular volumes.


3685 WCR


5355 SLB

This house features two opposing shed roofs, the top roof extending to overlap the lower roof.

The symmetrical front-gable roof of the house sits above and beside the flat carport roof.


5425 SMoR


5465 SLB

A single flat roof appears on this house.

Two distinct roof forms overlap on this house and carport. The roof at right appears to hover over the body of the house.


5395 SMoR

The varied roof planes extend beyond the wall planes to shelter staircases, walkways and entrances, as seen here.


5395 SLB

This shed roof extends over the side wall of the carport to shelter the walkway to the front entrance.



3905 SBA

The peak of this front-gable roof projects beyond the body of the house to form a porch cover for the entrance.


5390 SMoR

Open roof planes also appear. This arbor is designed as an extension of the garage roof. It serves as a sunscreen for the patio below.


5450 SMoR

Where additional natural light is desired, like this deeply recessed entrance courtyard, the roof deck is removed. A pine has been trained through the opening.




A portion of this roof deck was removed to allow light to the window composition on the wall below.




Roof openings appear over this partially enclosed entry courtyard.




A thin metal column supports a cantilevered roof plane adjacent the primary entrance to the house.




Front and side wall planes often project beyond adjacent walls into the landscape.




This brick masonry wall extends beyond the house to shelter a patio behind.







Such walls amplify the scale of the houses. Careful examination is required to see that the house does not extend the full length of the wall, but stops short at the exposed beam above.

Here a stone masonry fireplace wall extends into the garden.




In other cases, walls extend to shelter inset windows or entrances.

This wall and roof shelter a window and entrance composition that extends the length of the south wall.




Here a projecting wall separates and screens a service entrance from the main entrance to the house. The roof acts as a porch cover for entrance.




The roof and stone masonry wall extend to shelter a pair of garage doors.



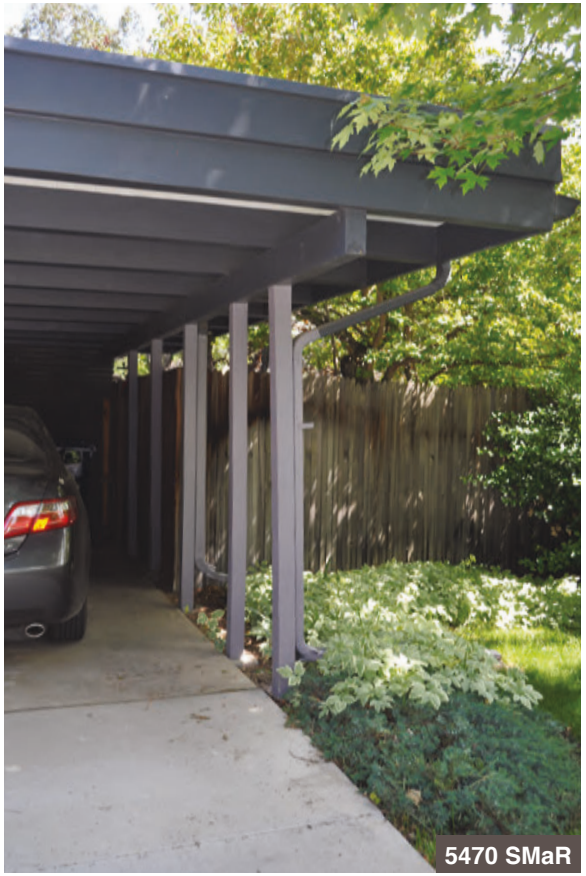

This wall and roof both extend beyond the body of the house. The end of the wall and the fascia of the roof are angled in opposition to each other, enlivening the overall horizontality of the house.




A single exterior wall extends the length of the house, across an open breezeway, and onto the face of the garage, creating the illusion of a much larger dwelling.




The wall and roof plane project the same distance beyond the face of the house, creating more privacy and shelter.




On this carport, the roof plane projects over an open wall plane formed by a series of wood columns.




This roof plane projects beyond the side of the house, wrapping around the chimney and resting atop an extended masonry wall.


5420 SMaR

A free-standing brick masonry wall acts as a supporting column for the roof plane above and the open carport wall behind.


5480 SMaR

A similar wall plane of rhyolite carries the front corner of this carport roof while creating a private front entrance courtyard.




Projecting and overlapping roof and wall planes create complex compositions on many Arapaho Hills Houses.




Here the roof, wall and floor planes all project beyond the body of the house to form a semi-enclosed balcony with an eastern view.




Projecting walls sometimes serve utility purposes as well. This front wall extends beyond a recessed alcove that shelters the water meter.

**WINDOWS**

In Arapaho Hills, a variety of window components are combined to create larger window compositions that play a major role in the design and detailing of wall planes.

Depending on their design and placement, window compositions provide or restrict privacy, views, light and air circulation.

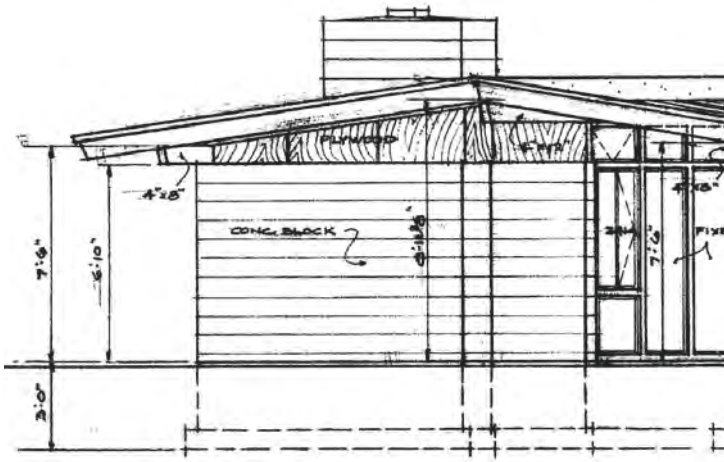
Window compositions are overwhelmingly horizontal in orientation, with occasional vertical accents.

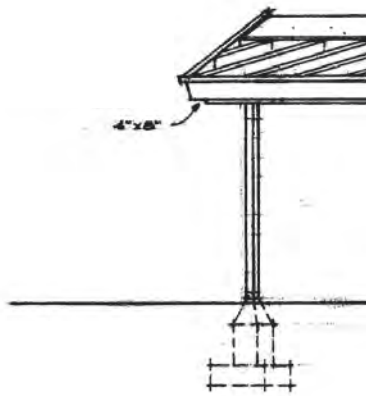
The Nyman House retains its original window components and compositions, illustrating key principles of window design in Arapaho Hills.

Window compositions respond to the roof form of the house, rising from horizontal sills to follow the angle of the low-pitch side-gable roof. On other elevations, windows form horizontal bands.

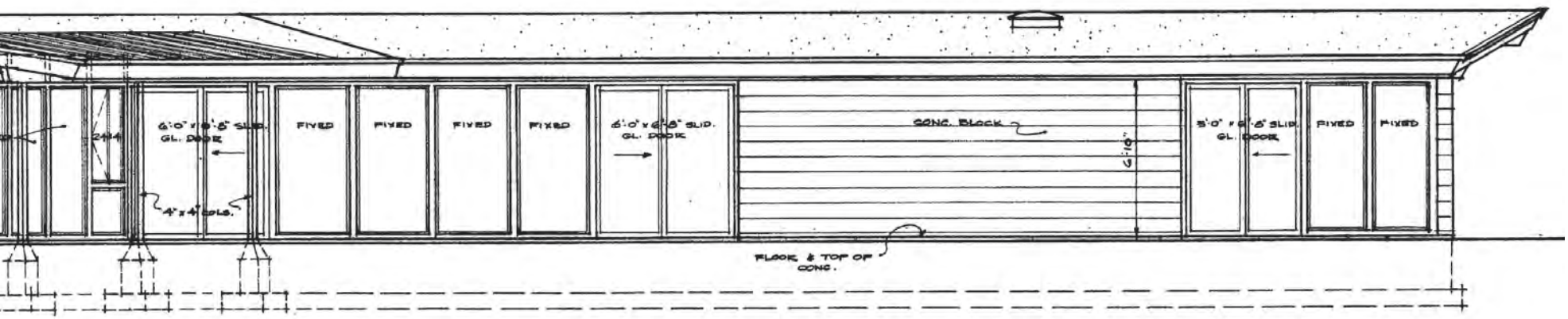
Windows positioned beneath deep eaves provide light and heat during the winter. In summer, when the sun is high in the sky, windows are shaded. Operable windows provide natural cross-ventilation.

On elevations visible from the street, windows rise above high sills to provide privacy. Facing private areas of the yards, full height windows provide light and expansive views.



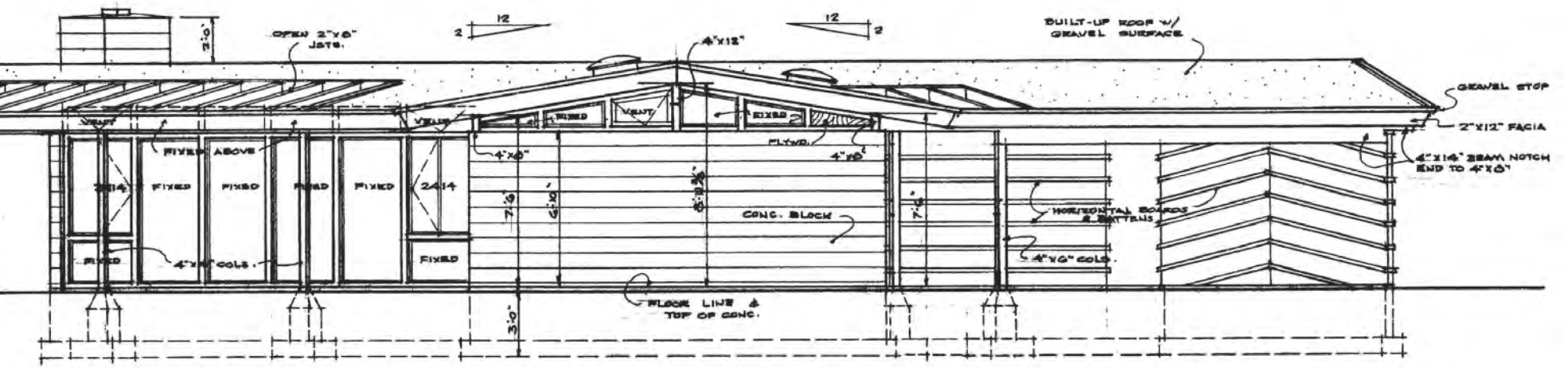



*Bruce Sutherland's architectural design for 5475 South Mohawk Road dated May 24, 1960. Drawings courtesy the Arapaho Hills Archive.*




SOUTH - WEST ELEVATION

1/4" = 1'-0"




SOUTH - EAST ELEVATION

1/4" = 1'-0"

Individual window components are proportioned and detailed to visually integrate into the larger compositions. The frames that carry the fixed and operable windows are consistent in width. Operable windows are distinguished by the inset sash and, in the case of hopper windows, exterior screens.

This consistency is integral to the overall rhythm and visual continuity of the window composition, the window plan of the entire house and neighborhood as a whole.

1 A large window composition extends around two rear elevations facing the private yard.

2 The south-facing elevation forms an entire wall of glass. Four vertical fixed panes are flanked by a pair of operable casement windows above a single fixed pane. Above, a fixed transom row is flanked by operable hopper windows.

3 This asymmetrical composition appears on the gable wall of the garage. It rises over a high sill to the angled roof line above.

4 Facing the street and entry court is this symmetrical horizontal composition, a fixed center window flanked by pairs of a casement and fixed window.










2
5475 SMoR


3650 WCR

This simple vertical composition is an operable casement above a spandrel panel.

*Casement* sash are hinged on the left or right and swing outward. They are opened and closed by cranking a metal handle located on the interior frame. A metal latch operates the window lock. They have detachable window screens that install on the inside of the frame.


5425 SMoR

Horizontal and vertical window compositions appear on houses with flat roofs and the secondary elevations of those with front- or side-gable roofs.

This horizontal row of windows extends across the face of the house between the extended roof beams.

At the chimney, a vertical window drops to the foundation line. Beyond the flue, the windows step out to align with the face of the chimney.


5390 SMoR

A horizontal window composition appears above a high sill, providing privacy to the rooms facing the street.

It includes fixed and operable casement windows and, below the exposed beams of the eaves, narrow blind windows.


5390 SMoR


3890 WAR

The same window composition extends around the corner of the house.

A row of operable awning windows is positioned within a masonry wall just below the roof line. Awning sash are hinged at the top and swing outward. Their hardware and interior screens resemble those of casements.







A long narrow window composition appears above a high masonry wall between exposed roof beams.

In the foreground of the photo below, a horizontal band of windows appears above a masonry wall. Above and behind, a narrow window composition appears beneath the overlapping opposing shed roof.




A horizontal band of fixed and operable windows appears on the interior wall of a carport.

Similar window compositions of varying heights appear in carports that shelter the main entrance to the house.




This corner window appears behind a projecting brick wall, flush with the adjacent wall of vertical wood siding.


3895 WCR

Spandrel panels are fixed solid panels of wood siding material that appear above, between or below vertically stacked windows.

These spandrel panels have a simple decorative geometric pattern.



5380 SMaR


3775 WCR

Spandrel panels appear below a row of windows within an open carport.

Here they appear between an upper band of windows and one just above grade, hidden behind the shrubbery.


5370 SMaR


5440 SMaR

This window composition is located on the side elevation of the house behind a massive chimney.

Louvers are panels with fixed, angled wood slats. They are backed by screens and hinged panels that open to the interior to allow air circulation without light.


5435 SMaR

A full-height window composition appears at the upper level, wrapping around to the side elevation.

At the lower level, just above grade, a long horizontal window composition completely wraps the southwest corner of the house.


5420 SMoR

This window composition follows the angle of the polygonal primary volume that forms the body of the house. Above, the side-gable roof extends to shelter the window.

The composition includes four fixed windows flanked by two operable casements. Above is a row of fixed windows with two operable hopper windows.

Vent or hopper sash are hinged at the bottom and swing inward. They are commonly wood with simple metal latches. Chains control the angle of the open sash. They have exterior screens.


5425 SLB

Blind windows are fixed solid panels of wood siding material that appear within horizontal window compositions.

This complex composition also includes fixed, casement and hopper windows. Facing busy Lowell, the lower row of windows have translucent glass; the upper glass is clear.

The composition wraps around the adjoining wall where two stacked casements appear, one behind the projecting masonry wall of the main elevation.


5455 SMoR

Three vertical full-height windows are recessed behind the chimney. A transom row rises into the low-pitch front-gable roof.

They are all fixed windows, a stationary frame of wood or metal fitted with clear or translucent glass.


5450 SMoR

This composition includes a full-height fixed vertical pane that rises to a row of windows below the low-pitch front-gable roof.


5455 SLB


3655 WCR

Glass block appears occasionally. Here it's inserted in the openings of a patterned concrete block.

Two full height windows flank a large panel of vertical siding. On either side, concrete block appears.




5455 SMoR

Open window frames are fixed window frames that are left open to permit air circulation. They appear above enclosed entries and breezeways.



5375 SLB

Sliding glass doors, though also serving as secondary entrances, are often incorporated into large full-height window compositions facing private areas of the yard.

**ENTRANCES**
Entrances play a major role in the design and detailing of wall planes.

They provide egress between indoor and outdoor spaces, control privacy and meet ventilation, lighting, service, delivery and utility needs.

Primary entrances are compositions of multiple components. They include a number of window components along with solid doors and accessories such as house numbers, lighting, mail and other delivery boxes.

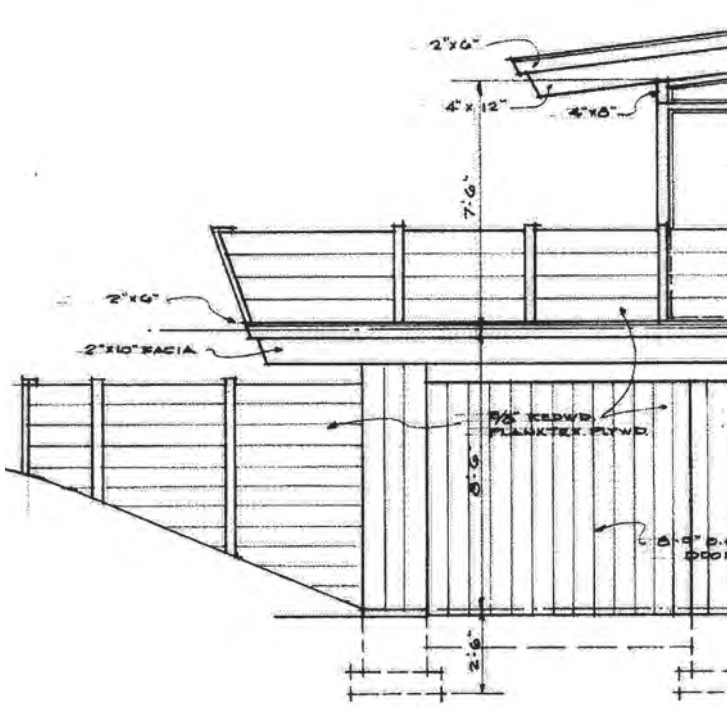
Secondary entrances, service doors, utility doors and garage doors are much simpler in design.

While some entrances in Arapaho Hills are concealed in private courtyards or at the rear of open carports, the Bailey House features a dramatic primary entrance openly displayed to the street.

