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HORSESHOE CANYON

Landscape and Lighting Design Guidelines

Section Twelve:

Planting and Garden Design

Horseshoe Canyon Planting Design Philosophy

Located in the foothills of the McDowell Mountains, Horseshoe Canyon is nestled in a natural canyon formed by mountain hillsides rich with diverse plant and animal communities. Within the natural setting of the Sonoran Desert, planting design for Homes in Horseshoe Canyon neighborhoods will create enclaves of livable outdoor environments protected by dense stands of native vegetation.

The desert floor and hillside are the unifying elements that tie Horseshoe Canyon together. To preserve this continuous flow of natural desert, Garden designs must be well-integrated into the Estate Grounds. Lush Gardens can be planted in protected spaces on the Estate Grounds to achieve a sense of respite. Areas more Visible to the surrounding Community must be more sensitively massed and planted so as not to overwhelm the architecture or the natural desert setting. When viewed from afar, the Estate Grounds should blend into the colors and textures of the hillside landform.

These guidelines for Garden design were created to allow for diversity in both plant material and arrangement. The Estate Home and its associated Gardens should sensitively fit into their desert surrounding in a bold yet elegant manner and should never overwhelm what is the most valuable asset of Horseshoe Canyon—its natural beauty. This asset is of value not only to those living in Horseshoe Canyon, but also to other adjacent neighborhoods and Homes from which it is Visible.

The Estate Landscape Character

The Garden plays an important role in the creation of the Estate Home by providing functional and pleasing outdoor living spaces as well as enhancing and completing the architectural character. Gardens also increase the quality of outdoor spaces and, together with hardscape elements, create “outdoor rooms” that are extensions of interior spaces. These outdoor rooms are appealing because they blend with the floor plan of a Home.

The Estate Gardens will be an extension of individual expression, with no two looking or feeling alike. Plant selections, quantities, associations, and placement are composed to maximize the effects of form, color, and texture.

Outdoor rooms and Gardens are designed as extensions of the Home

Landscape Zones

The Grounds of an Estate Lot can be divided into landscape zones that define the type, quantity, and manner of plantings that may occur. Zones are designated by their proposed use, level of privacy, and visibility from streets and neighboring Residences. Though each zone is guided by different but complementary design criteria, it is essential that a unified landscape character be presented on each Home Site. Successful transition areas between each zone will either blend without abrupt changes or have separations. The Owner's Landscape Architect must determine which of the zones to apply to which portions of the Lot. The Horseshoe Canyon Approved Plant List contains a full listing of approved plants allowed in each zone. The following is a list of the five (5) to six (6) zones that may apply to each Estate Lot.

Natural Open Space (NOS) Zone

The Natural Open Space Zone is the area of undisturbed land outside of the Building Envelope, in which construction disturbances are not permitted. The following are guidelines for the Natural Open Space Zone:

Within the Canyon Lots Only

- No construction disturbance, including revegetation and supplemental irrigation, is allowed.

Within the Foothill Lots Only (Applies to All Lots Except Lots 2909 to 2917 in Parcel 5.12 Only)

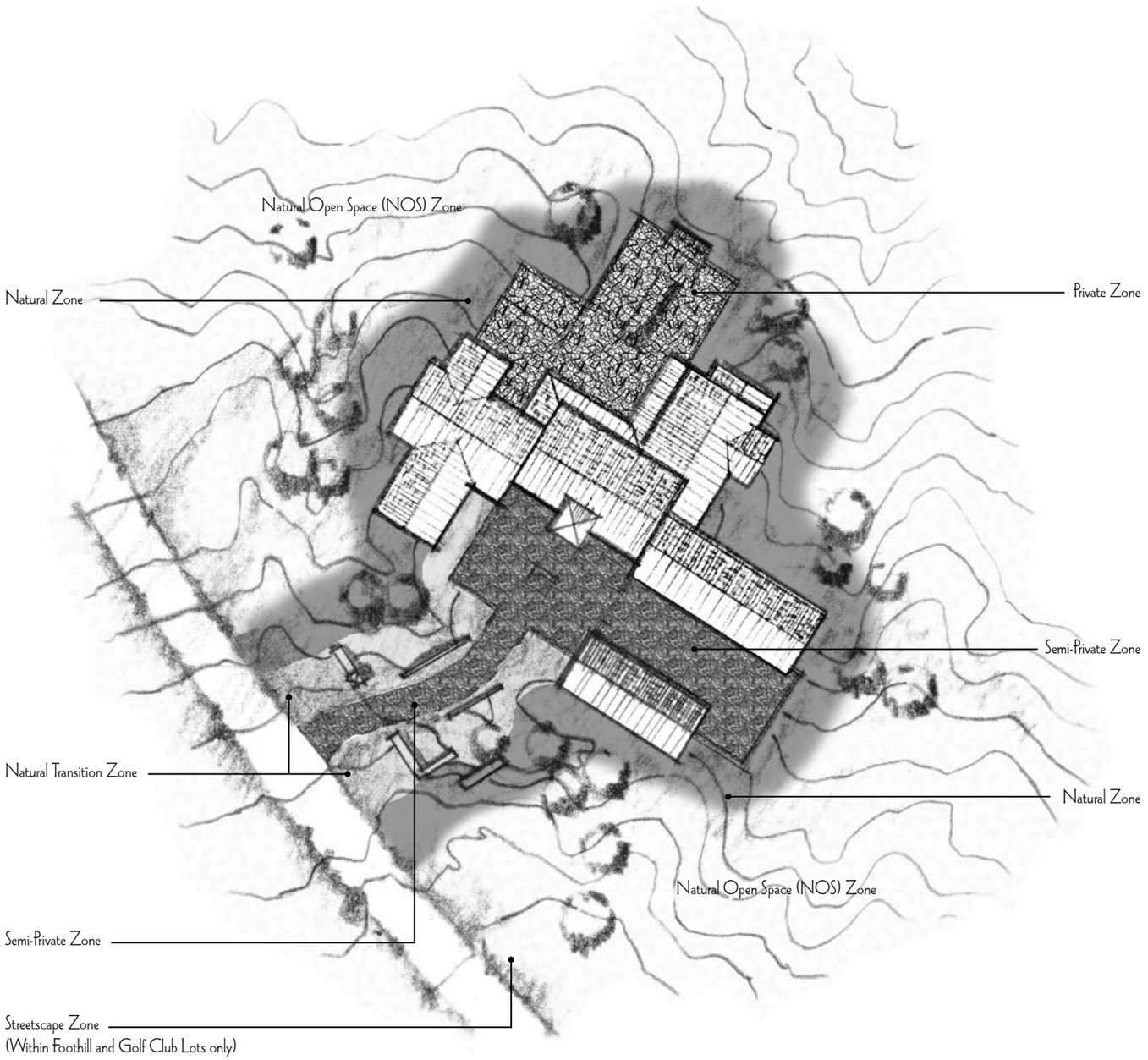
- This zone will apply in areas where existing native landscape remains on a Lot.
- For the purpose of increasing privacy and screening, supplemental plantings and irrigation may be required in these areas.
- Supplemental plantings may be required to enhance the desert character and must include native trees at thirty-six (36) box or larger, seventy-five (75) percent bursage, and accents of cholla and/or saguaro.

Within the Foothill Lots Only (Applies to Lots 2909 to 2917 in Parcel 5.12 Only)

- This zone does not apply.

Within the Golf Club Lots Only

- This zone does not apply.



Horseshoe Canyon Estate Lot landscape zones

Natural Zone

The Natural Zone is intended to mimic the native desert in its plant variety, pattern, composition, and density. For this reason, the Natural Zone will differ from area to area in Horseshoe Canyon to account for local differences in the desert landscape. The Landscape Architect must study and determine the conditions on each site to calculate the requirements for this zone. The Natural Zone can be thought of as a revegetation zone or the area between the desert that is untouched by construction and the outside wall of the Home or Garden. The following are some guidelines for the Natural Zone:

- Plant density is based on site-survey field analysis.
- Refer to the Approved Plant List for plants that are allowed in this zone.
- Increasing the density of native plants against the house or tall walls to add color and texture is allowed.
- A natural minimum fifteen (15) foot wide minimum buffer of undisturbed native landscape along the street and a minimum eighty (80) foot separation between Lots must be maintained.

Natural Transition Zone

The Natural Transition Zone is intended to blend the edge of Semi-Private Zones with Natural Zones where a wall or architectural edge does not exist. The plants in this zone are native to the Sonoran Desert and include more diversity of species than the Natural Zone for enhanced color and texture. This zone will be used primarily around the Semi-Private Zones adjacent to driveways and walkways that extend from the home. In general, this zone will be minimally used on an Estate Lot. The following are some guidelines for the Natural Transition Zone:

- Refer to the Approved Plant List for plants that are allowed in this zone.
- The width of this zone will vary, but generally should not exceed twenty (20) feet.
- Turf is not allowed in this zone, except for Foothill and Golf Club Lots.

