

CHAPTER 7 – LANDSCAPE AND WALLS

Section 4-701 Purpose and Applicability.

- A. Purpose.** This chapter provides standards for the design of *landscape* treatments and access control *landscapes*, including plant materials, ground covers, *landscape structures*, hardscapes (e.g., plazas, *courtyards*, walls), screening, and access control devices such as fences and gates. Its purpose is to create functional, safe, *accessible* and attractive outdoor areas, as well as screen from view any and all uses that may be unattractive to public view. *Landscape* design standards are intended to: assist in controlling erosion, reduce dust and glare, provide shade, visually soften *building* masses, create defensible spaces that support crime prevention, ensure ADA *accessibility* and aid in screening intense activities. The design standards and referenced guidelines in this chapter are intended to be flexible and adaptable to address the context in which they are applied.
- B. Applicability.** All uses and *developments* shall conform to the standards of this chapter, except as provided for uses and *developments* in the RCC district, all MU districts and single-family uses, as noted herein. Standards for *landscape*, walls and screening in the RCC district and all MU districts shall be established through a *Development Plan Review*, pursuant to Section 6-306. Written approval by the Development Services Department is required prior to installation of any landscape, walls, fences, or other improvements. All *landscape* and walls shall be installed prior to issuance of a certificate of occupancy, except as provided for under Section 4-102(D). Any walls to be located within the public right-of-way shall require *development plan* approval and/or prior approval by the Public Works Department, and receive an encroachment permit.

Section 4-702 General Landscape Standards.

- A. Water Retention Area Landscape Standards.** All on-site water retention areas, other than paved surfaces, shall be entirely *landscaped*, and comply with the criteria below:
1. The retention areas shall not occupy more than sixty-seven percent (67%) of the on-site *street* frontage *landscape* area (*landscape* area does not include driveways); and
 2. All retention areas shall maintain slopes no steeper than four to one (4:1), except as approved by the Public Works Manager.

- B. Low Water Use Landscape.** All *development*, except as noted herein, shall comply with the Low Water Use/Drought Tolerant Plant List, as provided by the Arizona Department of Water Resources. With the exception of residential *subdivision* common areas intended for active recreational use, individual single-family residential units, bona fide city parks of less than ten (10) acres in total area that are intended for use and enjoyment of the general public, whether or not such parks are owned by the city or by a private entity, and "turf-related facilities" as then defined by the Arizona Department of Water Resources (ADWR) active Management Plan (Phoenix), all *new development* shall conform to the following criteria:
1. **Limit on Water Intensive Landscape.** *Landscape* installations for new construction and whenever a new *landscape plan* is required to be filed for the entire site, except *hotels* and motels, shall limit the area of water intensive landscape (including bodies of water, water features, and turf) to no more than twenty percent (20%) of landscapable area in excess of ten thousand (10,000) square feet. *Schools*, parks, cemeteries, golf courses, common areas of housing *developments* and public recreational facilities with water-intensive landscape equal to or greater than ten (10) acres are exempt from this provision. New *hotels* and motels shall limit the area of water-intensive landscape to no more than twenty percent (20%) of the landscapable area in excess of twenty thousand (20,000) square feet.
 2. **Landscape Plan and Inspection Required.** For any project covered under subsection 4-702(B)(1), above, no building permit shall be issued until the Development Services Department has approved a *landscape plan* and an *irrigation plan*. A certificate of occupancy shall not be issued until the Development Services Department has approved the installation of the *irrigation system* and *landscape* treatments, except as provided in Section 4-102(D).
- C. Landscape Area.** Each site to be *developed* shall be required to provide *landscape* areas equal to or exceeding the minimum amounts provided in Chapter 2, Tables 4-202B, 4-203A, 4-203B and 4-204. Where *buildings* and/or *parking* areas are set back from the *street*, all front and *street* side *yards* shall be entirely *landscaped*, except city approved pathways, driveways, *parking* areas and pedestrian amenities. In addition to the minimum on site landscape, there shall be *landscape* in the entire area of the right of way, between *street property line* and back of *street* curb, except for approved driveways, pathways and bike paths.
- D. Ground Cover.** Other than pathways, light standards, walls, fences, trees, and furnishings, *landscape* areas shall be planted with vegetative ground cover or contain other ground cover materials approved through *development plan* review.
- E. River Rocks.** Any river rock material must be embedded in concrete to a depth of two-thirds (2/3) the dimension of the rock to prevent its removal or relocation.
- F. Trees.**
1. **Planted as Screens.** Trees planted as screens shall provide an opaque or semi-opaque barrier, as required through *development plan* review, and shall maintain a view corridor for *street* addressing (i.e., as viewed from curb).