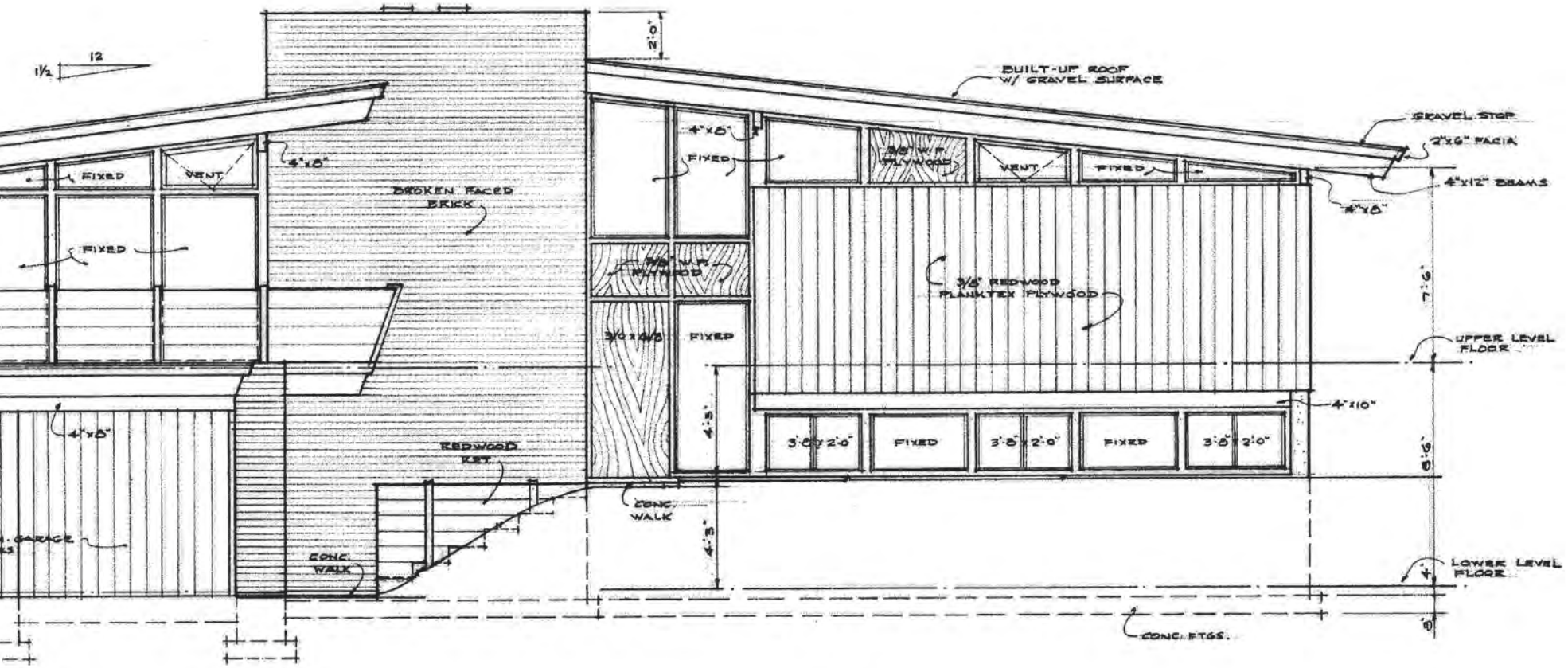
Located at the juncture of the two major volumes of the house, and immediately adjacent to the massive chimney, the entrance rises two stories in height.

There is a solid entry door beside a translucent fixed sidelight of the same height and width

Above, a pair of spandrel panels and clear glass transom windows rise to the roofline.




*Bruce Sutherland's architectural design for 5445 South Manitou Road c1963 (drawings undated). Drawings courtesy the Arapaho Hills Archive.*




EAST ELEVATION

1/4"=1'-0"

The Bailey House typifies Arapaho Hills houses with prominent primary entrances displayed to the street.

1 At the end of the driveway, a sidewalk of exposed aggregate concrete leads around the garage wall to the face of the house.

2 At the end of the walk, a series of wood-framed exposed aggregate stairs rise around the massive chimney to the entrance.

3 Entrances include many of the same components that form window compositions, like the fixed window that forms the sidelight of translucent glass. Above, a pair of spandrel panels and fixed clear windows rise to the low-pitch front-gable roof above. All the components are recessed within projecting frames.

4 The entrance is adjacent to the chimney, positioned asymmetrically on the east elevation. It rises one-and-one-half stories on the face of the house.

5/6 A projecting roof plane with exposed beam shelters the entry; a pendant light fixture with white translucent globe lights the doorway. A service door to the garage is visible at the foot of the stair.

7 A detail of the entry staircase.










4
5445 SMaR


5
5445 SMaR


7
5445 SMaR


6
5445 SMaR


5395 SLB

This entrance is located at the juncture of the projecting carport and the body of the house. The vertical wood siding detail beside the walkway creates a sense of entry.

The primary entrance door appears at left, with a service or utility door of equal size to the right. Above both doors are transom panels of pegboard.


5425 SLB

A narrow roof-form shelters this entry walk. The fascia is detailed to match the roof above except the soffit, which is closed and incorporates recessed lighting.


5460 SMoR

A similar detail appears on this home.

The roof-form extends further onto the face of the house, where the entrance includes three vertical sidelights.


5475 SMoR

This entrance has a door with a narrow sidelight and transom window above. The roof plane shelters the entry, then opens to light the adjoining entrance courtyard.


3895 SBA

This entrance appears in a historic photo on the cover of this volume.

Sheltered by a projecting roof plane with exposed beam, it has a wide, full-height sidelight of translucent glass.


3890 WCR

A similar roof detail appears on this house, but the entrance composition itself is very different, rising one and one-half stories high.

The sidelight is an asymmetrical composition of three windows with translucent glass, one an operable casement. The series of three transom windows above have clear glass.




3905 SBA

This roof plane extends beyond the body of the house to shelter a large entry with a full-height entrance composition.

Facing Berry, it's the most visible and transparent entrance composition on the perimeter of Arapaho Hills.



3890 WAR

In contrast, this modest entrance faces Arrowhead. The door and translucent sidelight are recessed beneath the roof plane at the end of a long sidewalk. Perpendicular to the door is a narrow vertical window composition.


5480 SMoR


5380 SMaR

This main entrance also features a narrow, full-height vertical sidelight.

A number of entrances are even more private, recessed at rear of carports. This entrance sits above a raised concrete sidewalk within an open two-car carport. The roof shelters the entrance, but is partially opened to light the walkway.


5430 SMoR

This simple entrance is positioned perpendicular to the front wall of the house, just inside the entrance of a two-car carport.




3775 WCR

Entrance compositions are often related to secondary volumes. Here, an entry stair rises beside a prominent masonry planter box, positioned asymmetrically on the face of the chimney. The entry is positioned flush with the chimney.




3895 WCR

This large entrance and window composition merge to form an entire wall sheltered by projecting roof and wall planes.

Blind and transparent windows match the height of the door, an upper row rising into the front-gable roof. The door is reached by a walkway across the face of the house. Two stacked translucent windows form the sidelight of the door, with transom windows above.




3605 SBA

This open entry court is recessed between the carport storage unit and the main body of the house, to the right.

From the carport, a service sidewalk leads behind the storage unit to the front door.

From the driveway, the formal entry walk leads in front of the storage unit to an small arched bridge over a shallow pool.



5475 SMoR

Located in a small open courtyard at the juncture of the house and garage, this entrance is partially concealed from the street.

An open roof plane extends around two walls the courtyard.




5480 SMaR

The masonry wall that carries this carport roof also defines an open courtyard behind, at the primary entrance to the house.

The entry is accessible from the carport or by a walkway between the sidewalk and the far side of the wall.



5395 SMoR



5455 SMoR

This entrance with sidelight is recessed deeply in an open courtyard formed by the garage and the body of the house.

The entrance courtyard of this house is concealed behind an exterior door and a row of solid panels with open windows above.

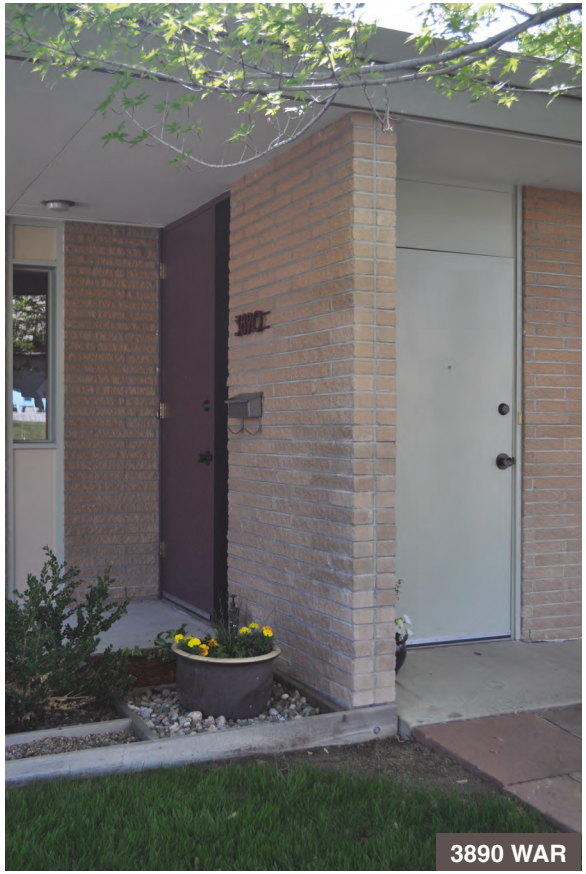



This entrance is located on the face of the house, sheltered below a roof plane that projects outward over a one-car carport and one-car garage.




The main entrance includes a pair of double doors with two translucent sidelights.

The sliding glass doors visible on the wall behind are part of an informal patio area that was originally screened from the formal entrance.




Secondary entrances provide egress between informal areas of the house and the exterior.

A projecting wall plane screens the secondary entrance at right from the primary entrance at left.




A secondary entrance to the garage and a formal gate to the side yard appear in this patio area in front of the house.




This secondary entrance appears in a recessed carport at the rear of the house.




The main living area of this house cantilevers over the carport. In the back corner of the carport, a secondary entrance appears beside a pair of windows above a spandrel panel.




On the side elevation of the house, this secondary door provides egress to a breezeway between the house and garage. A pedestrian door into the garage appears inside the breezeway.




Set back behind the chimney and a projecting wall plane, a secondary door from the house leads into a small concealed outdoor patio.



3865 WCR

Garage doors were finished with the same siding materials as the surrounding wall. When closed, the garage wall and doors create a visually seamless surface.

Each door is a single panel, even on two-car garages. They pivot upward to open.



3650 WCR

These garage doors are faced with the same board-and-batten siding as the wall.

They have the original hardware: small pivoting handles that also serve as latches, with a keyhole for the lock above.




Open passageways also provide egress between carports, garages and the primary entrance to the house.




In addition to primary and secondary entrances, utility doors also appear, providing access to utility rooms within the house from the exterior.

These doors are normally distinguished by ventilation openings, like the series of three circular openings above, along with a lock without handle.




Utility doors also provide access to storage areas within garages or carports.

Like garage doors, utility doors are faced with the same siding material as the surrounding wall, creating a visually continuous surface.



5485 SLB

A variety of smaller original features appear in conjunction with entrances.

These original street numbers, routed from wood, are directly attached to a concrete block wall adjacent to a recessed carport entry.



3890 WAR

Similar wood numbers are secured to narrow strips of wood and fitted into deeply raked mortar joints.



5400 SMoR



5400 SMoR

This porch light with street number was part of a Colorado Central Power Company promotion of new applications for electricity in post-war houses.

It reads “Medallion Home” and “Live Better Electrically,” picturing a man, woman and child holding hands within radiating rays of electrical power.




An entrance door adjacent to a carport opening features shallow collages of found objects that may have been salvaged from mountain ghost towns by the original owners.

A similar panel is applied to the blind window on the far side of the entrance composition at left.







The same primary entrance features this unique two-sided step of exposed concrete aggregate. The open triangle on the face of the step echoes other triangular decorative motifs that appear on the house.

Exterior fixtures light most entrances. Many are recessed in soffits over entry walkways or above front doors. This original fixture consists of a plain metal frame with translucent glass diffuser.










Mail slots are often integrated into walls near entrances.

Original door handles and locks, like this garage hardware, can be identified.

Some entrance features, including delivery boxes, were custom fabricated in the carpentry shop. Others items were manufactured.

**EAVES**
Though the display of eave components serves little functional purpose, they form an essential design element that contributes to the visual richness of the neighborhood.

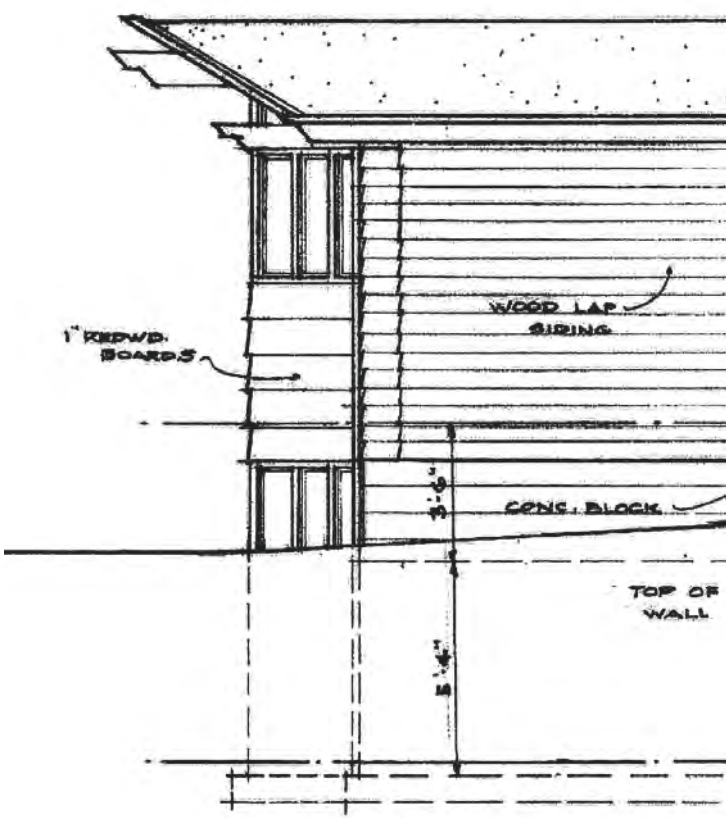
Three components make up the eave compositions displayed in Arapaho Hills: the fascia, or edge of the roof line; the soffit, or underside of the roof surface; and beams and rafters, the exposed structural elements of the roof plane.

Eave compositions, since they express the structure of the roof plane, vary depending on the roof type. On rectangular roof planes, eave composition components are largely parallel or perpendicular to each other.

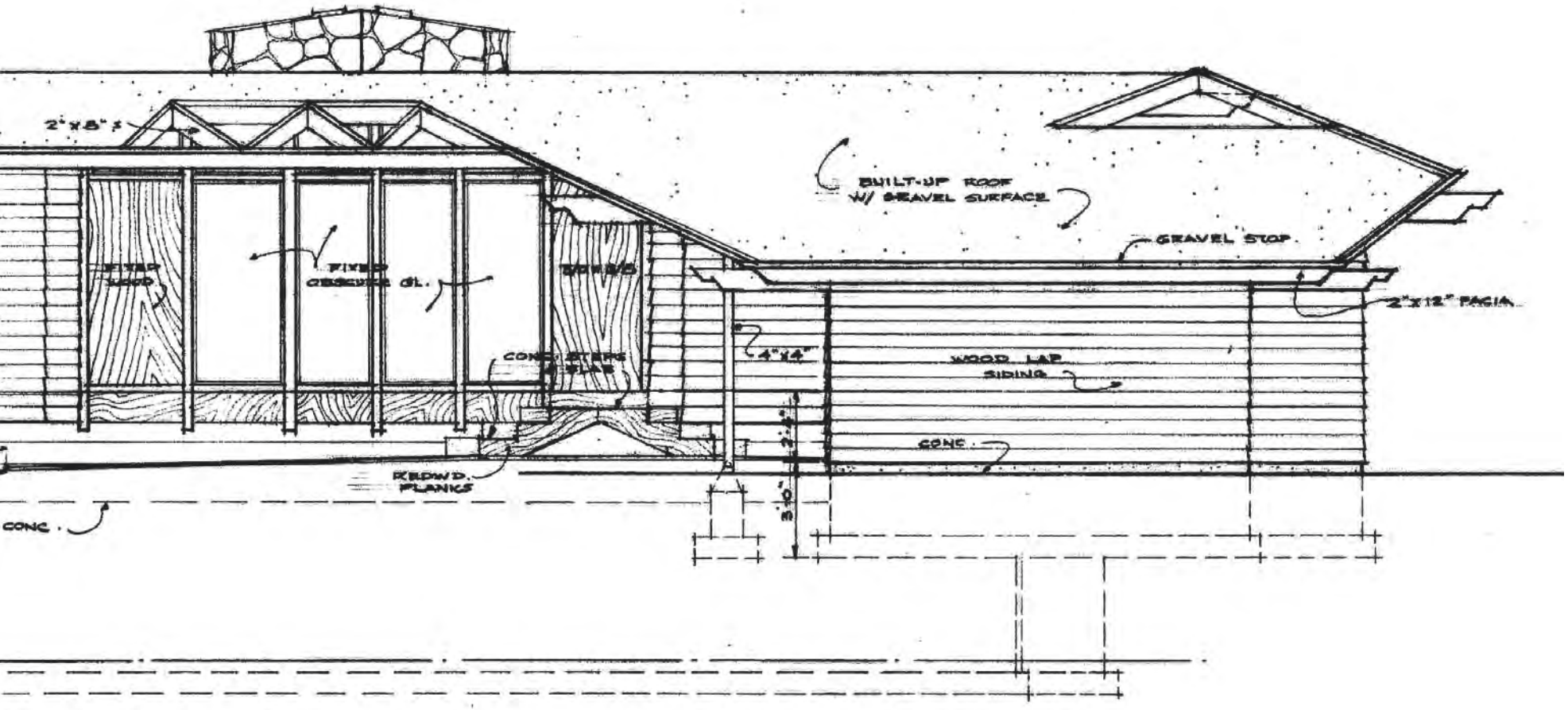
Polygonal-shaped roof planes display angled components.