Semi-Private Zone

The Semi-Private Zone is intended to have significantly more diverse species of plants, to include plants not native to the southwest desert. Plant massing in this zone can be more formal and layered than that found in the Natural Zone, and relates closely to the site architecture. This zone will be used in areas that are contained behind walls or architectural edges. The following are some guidelines for the Semi-Private Zone:

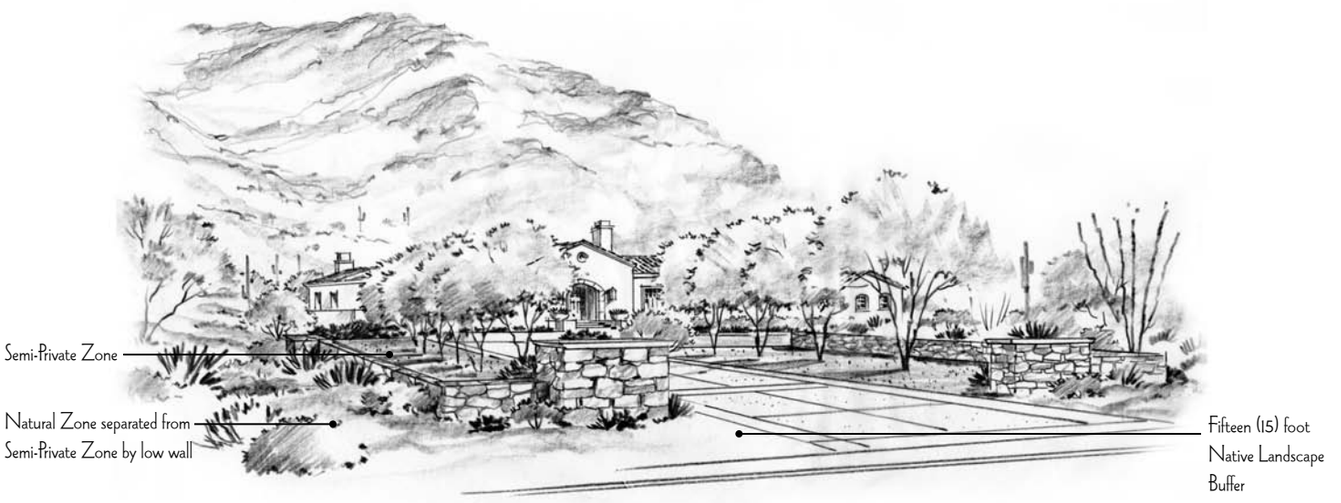
- Refer to the Approved Plant List for plants that are allowed in this zone.
- This zone may be Visible from the street, from neighboring Lots, and from afar.
- This zone can be used around driveways or walkways adjacent to the street and should generally be fifteen (15) feet wide on either side. Planting of formal rows of trees, shrubs, and accent plants is allowed.
- Turf is allowed in the Semi-Private Zone, except for the area within the Native Landscape Buffer on Canyon Lots. On Canyon Lots, no turf is allowed between the curb and the fifteen (15) foot Native Landscape Buffer. Refer to Section Two: Site Design for setback information.

Private Zone

The Private Zone contains the most diverse and exotic plant species, and may include plants from arid regions and non-native plants. Plant massing in this zone can be formal and layered as in the Semi-Private Zone, and relates closely to the architecture. This zone will be applied in areas that are contained behind walls or architectural edges of significant height to conceal the view of exotic plants from a distance. The following are some guidelines for the Private Zone:

- Refer to the Approved Plant List for plants that are allowed in this zone.
- This zone may not be Visible from the street or from afar and may be only minimally visible from neighboring Lots.
- Exotic and lush plantings within this zone must generally be contained within building walls or freestanding walls with a minimum height of five (5) feet, as measured from the inside.
- Turf is permitted in this zone.

Horseshoe Canyon street scene framed by undisturbed native landscape



Formal driveway character on Upper Desert Lot

Streetscape Zone (Within Foothill and Golf Club Lots Only)

The Streetscape Zone is the area adjacent to the street edge. Prior to design, all utility and neighborhood service locations must be verified. The following guidelines apply to the Streetscape Zone:

Within the Canyon Lots Only

- This zone does not apply.

Within the Foothill and Golf Club Lots Only

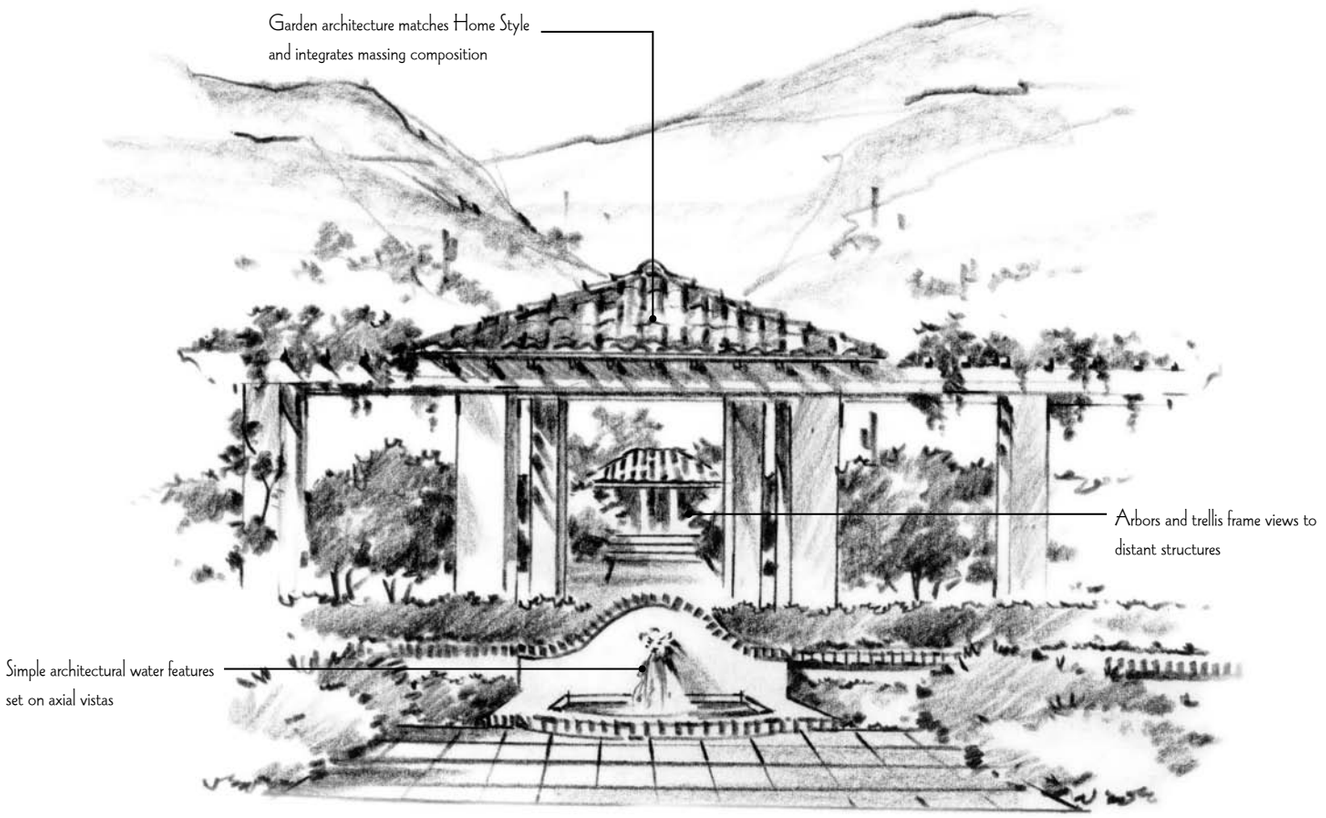
- This zone is located along the street edge for the entire length of the Lot.
- Trees are preprogrammed and installed by the Developer. Understory planting of this zone using plants from the Natural Zone and Natural Transition Zone palettes is the responsibility of the Owner.
- A minimum of one (1) shrub per sixteen (16) feet of area within the Streetscape Zone is required.
- Turf may be allowed within the Streetscape Zone, but must be located outside of the right-of-way.

Planting and Garden Design Principles

Landscape design of Horseshoe Canyon Estate Grounds and Gardens are guided by principles of composition that establish a framework for creating elegant outdoor living spaces. The Estate landscape is an extension of the Estate Character set within the surrounding native desert environment. Planting layouts, organized to transition from natural densities and patterns at the edges of the Building Envelope to more formal compositions closer to the Home, are encouraged.

Complementing Architectural Styles

The landscape and hardscape within the Private and Semi-Private Zones on the Estate Grounds should more closely match the Home, and less the organic forms and massing of the natural desert. The edge between natural desert and the Estate Grounds is intentionally distinct. The Estate is an enclave that nestles into the natural desert landform surrounding it.



Lush, formal plantings and integrated Garden architecture in the Private Zone

The Estate Garden design must complement and reinforce the qualities of the architecture. Use of appropriate materials and finishes that complement the architectural Style of the home are essential. Gardens can also follow the same discipline of proportion, scale, textures, patterns, colors, and rhythm that are used to create the architectural Style of the Estate Home. Accentuation of areas of importance such as entry areas and portals on axis with major rooms in the house further exploits the ability of plants to enhance areas of the Estate; therefore, the Garden shall be treated during design as an integral component of the Estate.