Though the houses in Arapaho Hills display a great deal of variety in the detailing of the eaves, the drawings for most houses don't include them, possibly indicating that many were designed in the carpentry shop.

The unusual polygonal volumes that form the Van Dalebor House may have prompted Bruce Sutherland to create more detailed designs for the eaves, including a repeating triangular motif.




*Bruce Sutherland's architectural design for 5420 South Mohawk Road dated March 12, 1960. Drawings courtesy the Arapaho Hills Archive.*




WEST ELEVATION

1/4"=1'-0"

At the Van Dalebor House, the eave detailing responds to the massing of the house.

1 The side-gable roof extends beyond the polygonal volumes of the house, creating dramatic prow-like forms. Though the beams are exposed, the rafters are concealed above plain panels.

2 The polygonal carport roof slopes down from the front wall of the house toward the street.

3 The notched ends of the beams, finished with a slightly darker natural finish than the wood siding, extend beyond the edge of the roof planes.

4 The original plans show an open roof plane above this front window composition, forming a sunscreen of three triangular openings

5 The fascia of the house extends to join the carport roof at the southwest corner of the house, creating a triangular opening to the sky.









4



5420 SMoR

5



5420 SMoR




The fascia is the vertical board attached to the edge of the roof plane. Here, it's positioned parallel to the wall plane below.

The soffit, or underside of the projecting roof plane, is open, with the roof deck visible above the exposed beams and rafters.

The eave design responds to the side-gable roof. At right, the beams appear just below and behind the fascia, the ends trimmed at right angles.

At left, the rafters appear above and behind the fascia.

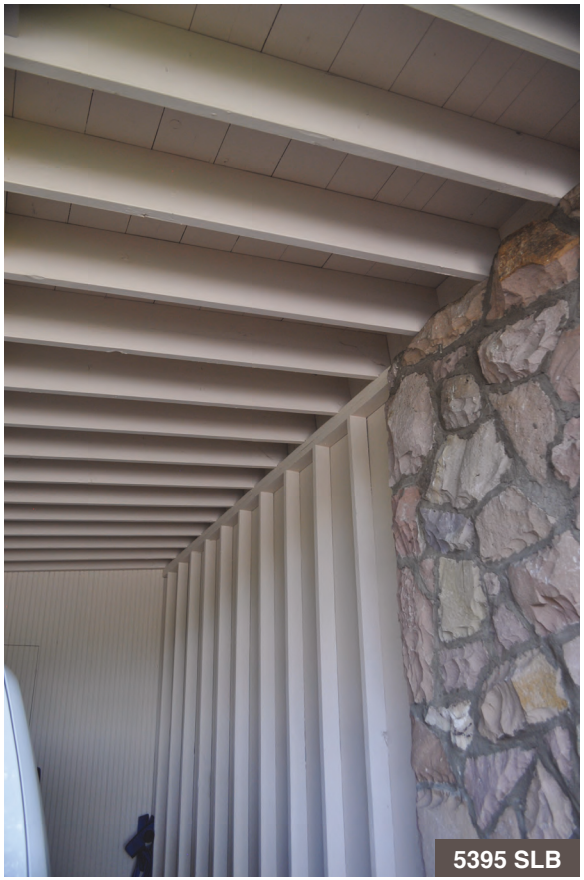



In addition to the eaves around the body of the house, the roof structure is also expressed within carports.

Wood columns form the open side wall of the carport, carrying the exposed beams.




The open beams and rafters continue into the interior of the house as well, visible above through the window composition at the roofline.




On the interior of this carport, the exposed rafters align with the battens of the adjacent vertical board-and-batten wood siding.




These overlapping house and carport roofs both feature exposed beams.


5430 SMoR

On this front-gable roof, the exposed rafters are painted the same color as the roof deck above. The exposed beams are painted to match the fascia.


3775 WCR

The exposed beams, rafters and roof deck of this shed roof are painted the same color.


5455 SLB

The rafters of both of these opposing and overlapping shed roofs are exposed.


5355 SMoR

Beams and rafters on this front-gable roof are both painted the same dark color to sharply contrast with the light roof deck above.

A similar paint treatment appears on the horizontal board-and-batten siding below.


5475 SMoR

Above the primary rectangular volume of this house, a polygonal side-gable roof plane creates a projecting prow. The entire eave composition is painted the same dark gray.


5465 SLB

This complex eave detail appears over an open carport. The prominent fascia has two angled facets. It steps back as it turns onto the adjacent elevation, forming an indented corner.


5455 SMaR

An eave composition with angled three-course lapboard fascia shelters a full-height window on the wall below. It extends onto the face of the adjacent chimney.




The roof planes of these two primary volumes join to shelter the primary entrance of the house. The exposed rafters form this decorative detail above the front door.




A wood column carries the cantilevered roofline above the entry stairs.


5475 SMoR

This eave is partially opened to allow sun to the patio below while still shading the interior of the house.


5450 SMoR

Soffits are sometimes closed to partially or completely conceal the roof structure.

This soffit features tongue and groove siding set perpendicular to the wall. It conceals the rafters, while the beams are exposed.




Rafters running parallel to the fascia, at right, are concealed above a lapboard soffit. At left, like the beams, they're exposed.

In the photo at upper right, the lapboard soffit finish continues into an open breezeway, where the main entrance to the house is concealed.







A similar detail appears above. The rafters are exposed at left and concealed at right, where the round concrete flue of the chimney penetrates the roofline.




On this house, the rafters are completely concealed above plywood panels with circular vents that run the length of the roof line.

The fascia is angled and the beams remain exposed.




These rafters are concealed above a plain panel while the beams remain exposed.




Between this carport and house roof, lapboard set into the front gable of the house roof provides ventilation.




Original downspouts of round corrugated metal penetrate overhanging roof planes, then angle back to the wall plane. In this way, the detailing of the eaves isn't obscured.

Surface-mounted gutters hide and clutter eave details.




Exposed rafters carry the roof above the main beam supporting the open wall of this carport.

Roofs were characteristically finished with a built-up roofing system and covered with loose crushed stone.

This house shows the visual importance of the roof finish when roof surfaces are visible from the street or yards.

**MATERIALS**
Materials represent the final level of visual diversity in the neighborhood.

This chapter focuses on the most prominent exterior finish materials in Arapaho Hills -- masonry and wood siding.

Some houses feature a single type of masonry or wood siding. Others combine multiple varieties of each.

On some, masonry forms the majority of the exterior wall planes. On others, wood siding plays an equal or dominant role.

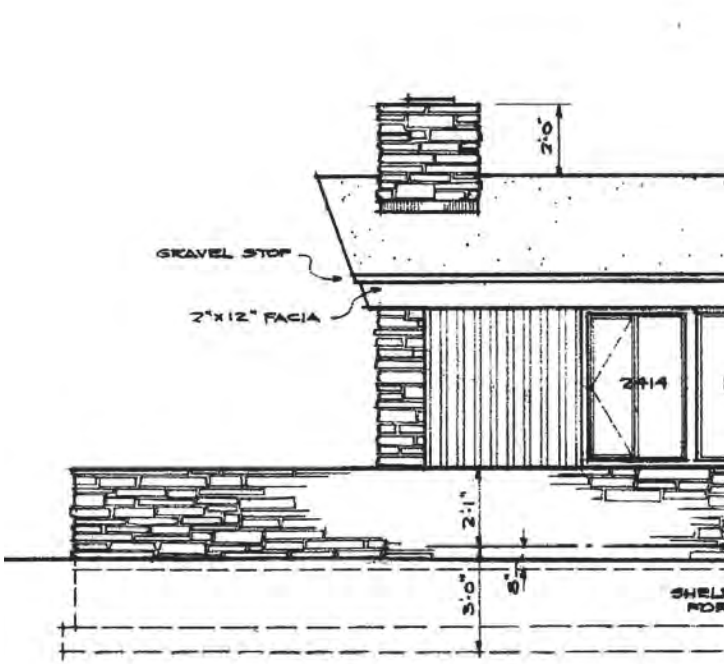
The Meyer House illustrates the way in which materials were inventively combined to create a primary design feature of the house.

The strong horizontal form of the side-gable roof on the left is reinforced by the long angled balcony and the red sandstone wall originally planned to run across the face of the house and extend into the landscape.

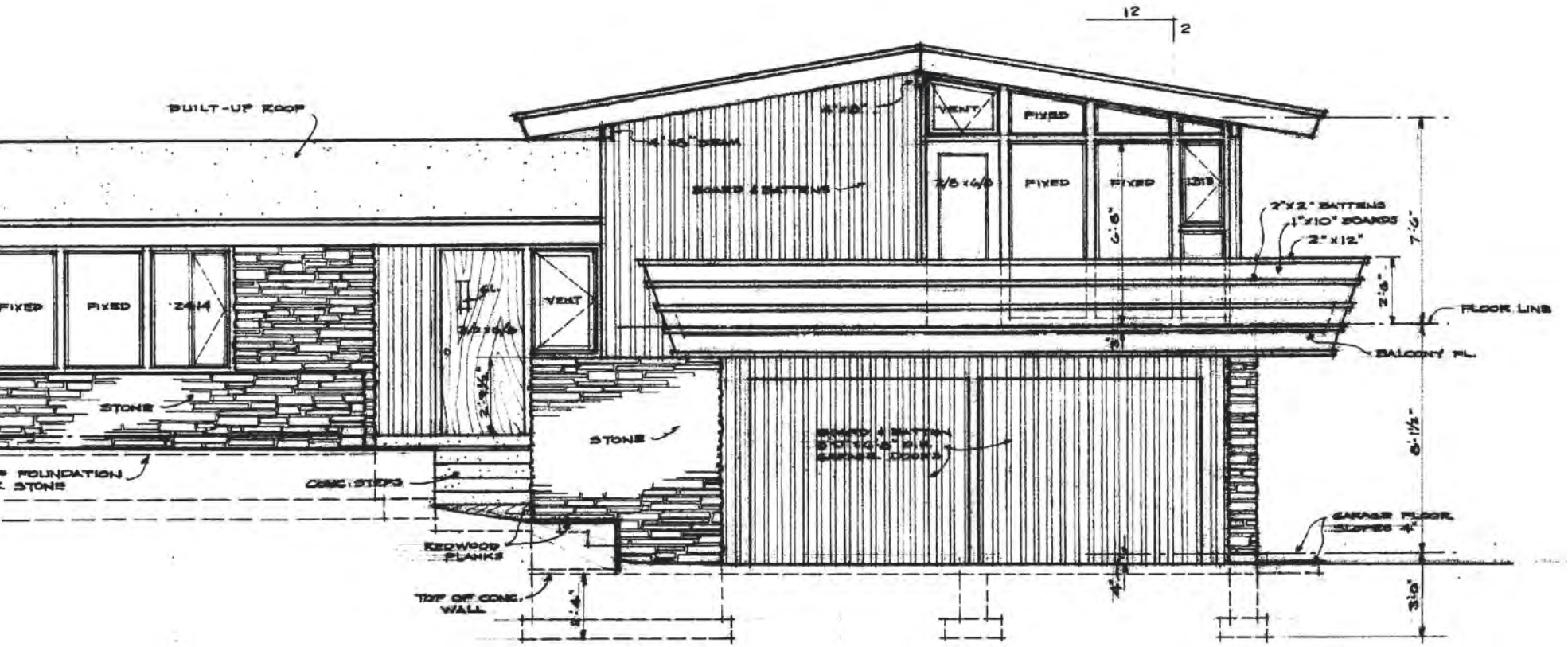
This horizontality is enlivened by the vertical chimney projecting through the roof plane and the vertical board-and-batten wood siding that extends two stories above the driveway to the front-gable roof.

The drawing also illustrates the changes that took place between the original design and final construction of the house.

Though some materials specifications were altered, the house still clearly reflects the original intent of the architect.




*Bruce Sutherland's architectural design for 3865 West Chimayo Road dated March 31, 1957. Drawings courtesy the Arapaho Hills Archive.*




SOUTH ELEVATION

¼"=1'-0"

The material palette of the Meyer House features native red sandstone masonry.

The elegant simplicity of the house's modern ornamentation is inherent in the color, texture and horizontal and vertical rhythms of the materials themselves.

1 A view of the south elevation of the house.

2 Vertical and horizontal board-and-batten siding appears adjacent to a red sandstone patio.

3 Vertical siding joins a concrete block masonry wall with flush vertical and deeply raked horizontal mortar joints.

4 The varied materials are unified by their color palate and horizontal lines.

5 The boards and battens of the horizontal wood siding are painted a single color on the balcony fascia and contrasting colors on the wall adjacent to the entrance. This siding replaced the red sandstone originally shown on the drawings.

6 The proportions of the boards and battens vary between the vertical and horizontal siding.





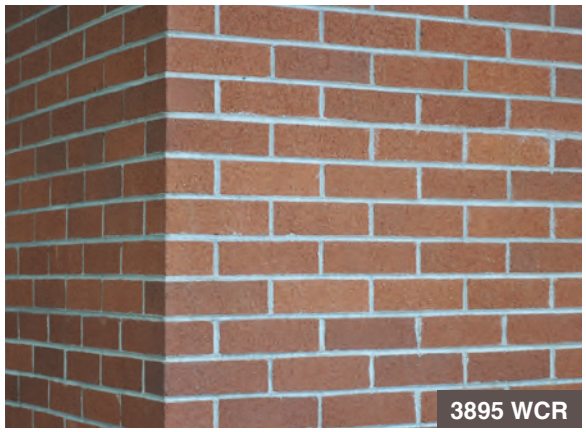





4
3865 WCR


5
3865 WCR


6
3865 WCR







This standard-size hard-fired brick, so commonly seen in houses of the period, is a rarity in Arapaho Hills. The traditional mortar joints are uniformly finished to produce a shallow, concave surface.

More common are long, narrow Norman bricks, the vertical joints flush with the surface and the horizontal joints deeply raked.




The proportions of the brick and the treatment of the joints emphasizes the overwhelming horizontality of the houses and the neighborhood as a whole.

This masonry is enlivened by two vertical rows of projecting bricks.




The masonry of the wall is laid running bond, with the vertical joints of one row centered on bricks in the rows above and below. The window sill is formed by a header course, with the bricks laid perpendicular to the wall.

A decorative vertical end course appears near the corner of the masonry wall.



5390 SMoR

At the edge of the masonry wall facing the entrance, two stacked rows of end courses are visible.


5420 SMaR

This red Norman brick has a surface texture that adds interest to the wall.


3790 WCR

Gray brick is also common in Arapaho Hills. Here, a broken-faced brick is laid running bond. The vertical joints are filled, the horizontal joints raked.


5400 SMaR

A similar brick is laid with flush vertical joints with no visible mortar, and deeply raked horizontal joints.


5430 SMoR

A blue and brown Norman brick is laid running bond with a dark-colored mortar.


3905 SBA

A lightly-textured gray Norman brick is laid running bond with conventionally tooled mortar joints.


5470 SMaR


5375 SLB

This wall features a surface pattern of raised brick.

A long narrow broken-face pink brick is laid with flush vertical joints with no visible mortar. The horizontal joints are deeply raked.


5425 SLB

In addition to brick, painted concrete block also commonly appears. It shares many of the same bond and mortar treatments.

Here, a gray broken-face brick is combined with concrete block. Both feature a pattern of projecting units. Raised bricks project perpendicular to the wall, raised blocks project at an angle. Both cast shadows that vary with the time of day.


5405 SLB


5395 SMoR

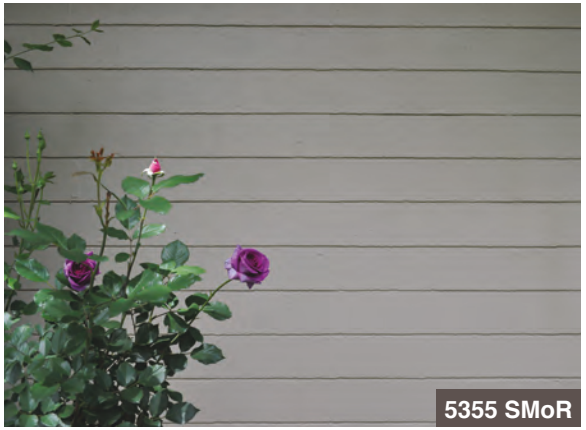
This long, narrow concrete block is laid stack bond, with the vertical and horizontal joints aligned. Here, all the mortar joints are raked.

A block of more standard dimensions is laid running bond with vertical joints filled and horizontal joints raked. The two courses of glass block light the interior of a garage.


5455 SLB

A small square concrete block is laid stack bond. Raked vertical and horizontal joints create a grid pattern.

The blocks with pierced openings form a geometric pattern on the wall. The openings are infilled with glass block or, where the wall extends beyond the house, left open to the garden.


5355 SMoR


5355 SMoR

A narrow concrete block with filled vertical and raked horizontal joints.

Larger block with the same decorative mortar treatment also appears.



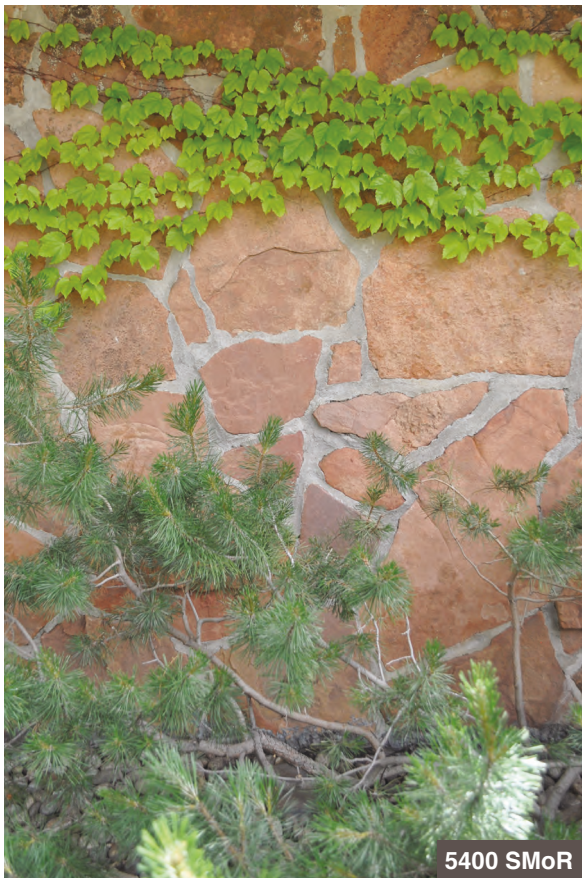
3605 SBA

Pre-cast aggregate panels were purchased by Mannon from a sale of excess building material at the United States Air Force Academy in Colorado Springs, under construction from 1955 through the early 1960s. Secured by battens, they appear as a primary exterior material on a few homes.

This is the sole example that remains unpainted.




Walls are constructed of random range ashlar masonry, using flat slabs of native red sandstone from the Lyons area. Stones occasionally project beyond the of the wall plane, adding a decorative visual element.




Random slabs of red sandstone are laid parallel to the wall surface.




Natural stone masonry integrates especially well with landscape plantings.




The most prominent masonry stone in Arapaho Hills is a native rhyolite quarried in the Castlerock area. The colors range between pink, yellow and gray; values range from light to mid-range.

Variations in the finishing and laying of the stone appear between individual houses. Here, smoothly finished light-colored stones are laid with a pale mortar.




On this wall, more variety appears in the color and surface texture of the stones and a darker gray mortar is used.




Larger eccentric rocks with strong color variations were chosen for this wall. Their surfaces are more roughly tooled and random stones project beyond the wall plane. The mortar joints are deeply raked to emphasis the individuality of each stone.







Wood siding presents similar variety. Board-and-batten siding has boards of varying width secured by wood strips, or battens. This vertical version has wide boards and narrow battens.

In this board-and-batten siding, they're of equal width.







Panels of horizontal board-and-batten siding appear.

Angled board-and-batten appears on the same house.




Here, board-and-batten siding is used to create an asymmetrical geometric composition of blind windows beside a window with spandrel panel below.



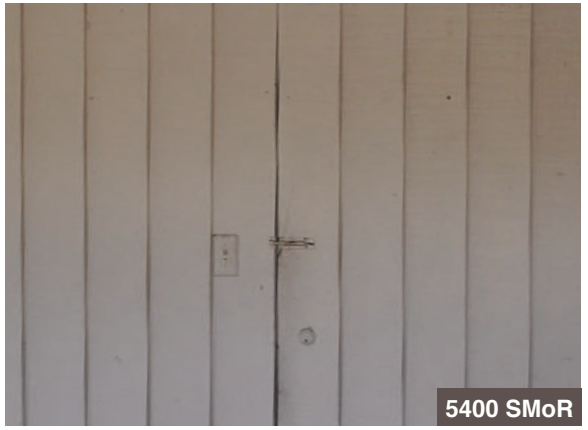

The interior of this carport is distinguished by long horizontal board-and-batten siding.

The boards are framed by raised battens, creating a deep relief pattern on the wall surface.




Lapboard siding, where boards are angled to overlap the adjacent board, also appears. This house features both narrow and wide lapboard.

Though most wood sidings are now painted, this lapboard retains soft gray stain that accentuates the natural qualities of the wood itself.







An unusual vertical lapboard siding appears on this storage unit wall.

Tongue-and-groove wood siding appears in various widths. It creates a smoother surface than the high relief of board-and-batten siding.



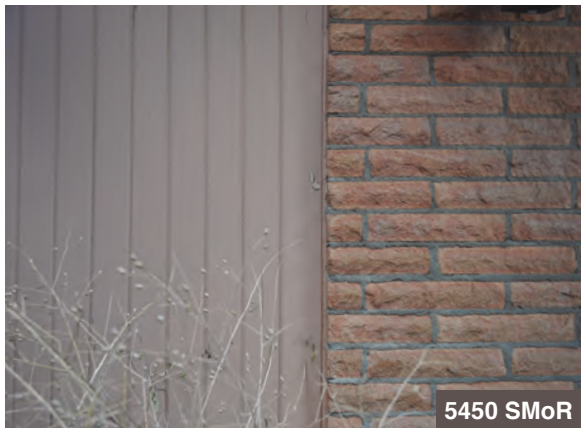

This unique siding material consists of a series of narrow wood verticals secured just in front of a plain wall behind.

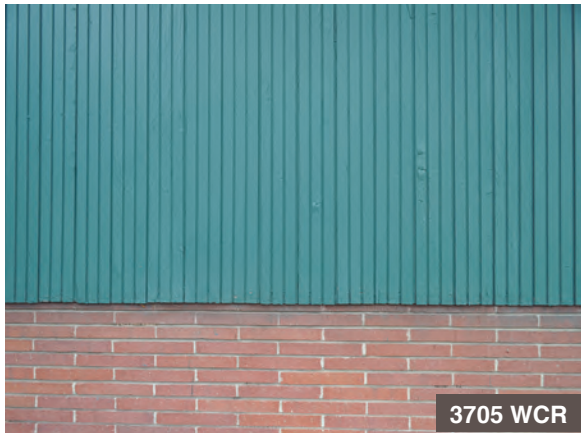
Like relief patterns worked in masonry walls, this treatment creates a shifting pattern of shadows that change with the movement of the sun.




Multiple masonry and wood wall finishes appear on many houses.

Random stone masonry and stack-bond concrete block with raked vertical and horizontal joints are combined on this house.




Two widths of vertical tongue-and-groove siding are combined with masonry of two distinct bricks.

This orange brick has a heavily modeled surface with bulky, untooled mortar joints.

In contrast, the red Norman brick has flush vertical joints and heavily raked horizontal joints.


3685WCR


3890 WCR

Narrow tongue-and-groove siding appears below the exposed rafters of this carport roof. A simple window composition is grouped with a massive chimney of red sandstone.

Here stone masonry is combined with horizontal board-and-batten wood siding.


3905 SBA

A dark blue-gray brick appears adjacent to a large entrance composition. Visible within is a board and batten siding that also appears as an exterior finish.


3655 WCR


5355 SMoR

Tongue-and-groove siding and a narrow concrete block with raked horizontal joints flank this full-height window.

Stone masonry, two types of horizontal wood siding, exposed rafters and beams and a large window and entrance composition form the complex ornament of this house.

## 1.0.0 SURVEY AND EVALUATION

The unique qualities of Arapaho Hills set it apart from all other neighborhoods. The quality of its design is an important asset shared by the entire community. The monetary and aesthetic value it adds to each house, though not easily quantified, cannot be understated. Retaining the historic features of the site and each individual lot and house is essential to the character and value of the whole.

The creation of a historic preservation plan for individual houses and the community at large begins with survey and evaluation.

A survey consists of observing the neighborhood, lots and homes in detail. For future reference and planning, consider recording each feature and its location using a survey form, sketch map and photographs. A sample survey checklist follows.

During the survey, evaluate each feature in relation to the following:

- Determine the material and condition of each feature.
- Establish whether surveyed features are original or later additions.
- Consider whether changes or additions appear to add or detract from the original design of the house.

Resources to help establish whether features are original include conversations with neighbors and former owners and digital copies of the original subdivision plat, architectural drawings, photographs and news articles. However, memories aren't always accurate, photos don't reveal every angle and houses aren't always constructed according to original plans. The house itself must always be the final source of information.

Close observation and good detective work is the key. The inside of a carport converted to a garage can reveal original wood siding obscured by metal siding on the exterior of the house. Exploration can uncover historic windows concealed when kitchen cabinets were extended to the ceiling. Scraping and sample testing can reveal the original paint colors.

If questions arise, consider consulting with preservation professionals. This could include preservation staff at the city of Littleton or History Colorado. Non-profit preservation organizations like Historic Littleton, Historic Denver, Colorado Preservation and the National Trust for Historic Preservation might be able to offer assistance. The services of private historic preservation firms are also available.

Qualified contractors who are knowledgeable and sympathetic to historic preservation can also be helpful in evaluation. These will most often be individual craftsmen or small firms that focus on repair and restoration of features and materials. Installation businesses that base their income on the sale of new products like fencing, windows or doors are best avoided. Very often these products are incompatible with the historic design features of Arapaho Hills.

### 1.1.0 SITE

- Streets
- Street signs
- Street lights
- Traffic signs
- Traffic lights
- Sidewalks
- Utility poles and lines
- Utility boxes
- Site drainage
- Neighborhood signs

### 1.2.0 LOT

- Walks and driveways
- Walls, noting those shared by adjacent lots
- Fences
- Gates
- Staircases amd steps
- Retaining walls
- Freestanding planters
- Mature trees
- Plantings immediately adjacent to houses, walls or fences
- Freestanding sheds and storage buildings
- Freestanding arbors or gazebos
- Swimming pools
- Fountain, pools and water features
- Incinerators

### 1.3.0 PRIMARY VOLUMES

- Identify the number, scale, location and relative position of each volume.
- Identify open and closed volumes.
- Observe the location of the primary volumes on the lot and their relationship to the lot lines.
- Observe the relationship of primary volumes to adjacent houses, including those

to the side and rear.
- Observe the relationship of primary volumes to the grade of the lot.
- Identify open volumes that were enclosed.
- Identify later additions that added square footage to the house.
- Identify lost volumes. The most likely volumes to have been removed are carports. Consult archival evidence, examine the lot for physical evidence of a remaining foundation wall and examine wall surfaces of the house for evidence of an attached carport roof.

**1.4.0 SECONDARY VOLUMES**
- Identify all secondary volumes including prominent roof fascia, chimneys, balconies and planter boxes.
- Examine the position of secondary volumes in relation to primary volumes.
- Examine secondary volumes for alterations like the removal of decorative details from the face of balcony fascia.
- Identify any lost secondary volumes, consulting archival materials and searching for physical evidence. A planter box could have been removed if it reached a state of advanced deterioration. A rear or side balcony may have been removed and replaced by a deck.

**1.5.0 PLANES**
- Identify the number and type of roof planes including flat, low-pitch shed, low-pitch asymmetrical or symmetrical front- or side-gable and folded plate roofs.
- Identify open and closed roof or floor planes.
- Identify open and closed wall planes.
- Observe the relationships between roof and wall planes and primary and secondary volumes.
- Note how roof and wall planes meet, join, overlap and extend.

**1.6.0 WINDOWS**
- Identify the number and location of window compositions that appear.
- Observe their position on the wall plane. Determine if their form satisfies requirements for privacy, views, sun, shade or air circulation.
- Identify individual transparent window components: fixed windows, casement, awning and hopper sash and sliding glass doors. Determine the materials that make up their frames, operable sash and glass. Note how screens and storm windows are configured, attached and installed.
- Identify individual opaque components such as blind windows, spandrel panels and louvers. Determine their materials and observe how they're built into window compositions.
- Determine if the window components and compositions are original to the house. Clues that they may have been partially or completely replaced include the appearance of metal or vinyl frames, inconsistent width of window framing and sash materials, exterior window screens or storm windows, tinted glass, variations between multiple varieties of single or multi-paned glass and integral factory finishes.
- Determine if window compositions or components have been removed, infilled, covered or lost due to alteration or the placement of an addition.

**1.7.0 ENTRANCES**
- Identify the primary entrance composition and how it relates to the grade of the lot, the primary and secondary volumes of the house and the roof and wall planes.
- Observe entry walkways, stairs and steps and how they relate to the driveway and street.
- Identify the individual components: door, sidelights, transom windows, lighting fixtures, door hardware, mail slots, delivery boxes and street numbers.
- Detail all secondary and utility entrances and their components, including sliding glass doors not associated with larger window compositions.
- Examine the detailing of garage doors.
- Determine if entrance compositions or components have been relocated, removed, infilled, covered or lost due to the placement of an addition.

**1.8.0 EAVES**
- Identify the detailing of the fascia, soffit and exposed beams and/or rafters.
- Observe their relationship with the form of the primary volumes and the wall planes below.
- Note detailing changes at the juncture of primary volumes or over window or entrance compositions.
- Record how far the eaves extend beyond the walls of the house and consider any functionality related to the seasonal position of the sun in the sky.

### 1.9.0 MATERIALS

- By this point in the survey, most of the materials should have already been identified, along with their condition and a determination of whether any have been altered or replaced. Survey and evaluate any remaining materials not integral to previous features.
- For evaluation purposes, consider that materials may be in sound physical conditions behind unsightly peeling paint. Conversely, deteriorated materials may also be disguised by new or recent paint.

Last, make notes of any unexpected features, their materials, condition and relationship to other features. Record other survey observations.

### 2.0.0 IDENTIFY SOURCES OF ACTIVE DAMAGE AND DETERIORATION

After evaluating the condition of each lot and house feature, and before repairing any existing damage, the source of any on-going damage should be determined.

#### 2.0.1 Rain, Snow and Hail

Water damage from rain and snowmelt is the largest potential threat to historic house features.

First, consider the drainage pattern of the site and lots. Street run-off should not drain onto lots during heavy downpours or snowmelts. Water should absorb into the soil on each lot, not race to create deep channels or collect in low hollows. Uncontrolled water can also flow onto adjoining lots and cause problems for neighboring homeowners.

Paved lot surfaces like walkways, driveways, staircases and patios should not show evidence of water pooling or erosion. Examine masonry walls, fences, retaining walls, planters and other lot features for destabilization or damage by water.

Next, examine the drainage patterns of the house. Water can compromise masonry materials, erode mortar and damage or destabilize walls, chimneys, planter boxes and sills. Water can damage wood siding materials, windows, doors and paint finishes. All water should drain away from the house, not collect at the foundation line.

Roof surfaces and flashing should be sound and prevent water infiltration.

If downspouts extend through the roof, there should be no gaps or leaks between the roof surface, downspout and eaves. There should be no gaps or leaks between surface-mounted gutters, the roof, roof fascia and downspouts. Gutters and downspouts should be regularly cleaned to make sure they don't overflow.

Eaves and wall surfaces adjacent to gutters and downspouts should not display any water damage, staining or erosion.

Windowsills and the tops of walls and chimneys should be slightly angled to shed water away from the house .

Hail sometimes accompanies heavy rainfall and can amplify its effects. Whenever hail occurs, special attention should immediately be paid to its impact on all historic features and materials, especially roofs and eaves.

In addition, plan to survey the lot and house during and immediately after a drenching rainstorm or heavy snowmelt, when sources of water leakage and poor drainage are even more obvious.

#### 2.0.2 Freeze and Thaw

Water creates even more damage to historic features during the winter months. Any lot or house features that collect snow may become saturated when snow thaws during daylight hours, then freeze at night. This freeze-thaw cycle can literally shatter brick and block,

erode mortar, damage wood and delaminate painted finishes.

**2.0.3 Plantings**
Well-located trees and shrubs contribute to the aesthetic value of individual houses and to the neighborhood as a whole. Poorly located plantings can have an adverse effect.

Roots of trees and large shrubs can damage or destabilize foundations, walls, planters, paving or sewer and water lines. Branches can damage or abrade exterior features and finishes. Trees can break or damage utility poles and lines.

Plantings can trap moisture against lot or house features and damage wood and masonry materials. The weight of climbing plants can pull down fences. Plants with adhesive pads or clinging stem roots can damage and scar materials if allowed to climb directly on wall surfaces.

**2.0.4 Irrigation and Ponds**
Irrigation systems should be designed and regularly monitored and maintained to ensure that water doesn't strike or drench any elements of the house or the built features in the landscape.

Other water features like ponds, pools and foundations should be regularly monitored to make sure they don't spray or leak damaging water.

**2.0.5 Heat and Sun**
Exposure to heat and ultraviolet rays, amplified by Colorado's high altitude, can accelerate the deterioration of materials and finishes. Roof surfaces are especially susceptible and should be regularly monitored for sun damage. Sun damage to waterproofing caulks can cause sealed gaps and joints to crack, exposing them to water and air infiltration. Paint and stain can fade, chalk, crack and peel, damaging underlying surfaces.

**2.0.6 Other Preventable Damage**
During the course of the survey, existing damage can give clues to where preventable accidents have happened in the past. A car hit a masonry wall, wood column or the back wall of the garage. A lawnmower or weed-whacker scarred the siding or valued trees.

Damage resulting from routinely performed tasks – parking the car and mowing the lawn, for example – can also be prevented with a little forethought. Parking stops can be purchased and installed on paving to stop or limit cars. Bollards or stones can prevent damage to walls, columns and water, gas and electric meters. Putting crushed stone or other mulch at the base of the house and landscape features keeps mowers at a distance.

**2.0.7 Deferred Maintenance**
Without a timely program of preventative, on-going maintenance, all of the preceding factors can combine and accumulate to bring a house to the point of functional failure. This can include collapsing walls and fences; unstable foundations and retaining walls; leaking roofs and rotting eaves, siding and ceilings; eroding mortar and damaged brick, block and stone; and inoperable windows and doors. Houses in this condition are those most often subjected to hasty repairs and drastic alterations that destroy deteriorated historic materials and features, compromising aesthetic qualities of the house and neighborhood.

### 3.0.0 REPAIRS

Prioritize any repairs related to sources of active deterioration or damage. Next, repair damaged features. Last, consider repairs that reverse aesthetic damage done in the past.

### 3.1.0 SITE

Site design and features affect the appearance and value of individual houses and the neighborhood as a whole.

Original site features should be retained, repaired and maintained, carefully salvaging and re-using historic materials. If damaged beyond re-use or repair, any replacement materials or features should visually duplicate the historic original as closely as possible. Lost features may be re-created if documented by historic photographs, plans or physical evidence.

### 3.1.1 Signage

Three site-specific signs enhance the community identity of Arapaho Hills. Each is constructed of different materials and has unique repair and maintenance issues.

The original sales office sign, concealed behind overgrown shrubbery, was recently revealed. The owners provided a model of community cooperation, contacting the city and knowledgeable neighbors to assist with plans to restore and select colors for the sign. Repairs and repainting are planned for the damaged concrete logo and letter forms.