Formality in the Garden Design

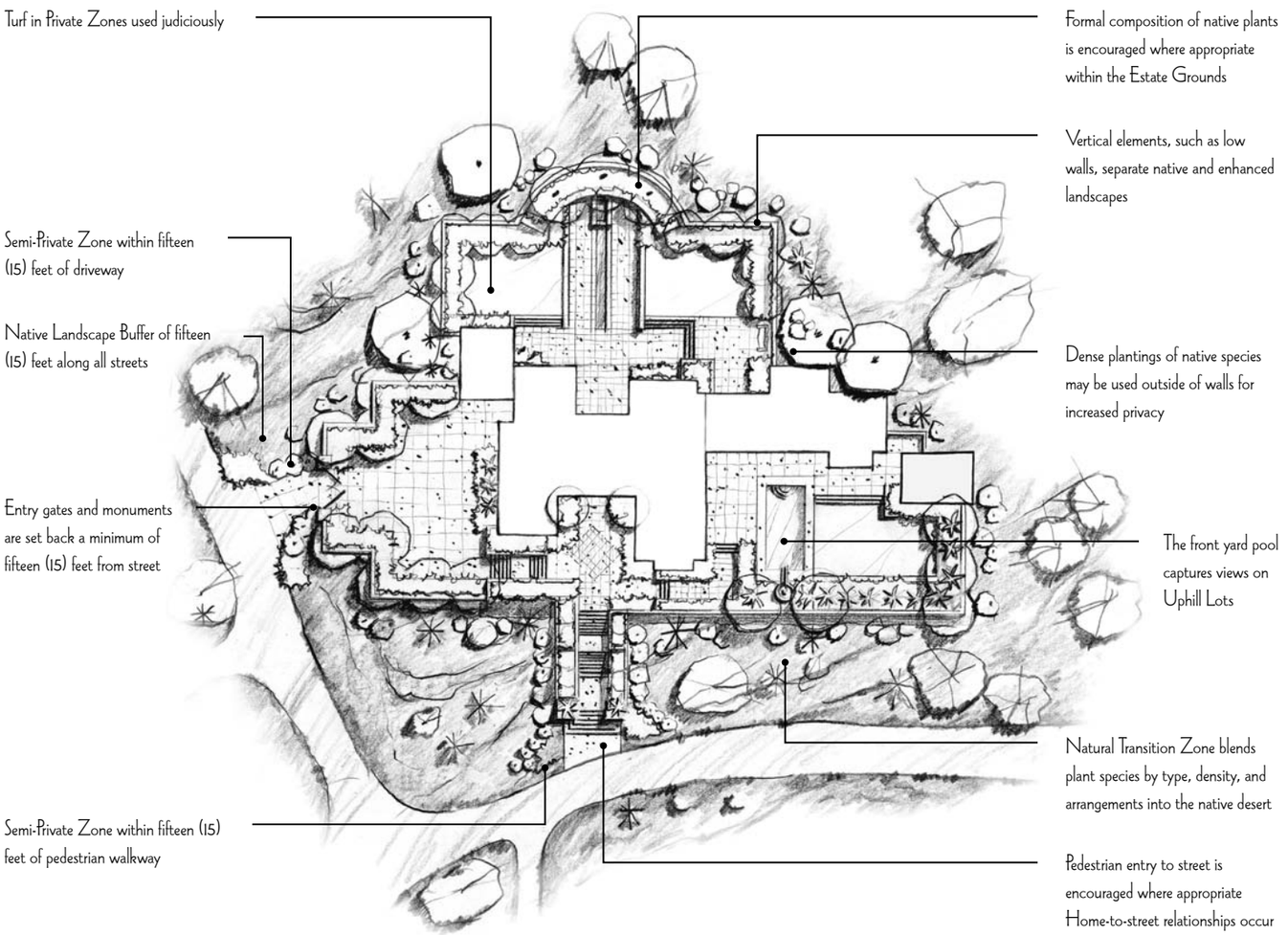
Most of the Horseshoe Canyon architecture Styles are based on formal design principles where regular patterns of elements and symmetry are paramount. The size and configuration of most Gardens in the Estates require formal planting arrangements that complement and match the architecture. Rows of trees or accent plants, in addition to formal hedges, can help define edges that reinforce the organization and geometry of the Estate and its Grounds. Formal arrangements of plants along the driveway or entry walks enhance the arrival experience.

Massing

On Estate Lots, massing of plants is encouraged to achieve more substantial forms within the Garden. Shrubs can be massed into formal hedges or more free-form groupings. In either case, individual plants are indistinguishable from within the grouping. This type of massing is in contrast to the dispersed plant arrangements found in the natural desert.

Layering

Layering is encouraged on Estate Lots to provide spatial depth and variety in the massing forms. With layering, masses of plants are arranged behind one another in combinations of height, texture, and color, to form a hierarchy.



A conceptual landscape design for a corner Lot Home in a hillside setting

Accenting

The density and color intensity of planting arrangements should vary on the Estate Grounds. Focal areas should be identified and can be given more prominence by using accent plants by increasing the density of shrubs or color, or by increasing the variety of plants used. Emphasis can be placed on pedestrian and vehicular entry locations, walkways, gate areas, portals, or doors.

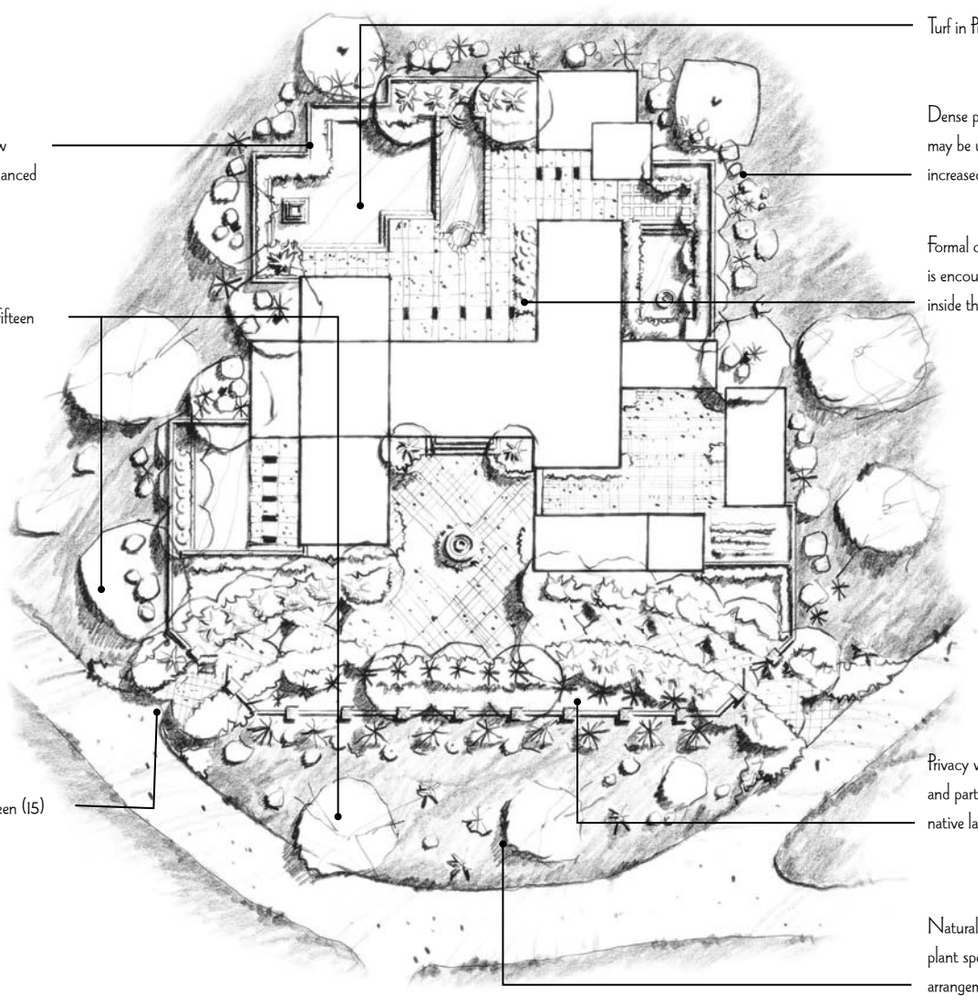
The Design of Estate Grounds

Landscape Architect/Designer Selection

The Landscape Architect plays an important role in the design team, and often is the coordinator of the entire exterior design of hardscape and softscape. Careful evaluation and selection of this member of the design team must be made to ensure the highest quality of design and construction. Landscape designs of Horseshoe Canyon Homes must be completed by a registered Landscape Architect (or a custom residential landscape designer prequalified or specifically approved by the Covenant Commission). Homeowners may obtain a list from the Covenant Commission of Landscape Architects who have consistently performed at the top of their industry; however, the provision of such a list does not guarantee quality of workmanship.

Creating Outdoor Living Environments

Plant materials and Garden structures are suitable form-giving devices in the creation of outdoor rooms. Spatial definition can be created with tree overstories and hedge walls. In addition, undisturbed dense native vegetation can provide a layer of privacy, reducing the need for perimeter walls.



A conceptual landscape design for a wide Lot in an Upper Desert setting

Turf

The decision to use turf as a ground cover is appropriate for the character of outdoor rooms being created, but should be tempered to avoid excessive turf coverage. Turf should generally be used as an extension of outdoor spaces such as porches and patios. In most cases, the shape of turf areas should be more formal, be geometric rather than curvilinear in design, and complement the Style of the Estate Home. Yards, courtyards, and Garden areas are considered extensions of interior spaces and enhance the quality of the living environment when designed for comfort, visual appeal, and functional uses. On a case-by-case basis, as part of the landscape design review, the Covenant Commission will review and approve turf area by coverage amount, minimum dimensions, and location on each Lot.

Turf is allowed and must meet the following criteria:

- The appropriate amount of allowable turf will be in a range of five (5) percent to ten (10) percent of the total gross Lot area. Turf area coverage less than five (5) percent of the total gross Lot area is allowed.
- Turf is not allowed to extend into the banks or bottom of drainage washes.
- No single, contiguous area can be less than twelve-hundred (1,200) s.f. of any nonenclosed area.
- Minimum dimension of turf in any direction is twelve (12) feet wide.
- All turf must be a hybrid Bermuda grass species, in sod form, and overseeded with perennial Ryegrass.
- Turf must be irrigated by a permanent, automatic system.
- To avoid staining from irrigation overspray, turf areas shall not terminate on the low side of any vertical hardscape element. At-grade planters separating turf from walls are required.
- All site retaining walls must be properly waterproofed where turf irrigation occurs on the high side.

Within Canyon Lots Only

- In Semi-Private Zones, turf is not permitted within the limits of the Native Landscape Buffer.
- Turf cannot be prominently Visible from afar, but can be Visible from the street or neighboring Lots. Tree massings and courtyard walls can be effectively used to limit the visibility of large turf areas.
- Planting turf on sloped terrain should be avoided where possible. Turf on level to slightly sloped grades is encouraged. Turf on slopes steeper than 8:1 is not acceptable unless confined to small areas or screened from view by adjacent Lots.

An outdoor terrace as an extension of the interior living environment

Within Foothill and Golf Club Lots Only

- Turf will be permitted in front and rear yards, and may be Visible from neighboring Lots, streets, and/or the Golf Course. Along 102nd Street, the use of turf is encouraged for the front yard, and will provide areas of high contrast against the backdrop of the native landscape.
- No turf will be allowed in the right-of-way. Along the east side of 102nd Street, turf may extend to the sidewalk.
- The allowable amount of turf will remain as a maximum of ten (10) percent of the total gross Lot area, with placement allowed in front and rear yards.
- Planting turf on sloped terrain is allowable. Turf on slopes steeper than 8:1 is not acceptable unless confined to small areas or screened from view by adjacent Lots.

Boulder Placement

The use of boulders is allowed in the Natural Zone and Natural Transition Zone only when boulders of similar type, character, and color are found on-site. Boulders used in the landscape should be set two-thirds (2/3) of their height in the ground to appear as an outcropping. If scarred or discolored, they must be treated with Eonite, Permeon, or an equivalent desert varnish treatment to match the color of the existing terrain. The use of manufactured, or faux, boulders is not acceptable.

Top-Dressing and Inert Materials

The use of Desert Pavement as a top-dress is required in the Natural and Natural Transition Zones. In the Private and Semi-Private Zones, mulch must be a light tan or brown, three-quarters (3/4) or one-half (1/2) inch minus size, and nonscreened, and is subject to approval. A standard approved granite mulch specification may be available from the Ranch Offices.

- Granite mulch is not acceptable in areas Visible from the street or adjacent properties.
- Use Desert Pavement from driveways without walls to natural areas.
- Top-dressing, such as granite mulch, is not an acceptable substitute for Desert Pavement in Natural or Natural Transition Zones.

Desert Pavement

Installation of Desert Pavement material is to be completed in conformance with the standards and specifications outlined below. Owners are responsible for salvaging, hauling, chipping, storing, and returning the salvaged granite and organic materials to the finished landscape.

Collection and Storage of Desert Pavement

Upon completion of native plant salvage operations, and prior to any other excavations or surface disturbances, the Owner shall salvage and stockpile all items left on the surface plus the top half (1/2) inch of the existing surface soil, cobble, sticks, and so on, from all project areas designated to be disturbed by construction activity.

The bursage and small shrubs shall be collected by pulling the plant materials from the ground using a skid loader fitted with a grapple bucket. Scarifying and collecting the top half (1/2) inch of the surface shall be accomplished using the same equipment, and the shrub material shall be stockpiled separately from the topsoil layer. The stockpiles must be consolidated in an approved storage location, taking care to prevent contamination of the salvaged materials. The bursage and stockpiled shrub material must be chipped at the storage location site. The site chosen for storage must be preserved and protected for the duration of construction and not be in conflict with other construction or landscape activity.

Installation of Desert Pavement

Installation of Desert Pavement shall occur as the final step in the landscape process and shall be implemented in a manner that will blend with the undisturbed native areas. The methods and sequencing proposed in this specification may require adjustment to match existing conditions in each specific area. All work shall be performed with hand tools rather than powered equipment.

- Upon completion of landscaping, ensure that final grade has been established, including removal of irrigation wells and blending and rounding of slopes.
- Create troughs of varying shapes no less than two (2) feet by eight (8) feet and approximately two (2) inches deep, and rake in any cobble-sized rock exposed during the landscape process. Cover the trough with soil to expose only the top half of the cobbles. The cobble should appear as an outcropping and should be placed in locations and at a frequency that match the existing native areas. The quantity of cobble used will vary depending on the quantity of cobble exposed during the landscape operation.

- Randomly shovel or scatter the soil/aggregate mixture over the disturbed areas in varying depths no greater than one-half (1/2) inch. Cover approximately eighty (80) percent of the disturbed areas with the landscape aggregate.
- Cobbles four (4) inches and greater collected with the soil/aggregate mixture should be half buried. Cobbles less than four (4) inches in size can be left on the surface. No special placement of these cobbles is intended; they should appear strewn in a random, irregular fashion that visually matches the adjacent undisturbed desert floor.
- Distribute the chipped shrub materials by hand throwing at the uphill side of the newly incorporated shrubs, cacti, and trees. The placement of the chipped material should simulate the windblown natural debris that collects at the base of native plant materials. Return all chipped material to the landscape.
- Do not remove any chains or cacti segments that inadvertently fall off during the installation process. These should remain on the soil surface.
- Pass over all landscape aggregate and cobble outcrop areas with a straw broom to blend.
- Dampen entire area by simulating rainfall, to encourage the larger granite materials to surface and the finer materials to compact.

Landscape Drainage

Proper landscape drainage ensures that water can easily flow from the Estate Grounds, but without compromising the aesthetic quality of the Garden or native desert. For this reason, riprap, river rock, or rock-lined channels or swales are not allowed. Alternate stabilization methods may be considered but are subject to approval. Drainage solutions should utilize one or a combination of the following systems:

- Direct and retain water into planters utilizing depressions and mounds to contain the water.
- Drainage flows interrupted by development must be redirected to original wash flows, along historical flow patterns, within the Building Envelopes.

Pots and Plant Containers

All pots and plant containers shall be selected in colors, materials, and forms that complement the Estate architectural Style. Placement can occur in focal locations to enhance terrace areas and shall be in scale with the location relative to the architecture. Irrigation lines must be provided to the pots to sustain the plants, and container drainage should also be provided.

Upper Desert Estate adjacent to desert open space

Native Plant Inventory and Relocation

Native plant inventories will be required for each Home development site. All protected plant species, as identified in City of Scottsdale code, will be mapped as part of the plant salvage and relocation process. The Landscape Architect is required to submit written salvage, plant storage, maintenance, and replanting methodologies to the City of Scottsdale and the Covenant Commission during the construction permitting process.

Approved Plant List

Each Estate Home landscape design must adhere to the practice of utilizing native, arid, and low water use plant materials, as identified in the list of acceptable plants provided in this section. The plant list is organized by species type: trees, cacti/accents, large shrubs, medium/small shrubs, groundcovers/grasses/herbaceous, and vines, and by which landscape zone each plant may be placed in. The use of non-native species is restricted to areas enclosed by the Home and courtyard walls.

Plant species listed in this Horseshoe Canyon plant list are subject to change. The current list of approved plants is available from the Ranch Offices.

HORSESHOE CANYON APPROVED PLANT LIST

Zone Legend
N = Native
Nt = Native Transition
S = Semi-Private
P = Private

TREES

Botanical Name	Common Name	Zones
Acacia abyssinica	Abyssinian Acacia	S,P
Acacia aneura	Mulga	S,P
Acacia berlandieri	Berlandier Acacia	S,P
Acacia constricta	Whitethorn Acacia	S,P
Acacia greggii	Catclaw Acacia	N,Nt,S,P
Acacia pendula	Pendulous Acacia	S,P
Acacia roemeriana	Roemer Acacia	S,P
Acacia saligna	Blue-Leaf Wattle	S,P
Acacia schaffneri	Twisted Acacia	S,P
Acacia smallii (farnesiana)	Sweet Acacia	Nt,S,P
Acacia willardiana	Palo Blanco	Nt,S,P
Bauhinia congesta	Anacacho Orchid Tree	S,P
Caesalpinia cacalaco	Cascalote	S,P
Caesalpinia mexicana	Mexican Bird of Paradise	Nt,S,P
Canotia holacantha	Crucifixion Thorn	N,Nt,S,P
Cercidium 'Desert Museum'	Hybrid Palo Verde	S,P
Cercidium floridum	Blue Palo Verde	N,Nt,S,P
Cercidium microphyllum	Foothills Palo Verde	N,Nt,S,P
Cercis canadensis v. mexicana	Mexican Redbud	S,P
Chilopsis linearis	Desert Willow	Nt,S,P
Cordia boissieri	Anacahuita	S,P
Forestiera neomexicana	Desert Olive	S,P
Fraxinus greggii	Littleleaf Ash	P
Leucaena retusa	Golden Ball Lead Tree	S,P
Lysiloma microphylla v. thornberi	Desert Fern	Nt,S,P
Olneya tesota	Ironwood	N,Nt,S,P
Pithecellobium flexicaule	Texas Ebony	S,P
Pithecellobium mexicanum	Mexican Ebony	Nt,S,P
Prosopis alba	Argentine Mesquite	S,P
Prosopis chilensis	Chilean Mesquite	S,P
Prosopis glandulosa v. glandulosa	Texas Honey Mesquite	Nt,S,P
Prosopis pubescens	Screwbean Mesquite	Nt,S,P
Prosopis velutina	Velvet Mesquite	N,Nt,S,P
Quercus gambelii	Gambel Oak	P
Robinia neomexicana	New Mexico Locust	S,P
Sophora secundiflora	Texas Mountain Laurel	S,P
Ungnadia speciosa	Mexican Buckeye	S,P
Vitex angus-castus	Chaste Tree	S,P

The Horseshoe Canyon Approved Plant List is subject to change without notification. The Homeowner should contact the Ranch Offices to obtain a copy of the most current list.

CACTI AND ACCENTS		
Botanical Name	**Common Name**	**Zones**
Agave americana	Century Plant	S,P
Agave bovicornuta	Cowshorn Agave	S,P
Agave deserti	Desert Agave	N,Nt,S,P
Agave desmettiana	Agave	S,P
Agave macroacantha	NCN	S,P
Agave murpheyi	Hohokam Agave	N,Nt,S,P
Agave ocahui	Agave	Nt,S,P
Agave parryi v. huachuensis	Parry's Agave	S,P
Agave parryi v. truncata	Parry's Agave	S,P
Agave potatorum	NCN	S,P
Agave scabra	NCN	S,P
Agave toumeyana	Toumey's Agave	N,Nt,S,P
Agave vilmoriana	Octopus Agave	S,P
Agave weberi	Smooth-Leaf Agave	S,P
Aloe barbadensis	Aloe Vera	S,P
Aloe ferox	Cape Aloe	S,P
Aloe saponaria	Tiger Aloe	S,P
Aloe species	Aloe	S,P
Aloe striata	Coral Aloe	S,P
Asclepias subulata	Desert Milkweed	Nt,S,P
Aspidistra elatior	Cast-Iron Plant	P
Carnegiea gigantea	Saguaro	N,Nt,S,P
Cereus hildmannianus	Hildmann's Cereus	S,P
Cereus hildmannianus v. monstrose	Curiosity Plant	S,P
Cereus peruvianus	Night Blooming Cereus	S,P
Cycas revoluta	Sago Palm	P
Cyperus alternifolius	Umbrella Plant	P
Dasylirion acrotriche	Green Desert Spoon	S,P
Dasylirion longissimum	NCN	S,P
Dasylirion wheeleri	Desert Spoon	N,Nt,S,P
Dietes bicolor	Fortnight Lily	P
Dietes vegeta	Evergreen Iris	P
Dioon edule	Mexican Sago	P
Echinocactus grusonii	Golden Barrel Cactus	S,P
Echinocactus horizonthalonius	Turk's Head	Nt,S,P
Echinocereus engelmannii	Engelmann's Hedgehog	N,Nt,S,P
Echinocereus pectinatus v. rigidissimus	Rainbow Cactus	S,P
Euphorbia antisyphilitica	Candelilla	S,P
Euphorbia myrsinites	Euphorbia	S,P
Euphorbia rigida	Gopher Plant	S,P
Euphorbia tirucalli	Pencil Bush	S,P
Ferocactus acanthodes	Fire Barrel	N,Nt,S,P
Ferocactus wislizenii	Fishhook Barrel	N,Nt,S,P
Fouquieria splendens	Ocotillo	N,Nt,S,P
Hesperaloe funifera	Coahuilan Hesperaloe	S,P
Hesperaloe parviflora	Red Hesperaloe	S,P