The original stone masonry and concrete sign on the side lawn of 3650 Chimayo is somewhat deteriorated due to damage from snow removal operations on Lowell.

The sign on the lot at 3895 South Berry, though not original or listed as contributing to the proposed National Register District, is sensitive to the design values of Arapaho Hills. It's relatively new and appears to be in good condition.

Since these signs are integral to the identity and value of the neighborhood as a whole, homeowners should consider establishing a neighborhood fund for the repair and maintenance of all three signs.

### 3.1.2 Public Site Features

Homeowners might consider creating a committee to address any repair and maintenance of sidewalk and street paving or sewer lines and fire hydrants with the city of Littleton. These city-maintained elements affect multiple homeowners and the visual quality of the site.

### 3.1.3 Private Commercial Site Features

Such a committee might also be helpful in dealing with electrical, cable and phone service suppliers to ensure that utility lines remain inconspicuous and in good repair.

Utilities running along rear property lines are vulnerable to damage by trees, storms and high winds. Individual or communal tree pruning can help avoid service interruptions and preclude emergency pruning by utility companies that often damage the aesthetic qualities of neighborhood landscaping.

### 3.1.4 Traffic

The interior of Arapaho Hills provides privacy, safety and quiet since it's off the surrounding street grid. Lowell and Berry, however, are main thoroughfares. Homeowners on these streets, supported by the neighborhood as a whole, might consider working with the city to control traffic speed or introduce other traffic-calming measures. Lowell homeowners might also collaborate on shared landscape plans to reduce traffic views and noise.

### 3.1.5 House Numbers

Having house numbers stenciled on curbs might be considered since historic street numbers are often obscured. The Eichler communities of California, also post-war subdivisions of modern design, have done this as a fund-raiser for community activities. Such a project could help fund signage repair and maintenance in Arapaho Hills. Visit http://www.eichlernetwork.com/.

### 3.2.0 LOT

The appearance of lots affects individual houses, groups of adjacent houses and the neighborhood as a whole. Though the maintenance of individual lots is most critical to next-door neighbors, it can also affect homeowners above and below or even a block away.

Original lot features should be retained, repaired and maintained, carefully salvaging and re-using historic materials. If damaged beyond re-use or repair, any replacement materials or features should visually duplicate the historic original as closely as possible.

Lost features may be re-created if documented by historic photographs, plans or physical evidence.

### 3.2.1 Masonry Walls and Fences

Walls and fences can be damaged by improperly hung gates that drag and place excessive strain on adjacent masonry or fence posts. Keep fence hinges and latches in good repair.

Retain the original size and proportion of front and back yards by keeping fences and walls in their historic position. Moving a fence forward to increase the size of a back yard can visually intrude on the architectural design of a house and compromise its relationship to neighboring houses.

Owners who share masonry walls, or have connecting walls and fences, should consider working together on repairs and maintenance, including any paint color selection.

When located in front yards, walls, fences and gates are formal, often matching design and material features of the house. If less visible or dividing neighboring back yards, fences are most often informal. These distinct qualities should be retained.

Custom fences best replace badly deteriorated formal fences. These should duplicate the original fence or draw on the design vocabulary and materials of the house. Replacing informal fences not visible from the street with stock fences can be successful if the form and finishes are simple and not visually intrusive.

### 3.2.2 Retaining Walls

Ensure that retaining walls of masonry or wood have proper drainage. Consider interior waterproofing to avoid water penetration damage.

### 3.2.3 Paving

Concrete, asphalt and loose stone all appear as walk and driveway paving. Wood-framed exposed aggregate appears as walks, stairs and steps. Avoid introducing new paving materials that disrupt the visual continuity of neighborhood paving.

Paving should be restricted to original locations and configurations, not expanded to areas of the lot intended for landscaping.

### 3.2.4 Plantings

The overall landscape of the site contributes to continuity by avoiding visual boundaries between individual properties in favor of a shared, park-like setting. Any changes to landscaping that are visible to the street should maintain and enhance the site's visual continuity.

Vistas and sight lines into the neighborhood and between neighboring houses should be respected and retained. New walls, fences, structures or plantings that create physical or visual barriers within the site or between lots should be avoided.

Properly positioned, new plantings can showcase the house. Ensure that new plantings don't obscure its architectural form and features.

When undertaking a radical change in landscaping, alert neighbors to reduce anxiety and facilitate planning across lot lines. Consider how any new landscaping will affect neighbor access to views, light, privacy and air circulation. New homeowners should consider living through an entire four-season cycle before making changes in landscape design that might adversely affect the quality of life in the neighborhood.

Due to Colorado's dry climate and drought conditions, many water-conserving homeowners are beginning to reduce lawn size, historically a key element in the shared landscape. One successful approach is to retain front lawns while converting back yards to paving and alternate planting materials. Another is expanding or introducing new planting beds within lawn areas. These approaches can be successful if designed to maintain the visual continuity of the shared landscape.

Mid-century garden publications can explain modern landscape design of the period, helping homeowners retain the aesthetic qualities of the historic landscape while reducing water usage.

Avoid introducing non-historic materials or forms into the landscape. This includes plastic fencing in traditional styles, contemporary types of cast concrete block or earthen berms that alter the historic topography and create barriers between lots and/or the street.

### 3.3.0 PRIMARY VOLUMES

Preserving the original size, proportion and relationships of primary house volumes as visible from the street is essential to retaining the character of individual houses and Arapaho Hills as a whole.

Original open and closed primary volumes should be retained, repaired and maintained whenever possible, carefully salvaging and re-using historic materials. If damaged beyond repair, any replacement features should visually duplicate the historic original as closely as possible. Lost volumes may be re-created if documented by historic photographs, plans or physical evidence.

#### 3.3.1 Enclosure of Open Volumes

The interplay between open and closed volumes is an important architectural element. Ideally, open volumes should be preserved.

Some open volumes have been converted to indoor living or storage areas. The conversion of breezeways or open terraces within the body of the house is least intrusive because it's not visible to the street, though it can result in the appearance of odd anomalies like masonry barbecue grills in interior living areas. The conversion of carports to garages is common. Their conversion to storage or living spaces is less feasible. Any enclosure of open volumes should be carefully planned and detailed to avoid damaging the house's appearance.

### 3.4.0 SECONDARY VOLUMES

Preserving the original size, proportion and relationships of secondary volumes as visible from the street is essential to retaining the character of individual houses and Arapaho Hills as a whole. Smaller than primary volumes, secondary volumes are more likely to be removed, altered or damaged.

Original secondary volumes should be retained, repaired and maintained whenever possible, carefully salvaging and re-using historic materials. If damaged beyond re-use or repair, any replacement materials or features should visually duplicate the historic original as closely as possible. Lost secondary volumes may be re-created if documented by historic photographs, plans or physical evidence.

#### 3.4.1 Planters

Masonry and wood planter boxes are very susceptible to water damage because they contain plants that require water, they capture precipitation and they're exposed to the freeze and thaw cycles of winter. Ensure that planters are protected from water damage.

Planters are often integral to entrances and associated with staircases. These relationships should be respected and retained.

#### 3.4.2 Chimneys

The relationship of chimneys to roof planes is an important feature of many homes. Roof planes are positioned behind chimneys, terminate at chimneys or partially or completely overlap onto the face of chimneys. These details should be respected and retained.

#### 3.4.3 Balconies

Since balconies are constructed of wood, they are even more vulnerable to the elements than masonry. They're subjected to the same waterproofing issues as roofs and the same repair and maintenance issues as wood siding.

### 3.5.0 PLANES

Since planes enclose and protect the interior of the houses, their maintenance is critical to the physical integrity of the houses. Planes are more vulnerable to change than the basic volumes of the house and their essential character can be easily damaged, even during the course of routine repairs and maintenance.

Their aesthetic contributions are just as important. It's essential to preserve the clarity of planes and how they meet and join, to preserve the integrity of open and projecting walls and roofs and to preserve the shallow relief or dimensionality that wall planes add to the exterior of houses in Arapaho Hills.

Original open and closed planes including windows, entrances, eaves and materials should be retained, repaired and maintained whenever possible, carefully salvaging and re-using historic materials. If damaged beyond re-use or repair, any replacement materials or features should visually duplicate the historic original as closely as possible. Lost planes, materials and features may be re-created if documented by historic photographs, plans or physical evidence.

### 3.5.1 Roof Planes

Before soliciting proposals from roofing contractors, take the time to understand the original design of a house's roof plane, eave details, roof surface, roof drainage system and how they relate to other functional and aesthetic elements of the lot and house design.

Fot conventional houses, roofing can be as simple as finding a somewhat competent contractor. In Arapaho Hills, the profile, pitch and detailing of open and closed roof planes is critical to maintaining the architectural integrity of the homes. The selection of a skilled roofer who can intelligently interface with the homeowner and other trades is essential. Require that historic preservation be addressed when requesting bids and proposals.

On highly visible roofs, retain or restore original tar and gravel roofing. Other roofs are acceptable when they're not visible from the street or part of a prominent view from neighboring houses above.

When replacing or repairing roofs, ensure that roofing nails don't penetrate and protrude below soffits or exposed roof decking above open beams and rafters.

On flat roofs, roofing contractors sometimes advise owners that installing a new, pitched roof surface that rises above the historic fascia is necessary to maintain positive drainage. This can compromise the horizontal form of the roof and damage the aesthetics of the house. Use contractors with a demonstrated ability to replace and maintain flat roofs. When adding insulation, keep the profile of the new roof surface below and behind the original height of the fascia.

Be careful to avoid the eyesores created by oversized, bulky, unpainted and uneven roof flashing, wrapping crudely over the roof fascia, adjacent walls, or chimneys.

Avoid replacing original roof drainage systems with surface-mounted gutters and new downspouts in prominent locations that clutter the volumes and planes of the house. Where surface mounted gutters have been previously installed, consider restoring the original drainage design.

Overly prominent skylights, swamp coolers, air conditioners and vents can compromise the appearance of roof planes. Care should be taken keep such installations as low in profile as possible. Where possible, consider inconspicuously installing exterior heat pumps or air conditioners at grade in side or rear yards, away from neighboring bedrooms.

Keep roofs and downspouts clear of leaves and debris that can block drainage and cause water to overflow onto exterior walls.

Homeowners are sometimes contacted by Xcel Energy to replace gas lines buried in concrete floor slabs in anticipation of potential gas leaks. Without direction, the new line may be located on the roof, damaging the appearance of the house. It can also drastically complicate roof repair and replacement. If directed and supervised, Xcel will install replacement supply lines at the juncture of the roof and wall, where it will be more unobtrusive.

### 3.5.2 Wall Planes

Retain the original character and detailing of open and closed wall planes.

Retain the historic appearance of projecting wall planes and wing walls. Removing a portion or all of a projecting wall plane compromises the character of a house. Such demolitions are often accompanied by sloppy masonry repair on the truncated wall, making any damage even more apparent.

Covering or replacing historic siding materials will damage the architectural integrity of a house. Deteriorated metal or wood siding can fail, allowing water penetration that can damage any historic siding beneath and the integrity of the entire wall plane. If such materials have been applied in the past, consider removing them, restoring original siding if it survives underneath or replacing it with new materials that duplicate original finishes.

Avoid inserting new windows, entrances or projecting bay windows that compromise the historic character of closed wall planes. Avoid enclosing open wall planes, such as those associated with carports. The interplay between open and closed planes is critical to maintaining the character and integrity of houses.

Avoid additions and plantings that obscure prominent design features formed by planes and compositions. Such changes negatively affect the historic appearance of the house.

### 3.6.0 WINDOWS

Window compositions function as both key decorative and functional features of the houses in Arapaho Hills. As a result, whenever a change is made for functional reasons, such as energy efficiency, care must be take to carefully consider its impact on the appearance of the house. The preservation of window compositions, especially those visible to the street, is critical to maintaining the design integrity of the neighborhood.

Original window compositions and components should be retained, repaired, maintained and retrofitted whenever possible, carefully salvaging and re-using historic materials. If damaged beyond repair, any replacement windows components should visually duplicate the historic original as closely as possible. Lost window compositions may be re-created if documented by historic photographs, plans or physical evidence.

### 3.6.1 Window Frames

Retain the consistent proportions of the original wood window frames. It is essential to the visual qualities of historic window compositions.

### 3.6.2 Window Glass

Clear and obscure glass was carefully utilized to maximize natural light while preserving privacy. Retain the original locations of both glass types. Many types of historic obscure glass are no longer manufactured and are difficult to replace at any price. Research can locate glass suppliers that offer the closest contemporary material match.

Glass should not be tinted or covered with applied films that visually alter the appearance of the windows.

When glass is replaced in fixed windows and the glass stops are not salvageable, new glass stops should match the profile of the historic glass stops.

To improve energy efficiency, fixed windows and operable wood sash, including awning and hopper sash, can be easily fitted with multi-pane glass.

Monitor and maintain all glazing compound. If neglected, deteriorating compound permit air and water infiltration, lowering energy efficiency and threatening window stability.

### 3.6.3 Operable Sash

On operable metal windows, the extra weight of multi-pane glass can strain hinges, cranks and frames. This can lead to window breakage and failure. Consider interior storm windows for comfort and energy efficiency of operable windows.

For metal sash, locate metal weather-stripping. The most common alternative, adhesive-backed foam, can easily deteriorate, fail and even damage metal window sash.

When painting operable sash, be sure to keep the interior frame and outer sash clear of excess paint. Regularly clean excess dirt and debris on these surfaces and regularly clean and lubricate operable window hardware. These can interfere with window closure, allow air and water infiltration, and potentially damage window operations.

### 3.6.4 Replacement Windows

The installation of replacement windows commonly alters a number of critical design elements of window compositions and adversely affects their visual relationship with the larger wall plane. These include the width of frames and sash, and the relationship of the glass to window frame and wall plane. Thick vinyl window frames are especially obtrusive, as they often cannot be painted to minimize aesthetic damage to the house.

Replacement windows most often have comparatively bulky and intrusive exterior storm windows and screens. These alter the appearance of windows by changing the original proportions of window frames and sash frames, interrupting the continuity of reflective glass surfaces and destroying the historic rhythm and composition of the combined window components.

Windows are especially vulnerable to insensitive replacement due to the aggressive marketing efforts of window suppliers and contractors. Ads for replacement windows fill television, radio, newspapers, magazines and are even hawked door-to-door.

Replacement contractors have one goal — to get you to rip out your “old” windows and replace them with their new windows. The reasons advertisers offer for window replacement appear convincing. Personal comfort, energy savings and higher resale value are

high on the list. These claims are not supportable. A historic window, properly maintained, repaired and retrofitted, can provide longer life, energy savings and increased comfort at less cost than a new replacement window while preserving the appearance and value of a historic house.

If replacing windows, ideally only previous replacement windows that have failed, take the time to locate new units that most closely resemble historic windows in material and appearance.

### 3.6.5 Storm Windows

Easily-fabricated interior storm windows are a cost-effective solution that will not visually alter the exterior of a home or physically damage historic windows. These storms are held in place by the same clips that carry original interior window screens. Felt weather-stripping between the storm and window frame allows air circulation, preventing condensation.

### 3.6.6 Adding or Removing Windows

Avoid adding new windows where they did not previously exist, as historic window placement and design is a key original design feature.

If a decision is made to abandon a window, most often when converting the adjacent interior spaces to new use, make every effort to retain all historic details. On the exterior, simply seal the window closed with all the details retained. On the interior, cover the window and frame with sheetrock or another interior finish without damage to original details. In this way, the historic window can be restored to use at some future time.

## 3.7.0 ENTRANCES

The preservation of entrance compositions and components is critical to maintaining the design integrity of the neighborhood. Entrance compositions are decorative and functional. As a result, whenever a change is made for functional reasons, such as security, care must be take to carefully consider its impact on house appearance.

Original entrance features should be retained, repaired and maintained whenever possible, carefully salvaging and re-using historic materials. If damaged beyond re-use or repair, any replacement materials or features should visually duplicate the historic original as closely as possible. Lost entrance features may be re-created if documented by historic photographs, plans or physical evidence.

### 3.7.1 Doors

Over the years, many original primary entrance doors in Arapaho Hills have been replaced, often for security reasons or to eliminate winter drafts. In this way, many visually intrusive new doors and hardware have appeared in the neighborhood.

Stock replacement doors and hardware readily available at consumer-oriented "do-it-yourself" stores are most often a poor solution for Arapaho Hills. They are largely traditional in style, often paneled, with "old-fashioned" faux stained glass windows and oversized, traditional hardware. When replacing non-original doors, choose simple solid wood doors that historically appeared in Arapaho Hills. These are readily available today from architectural suppliers.

Service and utility doors often remain intact. If lost or previously replaced with doors of inappropriate design, consider replacing them with historically appropriate doors, which commonly matched adjoining siding.

### 3.7.2 Entrance Details

When replacing previously lost components, including lighting, doorknobs or handles, locks, doorbells and mail slots, avoid new fixtures that mimic historical styles not original to Arapaho Hills in favor of simple, contemporary or industrial-looking fixtures and fittings. Salvaged historic fixtures from the period may also be appropriate.

Obscure glass that appears in many sidelights is no longer manufactured and cannot be replaced at any price. Research can help locate glass suppliers that offer the closest contemporary material match.

### 3.7.3 Screen and Storm Doors

Screen and storm doors do not appear to have been historic features in Arapaho Hills. If installed, choose simple frames to minimize visual disruption of historic entrances.

### 3.7.4 Removal or Relocation of Entrances

Removing or relocating entrances should be avoided, as it disturbs a key element of the historic house design. If entrances are to be abandoned for security reasons or due to

changes in interior use, they should simply be sealed in place with all their original exterior design elements and materials intact. Interior details should be encapsulated, or retained intact beneath new wall finishes. In this way, an entrance may be restored to use in future.

### 3.7.5 Garage Doors

Many garage walls and doors were originally flush, finished in the same wood siding materials to create a visually uninterrupted surface. Retain this historic treatment where it survives.

Regularly clean, lubricate and adjust garage door tracks, bearings and other mechanical elements to prevent misalignment that can cause doors to jam and fail.

Ensure that garage doors don't rest on the driveway when closed, where water can collect and absorb into the wood door or cladding materials.

Replacement garage door vendors frequently advise homeowners that original single-panel pivoting garage doors cannot be modified for use with electric garage door openers and must be replaced. This is untrue. Historic one-panel doors can be successfully mechanized.

Segmented garage doors, often paneled and sometimes with windows, commonly replace original doors or are used when carports are converted to enclosed garages.

If purchasing a stock segmented door, choose the most simple available design, avoiding details not historic to the neighborhood. Consider finishing such doors with house siding materials.

When inappropriate replacement doors are already present, using a single paint color across the face of the garage and surrounding wall can minimize visual intrusion.

## 3.8.0 EAVES

Eaves, the portion of the roof that projects above and beyond the wall planes, are a primary decorative feature of the houses in Arapaho Hills.

Original eave components should be retained, repaired and maintained whenever possible, carefully salvaging and re-using historic materials. If damaged beyond re-use or repair, any replacement materials or features should visually duplicate the historic original as closely as possible. Lost features may be re-created if documented by historic photographs, plans or physical evidence.

### 3.8.1 Fascia

Preserve or restore the historic detailing of the fascia. In the past, some fascia was altered, most often to simplify maintenance. If historic wood fascia is clad with metal or plastic materials, ensure there's no water penetration.These finishes can slow evaporation and hasten the deterioration of the historic wood elements that often survive beneath.

As noted in the guidelines for roof planes, the detailing of eaves is often damaged or obscured by sloppy or excessive roof flashing. Roofing contractors should be carefully supervised to ensure that their finish work does not compromise important elements of the eave detailing.

### 3.8.2 Soffits

Closed soffits can often disguise and delay detection of roof failure. Detailed inspection of other eave details and adjacent wall planes is necessary to locate problems above closedsoffits before deterioration can begin.

### 3.8.3 Exposed Beams and Rafters

When beams extend beyond the edge of the roofline, they're over-exposed to the elements and water penetration. Severely deteriorated beams can be saved by the application of new weather-resistant epoxy materials that infill areas of lost and damaged wood. Good quality primer and paint, regularly maintained, can ensure that these elements are stabilized and protected from future damage and loss.

## 3.9.0 MATERIALS

The quality, detailing, joining and finishing of materials is an important decorative feature of each house and Arapaho Hills as a whole.

Original materials and the manner in which they're combined and detailed should be retained, repaired and maintained whenever possible. If damaged beyond repair, any replacement materials should visually duplicate the historic original as closely as possible. Lost materials may be restored if documented by historic photographs, plans or physical evidence.

Material cleaning, repair and maintenance are best undertaken in moderate temperatures and out of direct sunlight.

**3.9.1 Stone, Brick and Block Masonry**
Masonry of block, brick and natural stone should never be resurfaced, stuccoed, painted (if previously unpainted) or altered. These transform a relatively maintenance-free material into one requiring on-going cleaning and re-painting. It also destroys a major historic feature of the house and neighborhood.

Tuckpointing repairs should use a mortar matching the strength, composition, color and texture of the original mortar. The width and profile of mortar joints should match the original. This is extremely important in Arapaho Hills, where the treatment of mortar joints is essential to the character of the homes.

Do not seal any previously unfinished masonry materials. Covering masonry, even with transparent sealers, can often trap moisture and during subsequent freeze-thaw cycles, can actually increase masonry damage.

Water-saturated brick can develop efflorescence, a chalky white coating. This can sometimes be removed by dry brushing with a plastic brush to avoid scratching or abrading the surface of the masonry.

To remove paint from previously painted masonry surfaces, research the most appropriate paint removers for the job and carefully test and follow product instructions.

Never sandblast masonry surfaces to remove paint as it causes permanent surface damage that promotes increasing deterioration.

Improper roof and chimney drainage can leave stains on masonry that compromise the appearance of house. If cleaning is necessary, normally only if the masonry heavily soiled, research gentle, preservation-appropriate cleaning products, carefully test on an inconspicuous location and religiously follow all instructions for use.

**3.9.2 Wood Siding, Other Wood Features**
Where possible, retain historic stained or unfinished wood surfaces.

Heavily damaged wood materials such as siding, sills or exposed beams can be saved and stabilized by the application of epoxy consolidants, which penetrate the fibers of the wood, encapsulate decay and preclude further ongoing deterioration. Research to establish the best product for individual uses and closely follow product instructions.

Any cleaning and maintenance on painted or stained wood surfaces and details should be carefully tested. When cleaning masonry, be particularly careful to avoid damage to the wood or surrounding materials and finishes.

**3.9.3 Paint and Stain**
See Appendix E.

**4.0.0 PREVENTATIVE MAINTENANCE**
After a lot and house are brought into good repair, they should be closely examined and maintained on a regular basis. This is far less costly than allowing materials and features to deteriorate to the point that they again require major repairs or replacement.

Maintenance inspections are recommended at least every six months. A maintenance checklist should addresses the unique features of each lot and house identified by survey and all potential damage and recommended repair issues addressed above.

Interior maintenance tasks can also be added to the schedule and checklist including annual furnace and water heater inspections and testing and battery replacement for fire, smoke and carbon monoxide detectors.

**5.0.0 NEW FEATURES, MATERIALS AND ADDITIONS**
**5.0.1 New Features**
Adding new exterior features to the lot or house that are visible from the street is not recommended.

**5.0.2 New Materials**
When replacing any original materials damaged or deteriorated beyond repair, take special care to match them as closely as possible. Some of these materials, especially brick, block, stone, operable window sash and obscure glass, are no longer commercially available. Investigate salvage yards for used building materials that match historic materials. Research visually equivalent new materi-

als through the internet or consultation with preservation professionals, architects, contractors, neighbors or homeowners with houses of similar style and period.
Avoid the use of new materials that did not historically appear in the neighborhood or those in traditional or historical revival styles.

**5.0.3 Previous Additions**
If the quality or location of previous additions is poor, consider removing them or altering and upgrading them to reflect the historic quality of the neighborhood.

**5.0.4 New Additions**
When radically remodeled or obscured by insensitive additions, the design qualities and proportions of a house can be damaged, reducing its value and negatively affecting adjacent houses or even a whole area of the community.

The massing, detailing and materials chosen for any addition should strictly adhere to the *Secretary Standards*, preferably as reviewed and approved by a historic preservation professional at the conceptual stage and prior to issuing drawings for bid and construction. Number nine of the *Standards* provides a brief overview of the preferred approach for additions in Appendix A.

Before proceeding with conceptual plans and final drawings, alert neighboring homeowners to avoid surprise and help preclude adversarial situations. This can help define neighbor concerns and create an environment in which plans can be amicably reviewed and approved by all concerned parties including the city.

When contemplating an addition, the highest level of consideration should be given to retaining the visual continuity of the surrounding streetscape and neighborhood. Additions should be located unobtrusively in side and back yards, in private areas of the lot not visible from the street. In this way, the historic proportions and massing of the primary and secondary volumes as visible from the street will be retained, along with their relationship with the topography and grade of the lot.

Additions should respect the scale of adjacent houses. Additions should reflect historic proportions and materials, not drawing attention to themselves or overwhelming adjacent houses by disrupting their historic access to views, light, air and privacy.

Refrain from introducing new volumes that have strong vertical proportions that violate the horizontality of the neighborhood or obscure the historic relationship between original primary and secondary volumes.

Carefully site any additions to avoid eliminating or obscuring key historic wall planes and plane relationships. All new wall and roof planes should be visually subordinate to historic planes. Avoid adding planes that introduce shapes, sizes and contours that are not original to Arapaho Hills, like arched vaults or high-pitch roofs.

When considering an addition, construction of a scale model will help envision how an addition should be shaped and scaled to avoid looming over, crowding, or blocking neighbor sunlight or views.

Additions that enhance a home's resale value are most successfully designed by professionals with a demonstrated understanding of the design values of the neighborhood. They should be rooted in an analysis of the individual house as originally designed, not based on other architectural styles or the work of other architects, even that of Frank Lloyd Wright.

**5.0.5 New Outbuildings**
Like additions, new structures such as backyard storage sheds should not be visible to the street or physically or visually intrude into the neighborhood's shared landscape or views.

**5.0.6 New Landscape Features**
The addition of new walls, fences or raised berms in, around or dividing front yards should be avoided to prevent disruption of the continuity between lots.

**A** **Secretary of the Interior's Standards for Rehabilitation**

**B** **Arapaho Hills Covenants**

**C** **Biographies**
Bruce R. Sutherland, architect
Clyde Mannon, builder

**D** **Architectural Style**
International Style
Usonian Style
Stylistic Characteristics

**E** **Arapahoe Acres**
**Technical Brief – Exterior Paint**

**F** **Arapaho Hills Subdivision Plat**

## SECRETARY OF THE INTERIOR'S STANDARDS FOR HISTORIC PRESERVATION

The *Secretary of the Interior's Standards* are regarded by public and private historic preservation professionals as the national standard for historic preservation in the United States. These *Standards* are the basis for the preservation recommendations that have been made throughout this volume.

The following provides an overview of the *Secretary Standards*. Consult a full copy of the *Standards* for detailed project guidelines for preservation, rehabilitation, restoration and reconstruction.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated

from the old and shall be compatible with the massing, size, scale and architectural features to protect the historic integrity of the property and its environment. .

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Full copies of *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (*Document 1992 0-327-512*) are available for purchase from History Colorado.

The National Park Service also publishes "Preservation Briefs" which cover topics including the repair and maintenance of painted and masonry surfaces.

All of this material is also accessible on-line at http://www.historycolorado.org/oahp/guidelines-historic-preservation-projects

The original covenants of Arapaho Hills are presented below. Though there are differing opinions on whether or not they're still legally in force, it seems clear from Section H-1 that Hawkins intended them to be perpetual.

The covenants are cited here primarily for historical reasons, and to illustrate that they do not duplicate the scope or intent of these *Historic Preservation Guidelines*.

*Recorded December 29, 1955*
*Book 948, Page 468*

**PROTECTIVE COVENANTS**
**ARAPAHO HILLS SUBDIVISION**

B-l The residential area covenants in their entirety shall apply to blocks one (1) to four (4) inclusive, Arapaho Hills Subdivision, 1st Unit.

C-I No lot shall be used except for residential purposes. No building shall be erected, altered, placed, or permitted to remain on any building plot other than one detached single-family dwelling not to exceed two stories in height and a private garage for not more than three cards and such accessory buildings as may be approved by the Architectural Control Committee.

C-2 No building shall be erected, placed, or altered on any lot until the construction plans and specifications and a plan showing the location of the structure have been approved by the Architectural Control Committee as to quality of workmanship and materials, harmony of external design with existing structures and as to location with respect to topography and finish grade elevation. The Architectural Control Committee shall approve the exterior colors of all houses and the exterior of no house shall be repainted a different color without approval of the committee. All fences or walls shall be approved by the Architectural Control Committee prior to erection. The top line of all fences shall be horizontal (not parallel to the ground) with uniform step downs used to follow the contours of the ground. No wire fences shall be erected except upon written authority of the Committee. No fence shall be erected, placed, or altered on any lot nearer to any street than the minimum building setback line unless similarly approved. Approval of the Committee shall be obtained on the location and type of all trees and shrubs having a potential height of over three feet (3'). No T.V. or radio antenna or tower shall be erected without the written approval of the Committee.

C-3 No dwelling shall be permitted on any lot at a cost of less than $12,000 based upon cost levels prevailing on the date these covenants are recorded, it being the intention and purpose of the covenant to assure that all dwellings shall be of a quality of workmanship and materials substantially the same or better than that which can be

produced on the date these covenants are recorded at the minimum cost stated herein for the minimum permitted dwelling size. The main floor living area of the main structure, exclusive of one-story open porches and garages, shall be not less than 1000 square feet for a one-story dwelling, nor less that 1400 square feet of total living area in a split level or two story structure with no limitation on square footage of any one level of said split level or two story structure.

C-4 No building shall be located on any lot nearer to the front lot line or nearer to the side street line than the minimum building setback lines shown on the recorded plat. In any event no building shall be located on any lot nearer than 25 feel to the front lot line, or nearer than 10 feet to any side street property line. No building shall be located nearer than 10 feet to an interior building plot. No dwelling shall be located on any lot nearer than 25 feet to the rear lot line. Garages and other permitted accessory buildings, whether attached to dwelling or not, may be erected within the rear 25' of any lot, but not nearer than 10' to the rear lot line. For the purposes of this covenant, eaves, steps, open porches, balconies, flower boxes and retaining walls, etc., shall not be considered as a part of a building, provided, however, that this shall not be construed to permit any portion of a building, on a lot to encroach upon another lot.

C-5 No dwelling shall be erected or placed on any lot having a width of less than 75 feet at the minimum building setback line nor shall any swelling be erected or placed on any lot having an area of less than 10,000 square feet, except upon approval of the Architectural Control Committee covering a minor deficiency in a plated lot size.

C-6 Easements for installation and maintenance of utilities and drainage facilities are reserved as shown on the recorded plat and over the rear 8 feet of each lot.

C-7 No noxious or offensive activity shall be carried on upon any lot, nor shall anything be done thereon which may be or may become an annoyance or nuisance to the neighborhood.

C-8 No structure of a temporary character, trailer, basement, tent, shack, garage, barn or other outbuilding shall be used on any lot at any time as a residence either temporarily or permanently.

C-9 No sign of any kind shall be displayed to the public view on any lot except on professional sign of not more than one square foot, one sign of not more than five square feet advertising the property for sale or rent, or signs of any size used by a builder to advertise the property during the construction and sales period.

C-10 No oil drilling, oil development operations, oil refining, quarrying or mining operations of any kind shall be permitted upon, under, or in any lot, nor shall oil wells, tanks, tunnels, mineral excavations or shafts be permitted upon or in any lot. No derrick or other structure designed for use in boring for oil or natural gas shall be erected, maintained or permitted upon any lot.

C-11 No animals, livestock, or poultry of any kind shall be raised, bred or kept on any lot, except that dogs, cats or other household pets may be kept provided that they are not kept, bred, or maintained for any commercial purpose.

C-12 No lot shall be used or maintained as a dumping ground for rubbish. Trash, garbage or other waste shall not be kept except in sanitary containers. All incinerators or other equipment for the storage or disposal of such material shall be kept in a clean and sanitary condition.

C-13 No building or structure except a 2'6" high retaining wall or utilities or drainage facilities shall be placed or permitted to remain on any corner lot within the triangular area formed by the street property lines and a line connecting them at points 25 feet from the intersection of the street lines, or in the case of a founded property corner from the intersection of the street property lines extended. The same sight-line limitations shall apply on any lot within 10 feet from

the intersection of a street property line with the edge or a driveway or alley pavement. No tree shall be permitted to remain within such distances of such intersections unless the foliage line if maintained at sufficient height to prevent obstruction of such sight lines.

G-1 The Architectural Control Committee is composed of

Edward B. Hawkins
2921 South Franklin Street
Englewood, Colorado

Clyde E. Mannon
4090 Everett Street
Wheatridge, Colorado

Charlotte L. Hawkins
2921 South Franklin Street
Englewood, Colorado

A majority of the Committee may designate a representative to act for it. In the event of death or resignation of any member of the Committee, the remaining members shall have full authority to designate a successor. Neither the members of the Committee, not its designated representative shall be entitled to any compensation for services performed pursuant to this covenant. At any time, the then record owners of a majority of the lots shall have the power through a duly recorded written instrument to change the membership or the committee, or to withdraw from the committee or restore to it any of its powers and duties.

G-2 The Committee's approval or disapproval as required in these covenants shall be in writing. In the event the committee, or its designated representative, fails to approve or disapprove within 30 days after plans and specifications have been submitted to it, or in any event, if no suit to enjoin the construction has been commenced prior to the completion thereof, approval will not be required and the related covenants shall be deemed to have been fully complied with.

H-1 These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of twenty-five years from the date these covenants are recorded, after which time said covenants shall be automatically extended for successive periods of ten years unless an instrument signed by a majority of the then owners of the lots has been recorded, agreeing to change said covenants in whole or in part.

H-2 Enforcement shall be by proceedings at law or in equity against any person or persons violating or attempting to violate any covenant either to restrain violation or to recover damages.

H-3 Invalidation of any one of these covenants by judgment or court order shall in no wise affect any of the other provisions which shall remain in full force and effect.

Omitting restrictions herein, if any, based on race, color, religion or national origin.

*[This line was evidently added to all active recorded deed covenants as a result of legal ruling/s against discrimination. Date unknown.]*

**BRUCE R. SUTHERLAND, ARCHITECT (1931–1993)**

Bruce R. Sutherland was born on October 20, 1931, in Denver. He attended three years at South High School, graduating with a degree in 1949. Little is known of his family except that his father is said to have worked with the Home Builders' Association of Metropolitan Denver.

Sutherland studied at the University of Denver (DU) School of Architecture and Planning. DU records show him listed as a first year student in the winter quarter of 1949-50. When the school closed after the spring semester of 1952, Sutherland had completed only three years of studies toward his degree. Along with a number of other students who had partially completed the program, he moved to Salt Lake City where he completed his education at the University of Utah, receiving a B.F.A. in 1953 and a B.A. in 1954. He became a registered Colorado architect in 1956, at that time the youngest architect ever licensed in the state.

As he worked toward his degrees and after graduation, Sutherland accumulated twelve years of experience working as a draftsman on residential, school, church, institutional and commercial building design projects. From June 1948 to August 1952 he worked for architect Joe Lort, Jr., in Denver. After moving to Salt Lake City to complete his degree he worked from August 1952 to July 1953 for the prominent architectural firm of Ashton, Evans & Brazier and from August 1953 to July of 1954 for Underwood & Ehlers. Upon Sutherland's return to Denver he worked in the office of Charles Gordon Lee from July of 1954 to March of 1961. Both Lort and Lee were important Modernist architects in Denver.