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CACTI AND ACCENTS (CONTINUED)		
Botanical Name	**Common Name**	**Zones**
Hesperaloe parviflora (yellow)	Yellow Hesperaloe	S,P
Lophocereus schottii	Senita Cactus	Nt,S,P
Lophocereus schottii v. monstrosus	Totem Pole Cactus	Nt,S,P
Mammillaria microcarpa	Pincushion Cactus	N,Nt,S,P
Nolina bigelovii	Bigelow Nolina	Nt,S,P
Nolina microcarpa	Beargrass	Nt,S,P
Opuntia acanthocarpa	Buckhorn Cholla	N,Nt,S,P
Opuntia basilaris	Beavertail Prickly Pear	Nt,S,P
Opuntia bigelovii	Teddybear Cholla	N,Nt,S,P
Opuntia chlorotica	Pancake Prickly Pear	Nt,S,P
Opuntia engelmannii	Engelmann's Prickly Pear	N,Nt,S,P
Opuntia ficus-indica	Indian Fig Prickly Pear	S,P
Opuntia fulgida	Chainfruit Cholla	N,Nt,S,P
Opuntia imbricata	Tree Cholla	S,P
Opuntia leptocaulis	Christmas Cactus	N,Nt,S,P
Opuntia microdasys	Bunny Ears	S,P
Opuntia robusta	Prickly Pear	S,P
Opuntia santa-rita	Santa Rita Prickly Pear	Nt,S,P
Opuntia spinosior	Cane Cholla	S,P
Opuntia violacea v. 'Santa Rita'	Purple Prickly Pear	Nt,S,P
Philodendron selloum	Selloum Philodendron	P
Sansevieria species	Mother-in-Law's Tongue	P
Stenocereus marginatus	Mexican Fence Post	S,P
Stenocereus thurberi	Organ Pipe Cactus	Nt,S,P
Trichocereus species	Trichocereus	S,P
Yucca aloifolia	Spanish Bayonet	P
Yucca angustifolia	Narrow-Leaf Yucca	S,P
Yucca baccata	Banana Yucca	N,Nt,S,P
Yucca brevifolia	Joshua Tree	S,P
Yucca carnerosana	Spanish Bayonet	S,P
Yucca elata	Soaptree Yucca	Nt,S,P
Yucca gloriosa	Spanish Dagger	P
Yucca pallida	NCN	S,P
Yucca recurvifolia	Curveleaf Yucca	P
Yucca rigida	Blue Yucca	S,P
Yucca rostrata	Beaked Yucca	S,P
Yucca rupicola	Twisted-Leaf Yucca	S,P
Yucca whipplei	Our Lord's Candle	S,P

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LARGE SHRUBS		
Botanical Name	**Common Name**	**Zones**
Abutilon incanum	Indian Mallow	N,Nt,S,P
Abutilon palmeri	Indian Mallow	N,Nt,S,P
Abutilon pringlei	Indian Mallow	Nt,S,P
Acacia constricta	Whitethorn Acacia	S,P
Acacia craspedocarpa	Leatherleaf Acacia	S,P
Aloysia wrightii	Wright Lippia	S,P
Alyogyne huegelii	Blue Hibiscus	S,P
Anisacanthus quadrifidus v. brevilobus	Mountain Flame	S,P
Anisacanthus quadrifidus v. wrightii 'Mexican Flame' TM	Flame Honeysuckle	S,P
Atriplex canescens	Fourwing Saltbush	N,Nt,S,P
Atriplex lentiformis	Quail Brush	Nt,S,P
Bougainvillea species*	Bush Bougainvillea	S,P
Buddleia marrubifolia	Wooly Butterfly Bush	S,P
Caesalpinia gilliesii	Desert Bird of Paradise	S,P
Caesalpinia mexicana	Mexican Bird of Paradise	S,P
Caesalpinia pulcherrima	Red Bird of Paradise	S,P
Calliandra californica	Baja Red Fairy Duster	S,P
Cassia artemisioides	Feathery Cassia	S,P
Cassia oligophylla	Outback Cassia	S,P
Cassia nemophilia	Desert Cassia	S,P
Cassia phyllodenia	Silver-Leaf Cassia	S,P
Celtis pallida	Desert Hackberry	N,Nt,S,P
Cordia boissieri	Anacahuite	S,P
Cordia parvifolia	Small Leaf Cordia	Nt,S,P
Coursetia glandulosa	Coursetia	Nt,S,P
Dalea versicolor var. sessilis	Wislizenus Dalea	Nt,S,P
Dodonaea viscosa	Hopseed Bush	N,Nt,S,P
Dodonaea viscosa 'Purpurea'	Purple Hopseed Bush	S,P
Ephedra trifurca	Mormon Tea	N,Nt,S,P
Fatsia japonica	Japanese Aralia	P
Feijoa sellowiana	Pineapple Guava	P
Hamelia patens	Firebush	S,P
Hyptis emoryi	Desert Lavender	Nt,S,P
Justicia californica	Chuparosa	N,Nt,S,P
Lantana camara	Bush Lantana	S,P
Larrea tridentata	Creosote Bush	N,Nt,S,P
Leucophyllum frutescens	Texas Sage	S,P
Leucophyllum frutescens 'Compacta'	Compact Texas Sage	S,P
Leucophyllum frutescens 'Green Cloud'	Green Cloud Sage	S,P
Leucophyllum frutescens 'White Cloud'	White Cloud Sage	S,P
Leucophyllum hybrid 'Rain Cloud'	Rain Cloud Sage	S,P
Leucophyllum laevigatum	Chihuahuan Sage	S,P
Leucophyllum langmaniae 'Rio Bravo' TM	Rio Bravo Sage	S,P
Leucophyllum pruinosum 'Sierra Bouquet' TM	Sierra Bouquet Sage	S,P
Lycium andersonii	Wolfberry	N,Nt,S,P
Lycium exsertum	Desert-Thorn	N,Nt,S,P

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LARGE SHRUBS (CONTINUED)		
Botanical Name	**Common Name**	**Zones**
Lycium fremontii	Fremont Lycium	N,Nt,S,P
Maytenus phyllanthioides	Mangle Dulce	S,P
Mimosa dysocarpa	Mimosa	S,P
Myrtus communis 'Boetica'	Twisted Myrtle	P
Nandina domestica	Heavenly Bamboo	P
Pittosporum tobira	Japanese Mock Orange	P
Plumbago auriculata	Cape Plumbago	S,P
Quercus turbinella	Scrub Oak	S,P
Rhus microphylla	Littleleaf Sumac	Nt,S,P
Rhus ovata	Sugar Bush	Nt,S,P
Senna goldmannii	Goldmann's Senna	Nt,S,P
Senna wislizenii	Shrubby Senna	S,P
Simmondsia chinensis	Jojoba	N,Nt,S,P
Sophora secundiflora	Texas Mountain Laurel	S,P
Strelitzia reginae	Bird of Paradise	P
Tagetes lemmoni	Mt. Lemmon Marigold	S,P
Tecoma stans	Yellow Bells	S,P
Vaquelinia californica	Arizona Rosewood	Nt,S,P
Zizyphus obtusifolia	Graythorn	Nt,S,P

MEDIUM AND SMALL SHRUBS		
Botanical Name	**Common Name**	**Zones**
Acacia schottii	Schott Acacia	S,P
Acanthus mollis	Acanthus	P
Anigozanthos flavidus	Kangaroo Paw	S,P
Anisacanthus thurberi	Desert Honeysuckle	Nt,S,P
Asclepias linaria	Pineleaf Milkweed	Nt,S,P
Bebbia juncea	Chuckwalla's Delight	N,Nt,S,P
Brickellia coulteri	Brickellia	N,Nt,S,P
Bulbine frutescens	Bulbine	S,P
Calliandra eriophylla	Fairy Duster	N,Nt,S,P
Chrysactinia mexicana	Damianita	S,P
Coreopsis lanceolata	Lanceleaf Coreopsis	S,P
Dalea frutescens 'Sierra Negra' TM	Sierra Negra Dalea	S,P
Dalea pulchra	Indigo Bush	S,P
Dicliptera suberecta	Velvet Honeysuckle	S,P
Encelia farinosa	Brittlebush	N,Nt,S,P
Ephedra fasciculata	Joint Fir	N,Nt,S,P
Equisetum laevigatum	Horsetail	S,P
Eremophila glabra	Emu Bush	S,P
Ericameria laricifolia	Turpentine Bush	N,Nt,S,P
Eriogonum fasciculatum v. poliofolium	Wild Buckwheat	N,Nt,S,P
Eriogonum wrightii	Wright Buckwheat	N,Nt,S,P
Euryops pectinatus	Golden Euryops	P
Euryops pectinatus 'Viridus'	Euryops Daisy	P
Gaura lindheimeri	Gaura	S,P
Gutierrezia sarothrae	Snakeweed	N,Nt,S,P