Lort was a follower of Frank Lloyd Wright who designed a number of noteworthy residences in the Hilltop neighborhood, a local center for Modernism and Bow Mar, adjacent to Arapaho Hills, before leaving Denver.

Charles Gordon Lee apprenticed under Frank Lloyd Wright. He earned his architectural degree from the University of Pennsylvania in 1940, was a Taliesin Fellow from 1940-41 at Taliesin East and from 1947-48 at Taliesin West. Though he died at the age of 48, he is credited with a number of important Modern buildings in Colorado, including his own home at 1133 S. Windemere in Littleton and, in Denver, St. Paul's Episcopal Church, Knapp Elementary School, Denison Elementary School, Capitol Mortuary Office Building and several chapels for the Mortuary. He served as the Taliesin supervisor for the Rocky Mountain National Park Administration Building, an important National Register-listed Mission 66 project.

In 1956, through an introduction provided by his father, Sutherland met builder Clyde Mannon. Mannon hired him to design a home for the last remaining lot in the Arapahoe Acres subdivision and to begin designing homes in Arapaho Hills. Sutherland's blueprints for approximately thirty-six Arapaho Hills' houses survive, the first dated February 26, 1956. These drawings are held in a neighborhood archive supervised by homeowner Tom Perry.

Arapahoe County records show that Hawkins Associates, Inc, sold Block 3 / Lot 16 or 5420 Manitou directly to Bruce Sutherland and his first wife Jo Ann in October of 1957. The house was completed in 1959 and then sold in March of 1961, possibly due to their divorce.

In 1957-58, concurrent with his work at Arapaho Hills and his tenure with Lee, Sutherland designed the "High Country Home," a "House of the Future" built as the centerpiece of the 1958 Denver Home Show. The show was held at the University of Denver field house and the home constructed by Mannon Associates, Inc., at 1940 S. York Street. Andrew Sutherland, believed to be Bruce's father, was show director for the sponsor, the Home Builders Association of Metropolitan Denver.

In 1961, still concurrent with his work in Arapaho Hills, Sutherland opened his own firm. He was quickly hired to design the Bergenhof, an Alpine-style restaurant and warming hut at the foot of the new main

chair lift area in Breckenridge, Colorado. As real estate development surged in the Denver Metropolitan area due to the massive population growth following World War II, so did new ski resorts in the Rocky Mountains. The development of these new commercial ski areas was spurred by the efforts of former members of the 10th Mountain Division of the U.S. Army, which had trained during the war at Camp Hale near Leadville, Colorado.

In 1963, the success of the Bergenhof project led Sutherland to relocate his offices to a small Modern office building at 1129 Cherokee Street in Denver. That same year, Sutherland's work at Arapaho Hills ended as home sales slowed and Mannon ended construction in the subdivision. The last of the surviving Sutherland plans for Arapaho Hills is dated February 14, 1963.

By 1965, the *Denver Post* reported that Sutherland had $5 million in contracts for ski and summer resort construction already completed or on the drawing boards. The article stated: "...Sutherland and his staff have 'gone national' as designers of lodges, condominium apartment complexes and highway hotels with a resort-area flair," and "Sutherland's high country designs are set for construction in many of the major ski and summer resort areas of America."

Sutherland established relationships with some of the major national hotel chains. A new 84-unit Ramada Inn was designed for construction near Frisco in the "Dillon-Breckenridge-Frisco ski, water sports and summer resort area, which is growing beside Dillon Reservoir, Colorado's newest and largest lake." The project was intended to serve as a model for dozens of special resort-area Ramada Inns. A $1.2 million 89-unit Sutherland-designed Holiday Inn was under construction at the foot of Winter Park's major slope, "...the first venture of the nationwide Holiday Inn group into the resort country."

Other Frisco-Dillon projects included a 24-unit condominium and an expansion of his original 66-unit Dillon Pines Lodge. For Idaho Springs he designed a 24-unit apartment house. Also on the drawing board was a 20-unit condominium at Mount Werner, "...the famed Steamboat Springs ski area where the sport had its beginning in Colorado and where learning to ski is part of the curriculum in the town's school." The *Denver Post* article also revealed: "He's working – or has completed – numerous mountain-area residences, major remodeling at Alpine Haus at Lake Eldora near Boulder and is working out a master plan for a 7,000-acres hunting fishing and skiing resort near Missoula, Mont."

On the same day that the *Denver Post* featured Sutherland's ski country work, an article entitled "$65,000 Sought; Study Planned to Chart Skiing's Uphill Course" appeared, highlighting the financial and planning implications of the ski industry for the state of Colorado. The article demonstrated the exponential growth that was fueling Sutherland's architectural practice:

"Based on current estimates, the average ski visitor to Colorado spends two to three times more than the average summer visitor and stays longer. The state's slopes had more than 1.2 million skier visits last season and ski spending was estimated for the year at $65.8 million.

The number of skier visits was up 37 per cent over the previous year and up 448 per cent over 10 years ago. Capital investment in lifts and ski operator facilities in the state is over $30 million and $17 million worth of new lodges, ski area apartments, restaurants, etc., was built last summer.

Last year, Hertz ski car rentals increased 650 per cent. United Air Lines general ski travel was up 100 per cent and ski plans charters were up 190 per cent. Continental Trailways ski bus travel climbed 100 per cent."

The *Denver Post* quoted successful ski industry architect Bruce R. Sutherland: "The ski boom has just begun."

In 1967, Sutherland's success and reputation led Frederic "Fritz" Benedict to invite him to join his firm, Frederic A. Benedict & Associates, Architects and Planners, in Aspen.

In the 1950s and 60s, the work of the Aspen Skiing Corporation placed Aspen at the center of the developing Colorado ski industry. Aspen was also unique in its development, under the auspices of Walter Paepcke of the Container Corporation of America and his wife Elizabeth, into an internationally recognized cultural center that included the Aspen Institute, the International Design Conference in Aspen and the Aspen Music Festival and School.

Architect and planner Benedict and designer and architect Herbert Bayer were central to the transformation of Aspen from a sleepy mining ghost town into a prominent ski and cultural resort. Margaret Supplee Smith's September 2010 *Aspen's Twentieth-Century Architecture: Modernism 1945-1975* provides an excellent overview of the subject. She relates that Frederic "Fritz" Benedict (FAIA, 1914-1995), a native of Wisconsin, earned a Bachelor's and Master's Degree in Landscape Architecture, at the University of Wisconsin, Madison. In 1938, he then joined Wright's Taliesin in Spring Green, Wisconsin, serving as head gardener. During the course of the next three years he moved between Taliesin and Taliesin West in Scottsdale, Arizona. During his travels, Benedict, an avid skier, discovered Aspen, Colorado. After service with the 10th Mountain Division, which trained outside of Leadville at Camp Hale, Benedict returned to live in Aspen. He purchased a 600-acre ranch on Red Mountain and began to design houses that reflected the influence of Wright.

In 1946, Herbert Bayer and his wife Joella moved to Aspen at the urging of Walter and Elizabeth Paepcke to help them realize an international arts and cultural community in Aspen. Bayer was a world-renown member of the Weimar Bauhaus and had earned his reputation as an innovative type designer, typographer, photographer and graphic and exhibition design in Germany. Paepcke, head of the Container Corporation of America, admired Bayer's work and the firm became one of Bayer's primary clients after his move from Germany to New York City. Bayer, like Benedict, was also an avid skier.

Benedict became Bayer's brother-in-law, marrying the sister of Bayer's wife Joella. Benedict's work was based on the organic Usonian architecture of Wright and Bayer's reflected the International Style of the Bauhaus. The distinct stylistic concerns of the two men paralleled those of Edward Hawkins and Eugene Sternberg in Arapahoe Acres.

Benedict and Bayer both received Colorado architectural licenses on the basis of experience rather than examination. They successfully collaborated on numerous Modern projects, especially at the Aspen Design Center and the Music Association of Aspen. Under their influence, Aspen became a center for architectural Modernism in the post-World War II years in Colorado.

From the 1940s to the 1980s, Benedict's firm cultivated the architects that dominated Aspen architecture for decades, including Ellie Brickham, Jack Walls, Robin Molny, Ellen Harland, Theodore Mularz, George Heneghan, Dan Gale, John Rosolack, Robert Sterling, Janver Derrington, Dick Fallin, Dierter Zenker, Tom Duesterberg, Bruce Sutherland, Arthur Yuenger and Harry Teague, among others. He also acted as an important mentor to a changing group of Taliesin associates, including Charles Gordon Lee, with whom Bruce Sutherland had been employed in Denver.

Joining the Benedict firm, Sutherland found himself in a congenial environment not only for ski industry master planning and design, but for architectural Modernism as well. Though Scandinavian, Nordic and other historic European architectural forms heavily influenced much of Colorado's ski industry development, Sutherland, like Benedict and Bayer, was a Modernist at heart.

From 1967 to 1975, Sutherland was the architect in charge of the design and construction of the Snowmass Village Mall, the original Snowmass condominiums and lodges and Breckenridge Ski Village. He was involved in the design and construction of facilities for the Music Association of

Aspen (MAA) and the Aspen Institute. Condominium projects included Aspen Square, Aspen Alps and the Gant. Other commercial work included, among others, The Tippler, a legendary Aspen bar and the Bank of Snowmass. Sutherland and Benedict were also responsible for much of the master planning for many of the ski areas in Colorado, including Vail and Winter Park/Mary Jane. The work of the firm not only changed the face of Aspen, it served as a model for the design of many other Colorado and national ski resorts.

In 1976, as the local economy slowed, Sutherland relocated to Oakland, California, to work for Tom Wilson, developer of the Aspen Square condominiums. In 1982 he returned to Aspen. On an application form submitted to transfer his membership from the East Bay California AIA Chapter back to the Colorado West Chapter, he listed his position as Vice President of Benedict Associates, Inc. and indicated that he was licensed to practice architecture in Colorado, California, Utah, New Mexico, Texas and Florida.

After Sutherland's return to Aspen in 1982, the firm was renamed Benedict, Sutherland and Duesterberg Ltd. and continued to design important projects in Aspen and throughout ski country. Partner Thomas J. Duesterberg was a licensed professional engineer. The firm also included Janver C. Derrington, AIA. By 1987, Benedict had moved into semi-retirement and the firm was renamed Sutherland Fallin, Inc. Richard Fallin was a talented interior designer.

Sutherland died at the age of 62 on June 8, 1993, within a year after undergoing heart transplant surgery. His memorial service was held in Paepcke Park in Aspen on June 20, 1993. At the time of his death, he was living in Basalt with his second wife, Elaine. Benedict died on July 8, 1995, while undergoing medical treatment in California. Richard Fallin formed a partnership with licensed architect John Baker after Sutherland's death. Fallin now lives in retirement abroad.

**CLYDE MANNON, BUILDER**
**(1918 - )**

A key component of Modern architecture is reductivism, in which the traditional vocabulary of historic European architecture such as columns with capitals, cornices and other classical decorative ornaments are simplified, adapted from non-European sources, or eliminated. In their place, the emphasis is on simplicity of expression, the massing of exterior forms reflecting the functionality of the interior spaces and the honest use of new and traditional construction materials. The quality of the materials and the skill with which they are combined and joined, is essential to the construction of quality Modernist buildings.

During the course of his career, Clyde Mannon became a recognized and respected builder of Modern, architect-designed homes throughout the Denver Metropolitan area.

Builder Clyde Mannon was descended from Bavarian emigrants who prospered selling supplies to miners in Breckenridge for cash or stakes in mining operations. The family first purchased land adjoining what is now Red Rocks Park and later moved to a 160-acre ranch in Golden. When the Coors family began buying up the valley to secure water rights for their brewery operation, the Mannons sold their water rights to the city of Golden.

The son of James and Gertrude Mannon, Clyde Mannon was born on May 18, 1918, on the family farm east of Golden, now Rolling Hills Country Club. He attended the rural, one room Maple Grove School, later demolished for the Applewood Shopping Center. He was a 1935 graduate of Golden High School. He had hoped for a career in aeronautical engineering, but the money was not available. His grandmother had promised to fund his attendance at Colorado A & M, now Colorado State at Fort Collins, but she died before Clyde completed high school.

Instead, Clyde took a position at the Coors Porcelain Plant. Two weeks later, when organizers attempted to unionize the plant, Coors closed the company. Mannon then joined a laborers union and began to work

on the construction of Ralston Dam, about five miles north of Golden on State Highway 93 to Boulder. He worked as a carpenter's helper or running pumps or jackhammers. After the completion of the dam, he worked at Coors Brewery from 1939 to 1944 as an inspector and machine maintenance man. From 1944 to 1945 he enlisted in Army Air Corps and attended pilot training in Texas and California. At the end of the war, Mannon was given the choice of discharge or continuing with the program. He chose to return to Golden and, briefly, to Coors.

Through his involvement as a charter member of the Golden Lions Club, Clyde became acquainted with fellow member Verne Lacer, who had started a pre-fabricated housing business, Construction Products Company, in partnership with Edward Hawkins. Clyde, who had continued to pursue carpentry largely as a hobby after his work at Ralston Dam, took a vacation from Coors to work at the firm, which he then joined as shop superintendent in 1945. The shop was located at 14th and Harlan in Lakewood. When the erection of the firm's first pre-fabricated home was shut down by the construction union, Hawkins and Lacer ended their partnership.

Hawkins then acquired the site for a new residential subdivision, Arapahoe Acres. He organized General Investments Company to finance the project and Hawkins Associates, Inc., to build the homes. Hawkins and Mannon were both stockholders and officers in both companies. As Arapahoe Acres neared completion in 1957, Hawkins turned the project over to Mannon and his firm Mannon Associates, Inc., who hired Sutherland to design the final home in the neighborhood at 1521 Dartmouth Street. Mannon brought his brother-in-law, Roy Claar, into Mannon Associates as a partner. Claar became superintendent of all the carpentry crews, while Mannon supervised all other aspects of home construction and sales.

Concurrent with the last years of construction at Arapahoe Acres, Mannon had located a property to the south in unincorporated Arapahoe County and Hawkins purchased it in early 1955 for a second residential subdivision project – Arapaho Hills. When Hawkins resigned as project designer after the construction of only the sales office / woodshop and a single home, Mannon continued construction on the project working with Sutherland. Mannon was a licensed real estate broker and handled all the home sales in Arapaho Hills. When sales slowed in 1964-65, Mannon ended project construction and sold his remaining lots to another builder.

At the same time that Mannon was building Arapaho Hills, he bought 400 acres for a new housing development in Deer Creek Canyon, across the road from Ken Caryl Ranch. Despite the assurances of a consulting water engineer, a 957-foot well produced little result. Unable to secure an alternative water supply for the project, Mannon sold the land piece by piece, never building a single house. Ultimately, Johns Manville built their headquarters across the road from the property, bringing their own water to the location.

Also concurrent with Arapaho Hills, a neighborhood homeowner who worked for an international construction firm approached Mannon to build a large tract of low-cost housing in Venezuela. Mannon flew to New York to sell the project, but plans were aborted when Castro came to power in Cuba in 1959.

While Mannon was ending operations in Arapaho Hills, he began to focus on commercial building and then left construction entirely, purchasing a successful Dairy Delite restaurant franchise adjacent to the Colorado School of Mines in Golden. Mannon devoted himself to the restaurant and then purchased adjacent properties for rental. After nine years of operation, he sold the restaurant and property and retired. He emerged from retirement at the request of the widow of a long-time friend who owned a real estate office in Golden. Mannon agreed to join the firm, which then operated under his real estate license. He subsequently bought the company in partnership with a fellow salesperson. After seven years, the two men sold the firm and Mannon retired for the second and last time.

Throughout the course of his career as a builder, Clyde Mannon also built single homes for developers and Modern architects throughout the Denver metropolitan area including some Sternberg-designed homes in the Orchard Hills development, in which Sternberg was a partner; some for Hawkins and Sutherland, who were designing individual homes in Denver's Southern Hills; and five houses for prominent Denver Modernist architect Carl Groos. Mannon also built a number of homes that were featured in the Denver Parade of Homes over the years. Altogether, Mannon built approximately 100 individual custom-designed homes in the Denver area.

Mannon was a member of the Home Builders Association of Metropolitan Denver, which was a local affiliate of the National Association of Home Builders (NAHB). He was very active in the Small Builders Subcommittee, which met regularly, mostly at the Denver Press Club. He served in a number of positions and was elected Director of the organization in 1964. Mannon was a charter member and one-time president, vice-president and director of the Golden Lions Club. He was a charter member and one-time secretary of the Wheat Ridge Lions. He lives in retirement in Golden, Colorado.



**ARCHITECTURAL STYLE IN ARAPAHO HILLS**

The homes of Arapaho Hills reflect two distinct currents of 20th Century architecture — the International Style (1925 to present) and Usonian Style (1930 to present).

Historically, both styles are related to the work of Frank Lloyd Wright. The influence of Wright's Prairie Style (1900–1920) was a dominant force in the development of nearly all modern architecture after its inclusion in the widely influential Wasmuth Portfolio published in Germany in 1910. The Art Deco Style, the International Style and the Art Moderne Style all have influences which can be traced to Wright's early, Prairie Style work.

**The International Style**

The International Style in architecture first appeared in Germany and France in the 1920s. By the 1930s, it was firmly established in Europe and the United States.

When the Nazi government outlawed modern architecture in Germany and closed the famous Bauhaus school of design, many of the key figures instrumental in the development of the International Style emigrated to the United States. The arrival of many of the founders of the International Style movement became essential to the ultimate triumph of the style in the United States during the first decades after World War II.

The International Style is the expression of two interrelated concepts: functionalism and reductionism. Functionalism is the tendency to generate the design of a building as a product of an analysis of functional criteria. Reductionism is the tendency to reduce the elements in a building's design to their most basic expression, resulting in an architecture of stark simplicity.