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MEDIUM AND SMALL SHRUBS (CONTINUED)		
Botanical Name	**Common Name**	**Zones**
Haplopappus gooddingii	Goldenweed	N,Nt,S,P
Herissantia crispa	Indian Mallow	N,Nt,S,P
Hibiscus coulteri	Desert Rose-Mallow	Nt,S,P
Horsfordia newberryi	Horsfordia	N,Nt,S,P
Hymenoxis acaulis	Angelita Daisy	S,P
Janusia gracilis	Slender Janusia	N,Nt,S,P
Justicia ovata (candicans)	Red Justicia	Nt,S,P
Krameria parvifolia	Ratany	N,Nt,S,P
Leucophyllum candidum 'Thunder Cloud' TM	Thunder Cloud Sage	S,P
Leucophyllum revolutum 'Sierra Magic' TM	Sierra Magic Sage	S,P
Leucophyllum zygophyllum	Blue Ranger	S,P
Liatris spicata	Gayfeather	P
Lobelia laxiflora	Lobelia	S,P
Lotus rigidus	Deer Vetch	Nt,S,P
Maytenus phyllanthioides	Mangle Dulce	S,P
Menodora scabra	Menodora	N,Nt,S,P
Mimosa dysocarpa	Mimosa	S,P
Muhlenbergia capillaris 'Regal Mist' TM	Regal Mist Muhley	S,P
Muhlenbergia dumosa	Bamboo Muhley	Nt,S,P
Muhlenbergia emersleyi 'El Toro' TM	Bull Grass	S,P
Muhlenbergia lindheimeri 'Autumn Glow' TM	Autumn Glow Muhley	S,P
Muhlenbergia rigens	Deer Grass	N,Nt,S,P
Muhlenbergia rigida 'Nashville' TM	Nashville Grass	S,P
Parthenium incanum	Mariola	S,P
Plumbago scandens 'Summer Snow' TM	Summer Snow Plumbago	Nt,S,P
Psilostrophe cooperi	Cooper's Paperflower	Nt,S,P
Psilostrophe tagetina	Wooly Paperflower	Nt,S,P
Punica granatum 'Nana'	Dwarf Pomegranate	P
Rosmarinus officinalis	Rosemary	P
Ruellia brittoniana	Ruellia	S,P
Ruellia peninsularis	Baja Ruellia	Nt,S,P
Salazaria mexicana	Paperbag Bush	Nt,S,P
Salvia chamaedryoides	Mexican Blue Sage	S,P
Salvia clevelandii	Chaparral Sage	S,P
Salvia coccinea	Cherry Red Sage	P
Salvia farinacea	Mealy-Cup Sage	S,P
Salvia greggii	Autumn Sage	S,P
Salvia leucantha	Mexican Bush Sage	S,P
Salvia leucophylla	Purple Sage	S,P
Salvia microphylla	Salvia	S,P
Sphaeralcea ambigua	Desert Globemallow	N,Nt,S,P
Trixis californica	Trixis	N,Nt,S,P
Viguiera deltoidea	Goldeneye	N,Nt,S,P
Zauschneria californica	California Fuchsia	Nt,S,P
Zexmenia hispida "Devil's River"	Zexem	S,P

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GROUNDCOVERS/GRASSES/HERBACEOUS PLANTS		
Botanical Name	**Common Name**	**Zones**
Acacia redolens	Prostrate Acacia	S,P
Aizoaceae species	Ice Plant	S,P
Asparagus densiflorus 'Sprengeri'	Asparagus Fern	P
Aspidistra elatior	Cast-Iron Plant	P
Aster tanacetifolius	Purple Aster	Nt,S,P
Baileya multiradiata	Desert Marigold	Nt,S,P
Berlandiera lyrata	Chocolate Flower	S,P
Buchloe dactyloides	Buffalo Grass	S,P
Calylophus hartwegii 'Sierra Sundrop'	Calylophus	S,P
Convolvulus mauritanicus	Ground Morning Glory	S,P
Cooperia drummondii	Rain Lily	S,P
Coreopsis bigelovii	Desert Coreopsis	Nt,S,P
Cuphea llavea	Bat Faced Cuphea	S,P
Cynodon dactylon	Hybrid Bermuda	S, P
Dalea capitata 'Sierra Gold' TM	Sierra Gold Dalea	S,P
Dichelostemma pulchellum	Bluedicks	Nt,S,P
Ditaxis lanceolata	Common Ditaxis	N,Nt,S,P
Drosanthemum speciosum 'Rosa'	Ice Plant	S,P
Dyssodia pentachaeta	Dyssodia	Nt,S,P
Erigeron divergens	Spreading Fleabane	Nt,S,P
Erigeron 'Profusion'	Profusion Fleabane Daisy	S,P
Erogrostis intermedia	Plains Lovegrass	Nt,S,P
Eschscholtzia mexicana	Mexican Gold Poppy	Nt,S,P
Eupatorium greggii "Boothill"	Eupatoria	Nt,S,P
Fatshedera lizei	Aralia Ivy	P
Gaillardia arizonica	Arizona Blanketflower	Nt,S,P
Gaillardia pulchella	Indian Blanket	S,P
Gazania rigens 'Sun Gold'	Gazania	S,P
Gelsemium sempervirens	Yellow Flowering Jessamine	P
Ipomopsis longiflora	Pale Blue Trumpets	Nt,S,P
Kallstroemia grandiflora	Arizona Poppy	Nt,S,P
Lantana montevidensis	Trailing Purple Lantana	S,P
Liriope muscari	Lilyturf	P
Lupinus sparsiflorus	Lupine	Nt,S,P
Lupinus species	Lupine	S,P
Machaeranthera tortifolia	Mohave Aster	S,P
Martynia species	Devil's Claw	Nt,S,P
Melampodium leucanthum	Blackfoot Daisy	Nt,S,P
Mesembryanthemum species	Ice Plant	S,P
Mimulus cardinalis	Monkey Flower	Nt,S,P
Mirabilis bigelovii	Mirabilis	N,Nt,S,P
Mirabilis coccinea	Four-O'Clock	N,Nt,S,P
Oenothera berlandieri	Mexican Evening Primrose	S,P
Oenothera caespitosa	Evening Primrose	Nt,S,P
Oenothera stubbii	Saltillo Primrose	S,P
Ophiopogon japonicus	Mondo Grass	P

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GROUNDCOVERS/GRASSES/HERBACEOUS PLANTS (CONTINUED)		
Botanical Name	**Common Name**	**Zones**
Orthocarpus purpurascens	Owl-Clover	Nt,S,P
Osteospermum fruticosum	Trailing African Daisy	S,P
Pectis papposa	Chinchweed	Nt,S,P
Penstemon baccharifolius	Rock Penstemon	S,P
Penstemon eatonii	Firecracker Penstemon	Nt,S,P
Penstemon grandiflorus	Penstemon	S,P
Penstemon palmeri	Palmer's Penstemon	Nt,S,P
Penstemon parryi	Parry's Penstemon	Nt,S,P
Penstemon pseudospectabilis	Desert Penstemon	Nt,S,P
Penstemon superbus	Superb Penstemon	S,P
Penstemon wrightii	Penstemon	S,P
Phacelia campanularia	Desert Bluebell	Nt,S,P
Portulacaria afra	Elephant Food	S,P
Rafinesquia neomexicana	Desert-Chicory	Nt,S,P
Rosmarinus officinalis 'Prostratus'	Dwarf Rosemary	P
Ruellia brittoniana 'Katie'	Katie Ruellia	S,P
Salvia sp. 'Quicksilver' TM	Quicksilver Salvia	S,P
Santolina chamaecyparissus	Lavender Cotton	S,P
Santolina virens	Green Santolina	S,P
Sedum species	Stonecrop	S,P
Senecio douglasii	Threadleaf Groundsel	Nt,S,P
Senna covesii	Desert Senna	N,Nt,S,P
Senna lindheimeriana	Lindheimer Senna	S,P
Stachys byzantina	Lambs Ears	P
Stachys coccinea	Betony	Nt,S,P
Stephanomeria pauciflora	Wire Lettuce	N,Nt,S,P
Trachelospermum asiaticum	Asiatic Jasmine	P
Tridens pulchellus	Fluffgrass	Nt,S,P
Tulbaghia violacea	Society Garlic	S,P
Verbena gooddingii	Goodding's Verbena	Nt,S,P
Verbena peruviana	Peruvian Verbena	S,P
Verbena pulchella	Moss Verbena	S,P
Verbena rigida	Sandpaper Verbena	S,P
Vinca major	Vinca	P
Wedelia trilobata	Wedelia	P
Zephyranthes candida	Rain Lily	S,P
Zinnia acerosa	Desert Zinnia	Nt,S,P
Zinnia grandiflora	Little Golden Zinnia	Nt,S,P

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VINES		
Botanical Name	**Common Name**	**Zones**
Antigonon leptopus	Queen's Wreath	Nt,S,P
Bougainvillea species*	Bougainvillea	S,P
Campsis radicans	Common Trumpetcreeper	P
Cissus trifoliata	Native Grape Ivy	Nt,S,P
Ficus pumila	Creeping Fig	P
Hardenbergia comptoniana	Lilac Vine	S,P
Hedera canariensis	Algerian Ivy	P
Hedera helix	English Ivy	P
Macfadyena unguis-cati	Cat's Claw Vine	S,P
Marah gilensis	Wild-Cucumber	Nt,S,P
Mascagnia lilacina	Lilac Orchid Vine	S,P
Mascagnia macroptera	Yellow Orchid Vine	Nt,S,P
Maurandya antirrhiniflora	Snapdragon Vine	Nt,S,P
Podranea ricasoliana	Pink Trumpet Vine	S,P
Rosa banksiae 'Alba Plena'	White Lady Bank's Rose	P
Vitis arizonica	Arizona Grape	Nt,S,P

*Bougainvillea species used within the Upper Desert theme are limited to white, gold, orange, and light pink colors only—strong colors such as red, fuchsia, magenta, or purple are not acceptable for use.

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Design of the Irrigation System

General Irrigation Design Considerations

- All landscape areas (private and other) shall be maintained on a permanent, automatic drip irrigation system.
- Salvaged or nursery-grown native trees and cacti must receive supplemental water, consistent with local standards.
- Valve or other flush-mounted boxes shall match the color of the ground surface (desert tan or green when in turf).
- Locate valve boxes, flush caps, and so on in inconspicuous areas of the site, no further than three (3) feet away from the Home. Set boxes on flat ground to minimize visibility.
- Conceal boxes from view with small shrubs. Avoid setting boxes on a tilted plane; instead, always set boxes flat.
- Locate wall-mounted or above-ground equipment behind rear yard enclosure walls or within refuse enclosure walls.
- Paint free-standing or wall-mounted equipment to match the exterior color of the house or the walls on which they are mounted.

Valves

- Different plant species require varying amounts of water and frequency of application. Proper valving can significantly reduce maintenance and water costs. Separate valves are required for:
  - Trees
  - Low-water-use shrubs
  - Ornamental shrubs
  - Turf
  - Pots or Garden

- Additional valves should be considered to accommodate exposure differences. For example, most groundcovers and shrubs planted in a shady zone will require less water than the same plant placed in an exposure that receives full sun. If both plants receive the same quantity and frequency of water, the plant in the shady location will not have an opportunity to dry out and may rot while the plant in full sun will suffer from infrequent watering.

Turf Irrigation

- Spray irrigation is limited to turf areas only.
- If both rotors and low trajectory heads are needed to irrigate turf areas, provide separate valves for each to maximize control and efficiency of the system.
- Runoff into streets, onto sidewalks, onto neighboring properties, or into natural areas not previously part of the site drainage pattern is prohibited.
- Offset heads six (6) to twelve (12) inches from pavement.

Irrigation Installation in Native Areas

For Homes on Foothill Lots only, supplemental landscape improvements may be required in native areas. In the event that landscape and irrigation is required to be provided in native areas, the following shall apply:

- Locate all mainlines, and as many lateral lines as possible, within the existing disturbed areas. Minimize trenching for irrigation to new plants to just those natural areas of seams between existing plantings.

Irrigation for Performance and Reduced Consumption

Spray irrigation can create significant runoff after only a few minutes of operation. Homeowners must manage their irrigation water properly by:

- Properly grading and sloping the land to hold runoff.
- Preparing the soil prior to planting to ensure good drainage.
- Selecting heads to fit the size and configuration of the turf area.
- Managing the duration of the irrigation cycle to avoid runoff conditions. Select several short irrigation intervals during the day rather than one long setting.

Section Thirteen:

Exterior Lighting Design

Exterior Lighting Design

The lighting philosophy for Horseshoe Canyon is to achieve overall reduced light levels throughout the Community by strategically illuminating landscape and outdoor spaces. The objective is to preserve the night sky ambiance, yet permit lighting as required for safety and aesthetics. Another objective is to allow provisions for intermittent use of enhanced lighting that achieves a quality of illumination for entertaining purposes that closely reflects the Estate Character. This section will establish a concise and consistent methodology of design and construction of lighting components.

Design Philosophy and Objectives

The following guidelines serve as criteria for lighting the residential environment of Horseshoe Canyon and have been developed to direct the Homeowner, Builder, and designer in selecting appropriate lighting fixtures. These guidelines outline lighting criteria that will provide proper aesthetics and functionality for the residential exterior environment. The issues addressed identify specific needs that can be integrated into a cohesive and pleasing lighting composition for the Homeowner and Community.

These guidelines further serve to guide future development and maintenance for the lighting environment of Horseshoe Canyon. The Owner, Builder, or lighting designer needs to assess the visual importance of each element in the exterior environment, and define the nighttime use of the areas.

When identifying areas of the outdoor environment to be illuminated, the following should be considered:

- The lighting philosophy for Horseshoe Canyon is to integrate quality lighting solutions into the Community that will be minimally obtrusive yet provide functional value.
- The key to achieving this goal is to minimize overall light levels within the Community and strategically illuminate areas for nighttime functions, security, and enhancement of nighttime experience within the Community.
- Lighting should in general be used only where needed; however, the Estate architecture can be enhanced by exterior illumination when executed artfully for special entertaining purposes.

The following definitions relate to lighting design:

- **Function**: The activities and uses for the intended area.
- **Safety**: The level of comfort and security.
- **Aesthetics**: The look and feel desired for the landscaped grounds and the Estate Character.

Lighting Design Objectives and Criteria

The lighting design must meet the following objectives after identifying areas to be illuminated. The following objectives apply to either the Normal Daily Lighting Concepts or to the Enhanced Lighting Concepts, which are addressed separately.

Normal Daily Lighting Concepts

The following are objectives that apply to normal daily lighting concepts for the Horseshoe Canyon Estate Character. Individual Homes are required to utilize the following concepts as part of their lighting design.

The Landscaped Grounds

- Integrate lighting hardware with hardscape and landscape features. Lighted accentuation of formal tree layouts along guest arrival areas will be considered.
- Utilize moonlighting effects by placing fixtures in the tree canopy in addition to ground-mounted fixtures.
- Locate light fixtures only where needed for general purpose or security lighting.
- Select lighting hardware that blends with the landscape and architectural character of the Home.
- In general, minimize environmental impact and observe the "Dark Sky" Philosophy. Attain low overall light levels versus inconsistent accents.
- Conserve energy.

The Exterior Facades

- Limited use of ground-mounted uplights or downlights located in eaves to illuminate architectural facades.
- Wall-hung or ceiling-hung ornamental coach lights with translucent glass and bulbs at a maximum wattage of forty (40) are acceptable at primary and secondary entrances.
- Decorative ceiling-hung lights with opaque shades that cast light downward are acceptable in arcades.

Enhanced Lighting Concepts

The following are objectives that apply to Enhanced Lighting for the Horseshoe Canyon Estate Character. The intent is to provide an enhanced level of illumination for entertainment purposes beyond the daily condition described in the Normal Daily Lighting Concepts. Individual Homes are not required to utilize the following Enhanced Lighting Concepts, but these guidelines are offered for those interested in providing a nighttime ambiance to the landscaped Grounds or the Home that is beyond the normal daily allowable standards. A computerized control system must be used in conjunction with these concepts to control the use of the following Enhanced Lighting Criteria, thereby preventing the undesirable condition of Homes using the Enhanced Lighting Concepts for more than intermittent entertaining purposes. The selected control system needs to be clearly noted on lighting plans submitted for review. The selected settings will be subject to a nighttime inspection upon completion of the Home, and the Covenant Commission representative may request alterations to the settings. Ongoing review of the frequency of enhanced lighting conditions will occur, especially if a complaint is received by the Covenant Commission.

The Landscaped Grounds

- Integrate lighting hardware with hardscape and landscape features. Lighted accentuation of formal tree layouts along guest arrival areas will be considered.
- Utilize moonlighting effects by placing fixtures in the tree canopy in addition to ground-mounted fixtures.
- Locate light fixtures selectively for enhancement of trees and planting areas, and for limited accentuation of site wall surfaces.
- Select lighting hardware that blends with the landscape and the architectural character of the Home.
- Attain consistent, moderate overall light levels versus inconsistent bright accents.

The Exterior Facades

- The use of additional ground-mounted uplights or downlights located in eaves to illuminate architectural facades will be considered for intermittent use.
- Selective accenting of accessory structures such as garden gazebos, trellises, arbors, arched arcades, and so on, will be considered for intermittent use.

Quantity of Illumination

DC Ranch promotes a "Dark Sky" Philosophy by encouraging a minimal approach to nighttime outdoor lighting, other than that allowed in the Horseshoe Canyon Enhanced Lighting Concepts. The amount of illumination from individual light fixtures is controlled to minimize light pollution and maximize visual comfort.

Quality of Illumination

Lighting is the fourth dimension of architecture. Sensitively integrated, quality lighting conveys the spirit of a Home or exterior environments. A quality lighting design sets the mood, enhances the space, and achieves specific needs such as safety and energy conservation. A quality design requires significant time and consideration to meet all of the objectives as outlined within the lighting design guidelines. Well-crafted and durable lighting fixtures are recommended for use in Homes in the Horseshoe Canyon community.

Shielding and Diffused Light

At night the eye becomes sensitive to sources of light that are unshielded or not adequately diffused. The most effective way to control uncomfortable brightness is to shield light sources so they cannot be seen in your normal field of view. Another effective technique is to diffuse the light source with a translucent medium; however, it is essential that the translucent medium be adequately diffused so that an image or silhouette of the light source is not visible through the medium when the light source is operating.

All light fixtures should be well-shielded to conceal the light source and eliminate glare or have translucent glass shades that significantly reduce glare. This reduces light "hot spots" and greatly enhances the overall look and feel of the nighttime environment.

Light fixtures with good optical control enable light to be distributed in the most effective and efficient manner. Cut-off fixtures emit light from zero (0) (down) to ninety (90) (horizontal) degrees and have no light above the horizontal. Use of shielded outdoor light fixtures is required except for decorative wall sconces and wall-mounted or ceiling-mounted lights, for which translucent glass and maximum forty (40) watt bulbs must be used.

Safety and Security

Effective security lighting can be achieved by placing lights only where needed, instead of overlighting around the Home. The objective of security lighting is to provide visibility that enhances a sense of safety. Security lighting does not necessarily mean large amounts of illumination, but rather strategically placed fixtures. The result should be an effective yet efficient lighting scheme.

Security lighting must be completely shielded (no exposed lamps allowed). Glare should be avoided when considering security lighting; therefore, care must be taken when aiming such lighting. Placing lights at door locations, pathways, and driveways wired to a combination photocell/infrared sensor can act as a deterrent to intruders.