Utilizing these guiding concepts, architects working in the International Style have produced a sizeable body of work, the best of which are important buildings of exceptional elegance.

**The Usonian Style**

The Usonian Style is based on Frank Lloyd Wright's later work. It first appeared in Wright's work of the 1930s, engendering a wide following. His architectural practice diminished by the Depression, Wright turned to social philosophy and planning. He conceived of decentralizing an increasingly urban America in favor of low density communities governed by a social, political and economic system which Wright referred to as "Usonian Democracy." His Usonian Style of architecture reflected his social ideals: the buildings were designed for economical construction and to be energy efficient within their specific climate zone.

The Usonian Style is based on Wright's concept of Naturalism. Each architectural project is seen as having a "natural" solution

derived from its function and site. Naturalism is, in this sense, closely associated with functionalism.

The influence of traditional Japanese architecture is also seen in the Usonian Style. They share open floor plans, flowing interiors with movable screen partitions, an abundance of natural light, overhanging eaves and shallow pitch roofs.

**Stylistic Characteristics**
The International Style and the Usonian Style share many elements of design. In Arapaho Hills, the line between the styles becomes even more indistinct.

Each house in Arapaho Hills can be regarded as a point on a stylistic continuum with the International Style at one end and the Usonian Style at the other.

**Form, Mass and Composition** Both the International Style and the Usonian Style are conceived as architectures of volume and can be viewed as abstract sculptural forms. They reflect a cubist conception of volume, often displaying multiple blocks of varying form and scale massed within a single building. Axial symmetry is abandoned in favor of asymmetrical composition. Both styles are overwhelmingly horizontally oriented.

**Roof Forms** In both styles, flat roofs predominate. The International Style also includes folded plate roofs; the Usonian Style includes low pitch roofs. Walls are eaveless or the roofs extend out to form deep eaves which cantilever over the walls beneath. In the International Style, the cantilever serves to dramatize the horizontality of the building. In the Usonian Style, it is also intended to provide shelter and climate control.

**Windows** In both styles, windows are not simply glass filled openings in walls. Glass is used as a continuation of walls in other materials, or in some cases, where large expanses of floor to ceiling glass or corner windows appear, form the wall itself. Bands of ribbon windows emphasize horizontality. Windows often serve a decorative function with narrow vertical or small square windows punctuating walls. Window size, scale and form is often determined in response to the site, the orientation of the building, or on the need for maintaining privacy, views, light, warmth or protection from heat.

Both styles incorporate functional sunscreens that are also decorative elements. In the Usonian Style, windows are often transformed into simple geometric compositions by the use of muntins.

**Materials** In the International Style, buildings are most often designed in highly finished industrial materials like concrete, aluminum and glass. Where more natural construction materials are utilized, they are usually painted, stuccoed or finished to an industrial appearance. International Style buildings are most often monochromatic, frequently white. In the residential setting of Arapaho Hills, however, the International Style is softened by the use of natural materials and earthtone colors more closely associated with the Usonian Style.

In the Usonian Style, natural materials like glass, wood, stone, brick and concrete block are favored. Materials are often combined and dramatically juxtapositioned. The overall horizontality of the buildings is emphasized by raked, horizontal masonry joints and the use of horizontal lapboard. Usonian Style buildings display a broad palette of earthtone colors. Brick and natural stone are exposed and wood and concrete block are painted in matching or complimentary earthtones.

In both styles, the same materials used on the building's exterior reappear inside as interior finishes and extend outward, sometimes forming defining elements of the surrounding landscape.

**Ornament** In the International Style, there is no ornament save the joining of materials and forms.

In the Usonian Style, though the materials form a key decorative element, simple, geometric ornament of rectangles, squares and triangles often appear. Little of this decoration appears in Arapaho Hills, where

the forms and decoration usually associated with the Usonian Style are often abstracted into a more austere aesthetic more closely associated with the International Style. Neighborhood homes do display another decorative element of the Usonian Style — battered walls, canted eaves and balconies and angle-cut exposed beams that provide a dynamic, decorative contrast to the overwhelming horizontality of the buildings.

In both styles, because the ornament is inherent in the materials and the manner in which they are joined, the quality of the design, materials and craftsmanship is especially important.

## APPENDIX E

In March of 2003, in conjunction with a grant from the State Historical Fund awarded by the Colorado Historical Society, Arapahoe Acres homeowner Dave Steers prepared a series of technical briefs on neighborhood preservation issues. An introduction states:

"The Arapahoe Acres Preservation Network is constantly working to find new technical information and resources. Please contact Dave Steers at 303-783-0664 to share information or to receive updated information, references and resources that may have become available since publication of this technical brief. The technical briefs are expected to be evolutionary documents that will grow with feedback from the experience of individual homeowners."

The six documents addressed preservation issues associated with masonry, fencing and gates, exterior paint, windows, roofs and gutters, heating and cooling and garage doors.

An edited version of the exterior paint technical brief follows. Copies of all six briefs are directly available from Dave Steers.

This is included for the technical information provided, but also to show the type of activity than can promote a community-wide ethic of historic preservation.

**EXTERIOR PAINT**
**TECHNICAL BRIEF #3**
**Provided by the Arapahoe Acres Historic Preservation Network**
**Written by David Steers**

**Conducting an Exterior Paint Inspection of Your Home**
In order to ensure that a home's exterior paint remains in good condition, regular inspections are necessary. A close, yearly inspection of all exterior paint is recommended.

When conducting exterior paint inspections, look for the following:

*Sources of Potential Water Damage*
- Examine the roof surface, roof flashing, chimney caps, weather caps, gutters, and downspouts to ensure their integrity and good repair.
- Examine sills to ensure that water is quickly and completely draining away from the house.
- Examine plants to ensure that they do not come in contact with painted surfaces.
- Examine the painted surfaces for signs of peeling, blistering or staining. These conditions are commonly the result of moisture problems.
- Look for any weathered or deteriorated wood, such as fascia, posts and exposed beams.

*Sun and Temperature Damage*
Examine the painted surfaces for signs of cracking, crazing or severe chalking. Cracking or crazing (fine cracking) results when paint

becomes hard and brittle and is no longer able to expand and contract with the wood substrate during temperature changes. Cracking and crazing will allow moisture to enter and further deteriorate the paint and the wood beneath the paint. Chalking is a natural result of long term exposure to ultraviolet rays, but severe chalking is an indication of the need for repainting.

**Methods of Repair**

*Cleaning*

Dirt and organic matter that clings to painted exterior surfaces can often be removed with a strong direct spray from a garden hose. Material which is difficult to remove can be scrubbed off using a mop or a medium-soft bristle brush with TSP dissolved in water, or 1/2 cup of household detergent in a gallon of water. After thorough rinsing and complete drying, the surface should be evaluated to determine whether or not it is necessary to repaint. In many circumstances, cleaning of the surface is all that is required.

*Preparation for Repainting*

When repainting is necessary, it is one expert's opinion that 85% of a good paint job is in the preparation.

To begin the process, any existing paint that is crazing, cracking, wrinkling, peeling or blistering should be scraped and sanded, possibly after careful removal with a heat gun. A paint scraper or a putty knife can be used for scraping. Sandpaper, a sanding block or a sanding sponge can be used to further smooth out the surface after scraping. When necessary, a mechanical sander can be used for larger surfaces. Prior to mechanical sanding, evaluate any surfaces to be sanded to determine whether mechanical sanding could have the effect of removing a desired original texture, such as the texture of rough cut wood.
If vines have been removed from the surface to be painted, ScotchBrite pads can be used very effectively to remove the many plant anchors that will remain on the surface. ScotchBrite pads are lightly abrasive and generally non-damaging when used carefully.

Exposed galvanized metal parts of the house, such as new downspouts or flashing, should be wiped down with vinegar to remove any oils which could prevent proper adhesion of the paint.

If any wood requires repair or replacement, this should be done before repainting. Excellent products for the repair of deteriorated wood are LiquidWood and WoodEpox, both manufactured by Abatron. LiquidWood penetrates and reinforces rotted areas such as fascia and window sills and frames. It also water-proofs and insect-proofs wood after penetrating and hardening. WoodEpox is used to fill cracks, holes and voids and to replace lost sections in window sills, fascia, posts and other features. It can be sawed, nailed, planed, sanded, painted, et cetera, just like wood. Both products are highly stable and weather-resistant.

Exterior spackling compound can be used for cracks that are on one board only. Caulk will allow movement, and should be used when filling between boards. Caulk does not sand well, so it should applied carefully. A finger that has been wetted with water can be run along caulk to smooth it into a corner or crack.

Prior to any repair work, priming or painting, the surface to be painted should be cleaned as described in the section titled "Cleaning", above. Power washing is a method that should only be utilized if great care is taken. Only low water pressure should be used because high water pressure can have the effect of "raising the grain" on some wood. This occurs when the softer wood material is removed by the power washing process, leaving the harder wood.

*Priming*

Based on the following criteria, priming should be done as required.

- When there are bare wood surfaces, primer will seal the wood and will promote adhesion of the finish paint.
- Primer will act as a rust-inhibitor. Any rusted nail heads should be hand sanded and coated with a rust-inhibiting primer.
- Staining can sometimes occur from a chemical reaction between moisture and natural extractives in red cedar and redwood, resulting in a colored surface deposit. This phenomenon most often takes place in new replacement wood within the first ten to fifteen years. The discoloration can often be cleaned with a solution of equal parts of denatured alcohol and water. Two coats of stain-blocking primer should then be applied, allowing forty-

eight hours drying between coats.
- Some colors such as red, yellow and orange do not cover well when making a color change. Using a tinted primer will help cover difficult colors.

*Repainting*
For ideal drying and curing of exterior paint, daytime and nighttime temperatures should both be above fifty degrees Fahrenheit. It is considered acceptable to paint in conditions when nighttime temperatures are expected to drop below fifty degrees if the paint is allowed to dry for eight hours before the temperature drop. Painting should not be done on damp or rainy days. The spring and autumn seasons can be somewhat challenging for painting due to wide ranges of the temperatures and the possibility of dew.

Never paint in direct hot sunlight. The paint will dry too quickly and two problems can occur. Either the paint will dry so quickly that it is not wet long enough to soak into the material being painted, or the surface of the paint will dry before the underlying paint dries. The latter condition traps moisture under the surface and can result in blistering as the hot sun turns the moisture into steam. If the paint is literally drying as it is being applied, brush or roller strokes also will not blend, and this will be visible.

Two coats of paint are generally recommended for proper coverage, and therefore the best protection from the elements. Two coats of new paint will also help ensure proper coverage when changing colors. The bottom of all boards should be painted, just as the sides and top. If left raw at the bottom, rain can run down the boards and then be absorbed into the wood.

When old paint has been built up to a thickness of approximately 1/16" (approximately sixteen to thirty layers) the addition of new paint may cause cracking or peeling due to stresses created by the shrinkage of the new paint, and the differences in thermal expansion and contraction between the old and new paint. If the old paint thickness is 1/16" or greater, it should be partially or completely removed prior to application of new paint. See "Preparation for Repainting" (above) for a discussion of paint removal methods.

When repainting previously painted cement block or cinder block, the best paint coverage will be achieved by applying the paint with a spray gun. Spray application will penetrate into the surface texture of block much better than will application by brush or roller. Care must be taken to mask all surrounding surfaces prior to applying paint with a spray gun.

**House Colors for Arapahoe Acres Homes**
***Going to Repaint?***
The most important part of any paint job is choosing paint color and deciding exactly how to apply it to the home. Allow plenty of time to make these decisions before scheduling a painter. There is nothing more frustrating than trying to choose paint color/s the day before the painter appears, or to be forced to live with hasty and ill-conceived color choices after the painter departs.

Some homeowners in the neighborhood are interested in determining the original colors of their homes. An original homeowner states, "All paint used was flat, and much of the siding on the homes in the neighborhood was originally stained." Homeowners are encouraged to maintain any stained surfaces in their original finish. All paint and stain used originally (or possibly after the first few years of the development) was custom mixed. "The owner simply sat on the curb with Charlie Buckley and Ed Hawkins while Charlie mixed the stain or paint." Sometimes this was quite a lengthy process. If the color was in doubt or did not please, "some gray was added".

Peeling or cutting into paint can provide samples to determine a home's original color. Generally the bottom layer of paint will be primer, which has the original finish paint color above it. Visual observation can also often determine the original color. In many cases original colors remain in areas that did not get repainted, such as inside a garage, behind utility connections or behind landscaping. A sample can also be submitted for a lab test analysis which can adjust for color fading, pigment shift or matrix color changes such as the darkening of linseed oil. If a homeowner finds the original color/s not to their liking, the following brief outline can help in making a new color choice.

***Selecting Paint Color/s***
First, take a trip around the neighborhood. Walk around and drive around, not just looking at individual homes, but at the overall appearance of the neighborhood. Stop at inter-

sections throughout the neighborhood and look at views that include clusters of homes and the surrounding landscape.

Though each home in Arapahoe Acres is unique, the neighborhood as a whole has a park-like quality. This was accomplished in three main ways. First is the overall horizontal orientation of the homes. All houses, even those with two story elements, are grounded on their lots, as though they grew out of the site. Second is the landscaping, where sweeping lawns unify houses, planted with specimen trees and shrubs that appear not as individual yards, but as a single landscape in which multiple houses are sited. The third factor in the visual of the neighborhood is paint colors. In brief, the colors were selected to unify homes with neighboring homes — not to make them stand out. Instead of individual houses shouting for attention, there is an impression of continuity between homes, and park-like quiet and calm.

It is informative to understand that a color consists of three key elements — "hue," "value" and "intensity." The hue of a given color corresponds to its name. Thus red, blue and green are hues. The same green hue can be a light value of green or a dark value of green. Intensity relates to strength. Intensity can be changed, or weakened, without changing value or hue by the addition of neutral gray of equal value.

Next, stand across the street and look at the house. What are the colors (hue and value) of the original brick, stone, block and mortar? Earth-tones that look pleasing with these permanent masonry features should form the basis of any new color scheme. The primary relationships to consider are:

- A monochromatic scheme, in which a single hue is used in multiple values.
- An analogous scheme in which related hues are used, such as a range of browns, greens or grays — most often with a single, dominant hue.
- The addition of a complementary accent. Historically, in Arapahoe Acres, this has taken the form of a front entry door and/or screen door painted in colors such as bright aqua, orange, mustard or coral.

If the home's concrete or cinder block was painted in the past, another consideration may come into play. Search the house to try to determine the block with original color, and think about using that color in the new color scheme.

***Planning Color Usage***

In addition to selecting color, a determination must be made regarding how many colors will be used, and where on the house the colors will be applied.

Simplicity of the color scheme was an original concept. Often, a single color was used for the walls (wood siding, board and batten, or block if it was painted), as well as the door and window trim and the detailing of the fascia. Flashing (the metal strip at the top of the fascia) was painted the same color as the fascia, to be as invisible as possible.

Secondary color was then supplied by the natural stone, block or brick features of the house. Homeowners are encouraged to not paint original masonry that was not previously painted. Unpainted masonry is carefree, subject only to occasional repairs due to, most commonly, damage from improper water drainage. Once masonry is painted, it can become a maintenance headache for the life of the house. Sandblasting exterior brick to remove paint is never recommended because it removes the hard outer surface of the brick. (For stripping brick surfaces, a product called Peel Away I exists. The product is either troweled or sprayed onto the surface being stripped and is covered with a fibrous laminated cover. When the stripping action is complete — usually an overnight dwell time — the cover is removed and the wall should be thoroughly rinsed with water.)

On other homes, historic photographs document that a base color was used for the walls, and a secondary color for door and window trim and/or fascia, the edge of the roofline. Beams that extend outside the house were originally the same color (usually stained) on the outside as on the inside of the house.

Accent colors such as aqua, orange, mustard or coral were used on entry doors and screen doors on some homes as the development progressed.

***Finalizing Color and Usage Choices***

After making some preliminary color choices for the house (also considering flat finish), bring home paint color chips from a good

quality line of outdoor paints. Plan to buy the most durable paint that can be afforded. The most costly part of painting a home is the labor. Buying cheaper paint doesn't save money if a painter must be paid to paint the house twice as often.

After narrowing down the color choices based on smaller paint samples, buy a small container of paint and paint small sample sections of the house. If using a combination of colors, test them adjacent to each other. Sometimes a combination of individual colors can make them seem more intense. Don't skimp on size — sample sections should be large enough to see from a distance — at least three by three feet. When painted on a house, any given color will almost always appear significantly lighter than the corresponding small color chip that is available from the paint stores. Often it is necessary to purchase a quart of paint in order to test a color on the house. The cost of several quarts of test paint colors however, is relatively minor in comparison to the cost of re-painting a house after dissatisfaction with a color choice.

Having a small section of the house painted with a sample color will also reveal how the color changes as the natural lighting changes during the day. Consider painting sample sections on two or more sides of the house. Leave sufficient time to view the samples and decide — perhaps weeks. Don't rush into making a quick decision an hour before the painter arrives.

**Selecting and Working with Paint Vendors/Contractors**

Arrange for several paint contractors to individually visit the house to discuss the general plan. Have the contractors describe exactly what they propose to do, including specifics about the preparation work. Ask each contractor for a written bid. The bid should include the brand of paint, the color/s and the sheen level. If the contractor is to do a color match, the homeowner should approve the match before any work proceeds. Two coats of finish paint should be specified in the bid to ensure proper coverage and protection. The bid should include installation of new glazing compound for windows if needed, and repair or replacement of wood if needed. Often, additional items such as these are done on a "time-and-materials" basis. Homeowners should also verify that the painting contractor has liability insurance, and worker's compensation insurance if the company has two employees or more.

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**ARAPAHO HILLS SUBDIVISION PLAT**

The original Arapaho Hills Subdivision Plat was filed with Arapahoe County in May, 1955. It included eighty-three planned homes on thirty-seven acres of land.

The Plat shows the Block and Lot number of each lot, along with their dimensions. The utility easement at the rear fence line of each lot is referenced in the Arapaho Hills Covenants.