Combination Photocell/Infrared Sensors

The use of building-mounted security flood lighting is discouraged. Building-mounted security lights that function as floodlights must be controlled by a combination photocell/infrared sensor. These devices have two sensors, one for light sensing and one for concentrated heat detection (warm-blooded mammals). The infrared sensor can only turn on the light at night, avoiding nuisance operation during the daytime and minimizing operation of security lighting at night.

Light Trespass

Light fixtures should be selected and aimed to deliver light only for the intended location and purpose. Care must be taken to prevent unwanted light spill.

Light trespass is defined as unwanted light received in adjacent properties and excessive brightness occurring in the normal field of vision. The following recommendations will help control light trespass:

- Select luminaires that have tightly controlled intensity distributions using cut-off reflectors and refractors.

- Contain light within the design area (property) by carefully selecting, locating, mounting, and aiming the luminaires.
- Use well-shielded luminaires or select hardware that can be shielded.
- Keep aiming angles high so the light beam falls within the intended area.
- Aim lighting fixtures away from streets and neighboring properties.

Aiming Light Fixtures

Placement and aiming of light fixtures are crucial elements of a successful lighting design. Aiming should be exercised in a manner in which glare to surrounding properties is avoided. When uplighting large plants and trees, fixtures should not be aimed below an angle of sixty (60) degrees, measured from the horizontal axis. Where uplighting is proposed, the beam spread of the lamp must be selected to focus all available light on the object being illuminated. For example, do not use a wide beam lamp (flood) to uplight a tall, narrow tree; a narrow beam lamp (spot) is appropriate for this application. However, a wide beam lamp would be effective and appropriate for uplighting a large palo verde or mesquite tree.

Light Sources

Various light sources are permitted for the exterior environment at Horseshoe Canyon. Light sources should be selected for quality and quantity of light provided.

Color of Light

Slight differences in the color composition of light are measured using the color temperature scale. Warm light sources have low color temperatures (2,700°K – 3,000°K) and feature more light in the red/orange/yellow range. Cool light sources have a higher color temperature (4,000°K) and feature more light in the green/blue/purple range. A neutral or midrange color temperature (3,500°K) enhances most colors equally.

The following lists lamp types that have a range of light colors acceptable for use in Horseshoe Canyon:

- **Incandescent**: A-lamps, T-lamps, R-lamps, and candelabra-based lamps are the warmest in color and have a "soft" output, but are not as compact as some halogen sources.
- **Halogen**: These are available in both one hundred twenty (120) volt and twelve (12) volt configurations. An example of a one hundred twenty (120) volt halogen source is a PAR lamp. Some examples of a twelve (12) volt halogen source are an MR-11, an MR-16, or a bi-pin, which would typically be used for landscape lighting.
- **Compact Fluorescent**: These are available in warm (2,700°K) and cool (3,500°K) color temperatures, and typically have long life properties (10,000 hours).

High-intensity discharge sources like metal halide and high pressure sodium are not permitted and do not comply with the maximum lumen output. Because lamp technology changes rapidly, lamp resources not currently approved by the Covenant Commission may be approved; however, any additional source must first be submitted to the Covenant Commission for review.

Energy Conservation

New lighting techniques and equipment, as well as more efficient light sources, provide the tools to meet the requirements for the outdoor environment and increasing energy cost. Maintenance is essential to energy efficiency.

The three major lamp (bulb) manufacturers (General Electric, Osram Sylvania, and Philips) have improved lamp technology. Lamp sources now have high efficiencies, excellent color rendering properties, long life, and lower wattages, and some are available at low costs. Most lamp sources are available in an energy-saving configuration. Most energy-efficient sources have:

- Longer rated life
- Lower wattages
- Lower energy consumption

Typical Fixtures and Applications

Lighting hardware should be selected for its quality, ease of maintenance, and maximum useful life. The goal is to use the appropriate number and type of fixtures for a particular application. Criteria for specific applications and examples of fixtures are described in this section. Other fixtures that meet the lighting criteria described in this section may also be approved.

Approved Fixtures and Characteristics

The following section includes types of approved lighting fixtures with descriptions of each.

Quality of Lighting Fixtures

Quality lighting hardware is recommended for Horseshoe Canyon because it is durable, UL listed, tested for various environments it could be exposed to, and warranted for a minimum of one (1) year. The lighting hardware finishes recommended at Horseshoe Canyon are natural materials such as copper, solid brass, bronze, and wrought iron and must match the architectural Style of the Home. All light fixtures must comply with the shielding criteria.

To conform with the natural setting of the Horseshoe Canyon desert landscape, the lighting is to be concealed, shielded, and low-wattage, and the quantities of fixtures should be minimized. Natural hardware finishes blending with the rustic color palette of the project site, including copper, dull brass, and bronze, are preferred.

Wall Sconces and Lanterns

Wall sconces and lanterns are intended to provide low-level general illumination at doorways, gates, and patios. Providing comfortable illumination and controlling glare are the most important features of this type of luminaire.

Shielded luminaires provide the most effective glare control and minimize spill light to the night sky. Diffused luminaires allow more light to spill to the night sky; however, they provide more uniform illumination and therefore better visibility in areas such as entries, patios, and driveways. Transparent lenses (e.g., "seeded" glass lenses), lightly sandblasted clear glass, and acrylic prismatic lenses do not adequately diffuse the lamp image. The best diffusers include thick translucent colored glass where the color is integral to the glass or lenses that have a combination perforated screen and translucent diffuser.

Decorative wall-mounted light in a character matching a Spanish-influenced Home Style

Hanging lantern with translucent lens casting diffused light creates soft ambient illumination for outdoor rooms and patios

Wall-mounted hanging light fixture using a honey-swirled diffused glass lens casts a warm glow while directing light in a downward direction to accent a wall

Small decorative wall sconce with a frosted glass cover to allow a diffused glow of light

Garden Lights

Garden lights provide illumination for paths, walkways, gardens, and patio perimeters. Aesthetically, they are most effective when installed next to colorful flowers and/or plants. Luminaires mounted thirty (30) inches above grade are more effective than luminaires mounted closer to the ground. To avoid a contrived appearance, luminaires must not be installed in a row along the edge of a path or driveway, unless they support formal tree or hardscape design elements.

Adjustable uplight for low mounting in planter beds to highlight plant massings or garden features

Decorative path light with shielded light source aimed downward to create small pools of light along intimate walkways

Garden light with shielded light source spread over a wider area

Small garden path light with goose-neck pole directing light downward to pathways and patio edges

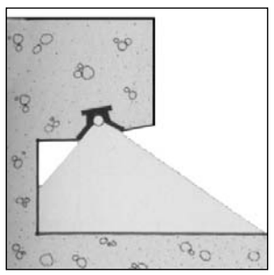
Step Lights

Step lights provide task illumination for stairways and doorways and are most effective when the light source is completely shielded. Luminaires mounted thirty (30) inches above grade are more effective than those mounted closer to the ground. Luminaires with fluorescent lamps and louvers use less energy and require less maintenance.

Step light with half shield casting light on stairways and low walls, this type shall not be Visible to public view

Compact step light with louvers direct shielded light towards surface of stair

Round step light fully shielded with louvers discretely focusing light towards surface of stair



Fully concealed step light mounted under step tread casting a soft and even light across stair risers

Trees and Specimen Plants

Ground mounted twelve (12) volt halogen accent lights are the most effective way to uplight trees and specimen plants, and simultaneously minimize light spill to the night sky. These luminaires combine efficient use of a twelve (12) volt halogen lamp in a fixture package that provides a high degree of glare control.

The largest trees allowed in Horseshoe Canyon can be effectively illuminated with a maximum of three (3) luminaires. Smaller specimens can be attractively lighted with one (1) luminaire, if viewed from a single direction. Tree-mounted twelve (12) volt halogen downlights provide a pleasant way to accent plant material under trees while providing low-level area illumination.

Shielded and adjustable plant uplight appropriate for highlighting the structural forms of trees and specimen material

Hanging down light pendant mounted in trees to focus light downward onto shrubs and accent plants, creating a moonlighting effect

Directional moonlighting and high branching uplighting is achieved using slender fixtures strapped to a tree trunk above eye level

In Grade uplight with adjustable luminaire casting light up to trees while light source is concealed from view

Security Lighting

Installing wall-mounted security floodlights is not encouraged; however, when desired by the Homeowner, twelve (12)-volt MR 16 floodlights are required. These floodlights are very compact and, when painted to match the wall to which they are mounted, can be unobtrusive.

Motion- or switch-activated wall-mounted security light with shielded hood

Directional wall-mounted security light in matching wall color

Simple, wall-mounted security light casting illumination in a downward direction

Ground-mounted security uplight with shielded lens on an adjustable arm

Underwater Lighting

Underwater lamps are preferred because they incorporate the functionality and energy efficiency of twelve (12) volt halogen lamps. They can be used in a wide variety of applications including pools, fountains, and custom water features. Thoughtful placement of these lamps is important to avoid a source of glare to adjacent properties.

Underwater light with adjustable cover and openings for controlled aiming and concealment of the light source

Ground-set underwater light with adjustable body and perpendicular louvers for light shielding

Underwater flush-mounted niche light with multi-directional cover placing diffused light in desired location

Underwater wall-mounted light with frosted lens casting soft light horizontally from a concealed position

Sport Court Lighting

Pole-mounted light fixtures with cut-off shielding that comply with these guidelines are allowable for the purpose of illuminating allowable sport courts on an as-needed basis with written approval from the Covenant Commission. Wall-mounted sport court lighting fixtures are not allowed.

Fixtures to Avoid

Homes in Horseshoe Canyon are designed to be elegant and built with authentic and durable materials. Fixtures that are not properly shielded, made of low-quality materials, or are not complementary to the character of the Home Style are not allowed.

Avoid using unshielded, pole mounted light fixtures for architectural accenting, sport court lighting, or security illumination.

Lighting fixtures made from low quality materials that do not match the character of the architectural Style are strongly discouraged.

Lighting fixtures designed primarily for commercial use, or of contemporary Styles, do not fit in the character of Estates at Horseshoe Canyon.

Ground-mounted fixtures casting light in all directions are visually disruptive due to glare, and should be avoided.