2. **Tree Specifications.** All trees shall be a minimum of one and one-half (1 ½) inch caliper and shall be planted and staked in accordance with the "Standard Tree Planting Detail," as may be amended from time to time, which is on file in the office of the Development Services Department and is incorporated herein by reference. Plant sizes shall be in accordance with the Arizona Nurseryman Association Standards.
3. **Prohibited Trees.** The planting and replacement of pollen-producing olive trees (*olea europaea*) or mulberry trees (*morus alba*) is prohibited. Olive or mulberry tree varieties or cultivars that are pollenless and fruitless such as "swan hill" olive may be planted or replaced. It shall be a violation of this code to plant eucalyptus (except *microtheca*, *papuana*, *krusena*, *formanii*, *erythrocorys*, *spatulata* and *torquata*), elm (except *ulmus parvifolia*), willow, cottonwood or poplar trees in any public right-of-way.

G. Clear Vision Requirements.

1. **Street Intersections and Driveway Entrances.** Except as otherwise approved in writing by the Public Works Manager, a wall, *building*, landscape, or other visual obstruction exceeding two (2) feet in height (measured from *street* curb, see Appendix B for a list of recommended shrubs) shall not be placed within a "clear vision triangle", including street intersections in single-family. Reference the "Corner Site Distance at Intersections" from the Public Works, Transportation Division. There shall be an exception for a reasonable number of trees pruned high enough to permit unobstructed vision.
2. **Pathways.** Groundcovers and shrubs within six (6) feet of pathways shall not exceed two (2) feet in height at maturity. Between six (6) feet and twelve (12) feet of the edge of pathways, groundcovers and shrubs shall not exceed three (3) feet in height at maturity. See Appendix B and C for a list of recommended plants. There shall be an exception for a reasonable number of trees pruned high enough to permit unobstructed vision.

Section 4-703 Street Frontage Landscape Standards.

- A. Street Trees.** Trees shall be planted along *street* frontages, as approved through *development plan* review. *Street frontage landscape* shall conform to the following standards:
1. *Street* trees are required along all *street* frontages, public and private; and
 2. A minimum of one (1) tree shall be provided for every thirty (30) feet of lineal *street* frontage. Tree location and spacing shall be established through *development plan* review.
- B. Screen Parking Areas Along Street.** Where *parking* areas are provided along a *street* frontage, a screening wall or berm shall be provided in conformance with Section 4-706(E).

Section 4-704 Parking Facility Landscape Standards.

All *parking* facilities shall conform to all of the standards below:

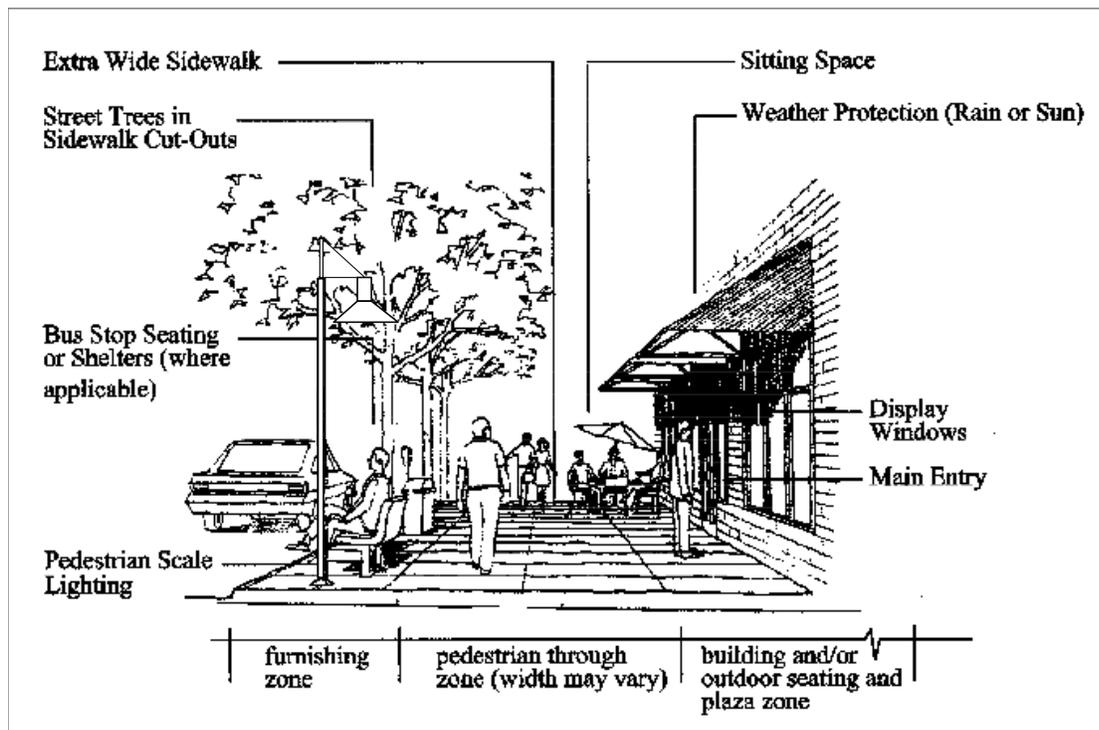
- A. Parking Lot Landscape.** *Parking lots* shall have *landscape* treatments that provide shade and allow for natural surveillance. Two (2) options are provided for conformance:
1. Option 1: Standard Dimensions. A minimum of ten percent (10%) of the surface area of all surface *parking lots*, as measured around the perimeter of all *parking* spaces and maneuvering areas, shall be *landscaped*. When a *use permit* is granted to exceed the *parking* maximum, per Section 4-603, a minimum of twelve percent (12%) of the surface area of all surface *parking lots*, as measured around the perimeter of all *parking* spaces and maneuvering areas, shall be *landscaped*. Such *landscape* treatments shall consist of an evenly distributed mix of shade trees with shrubs and/or ground cover plants. “Evenly distributed” means that the trees and other plants are distributed around the *parking lot* perimeter and between *parking* bays to provide a partial canopy. At a minimum, one (1) tree per twelve (12) *parking* spaces shall be planted to create a partial tree canopy over and around the *parking* area. *Parking* areas shall contain *landscape* islands with trees at the ends of rows of parking, and to subdivide the *parking* area into rows of not more than fifteen (15) *contiguous parking* spaces. *Landscape* island spacing is flexible within the above standards.
 2. Option 2: Performance Standard Based on Tree Canopy. The *landscape plan* provides for an overall tree or shade canopy above surface *parking* areas that is not less than twenty percent (20%) of the *parking* area, based on the expected size of trees within five (5) years of planting. When a *use permit* is granted to exceed the *parking* maximum, per Section 4-603, the *landscape plan* provides for an overall tree or shade canopy above surface *parking* areas that is not less than twenty-two percent (22%) of the *parking* area, based on the expected size of trees within five (5) years of planting. Such determination shall be based on landscape or tree planting guides for the region (e.g., Sunset Western Garden Book). Shade *structures* may be used, subject to a *development plan* review approval. This standard shall be met at 3:00 p.m. on the date of summer solstice. A *development plan* shadow study is required to verify this option.
- B. Parking Structures.** *Parking structures* shall have perimeter *landscape*, consistent with *building setbacks*, that is designed to provide partial screening of walls and vehicle lights, shade along sidewalks, and natural surveillance into *parking structures*, consistent with Section 4-706. Such *landscape* shall be as approved through *development plan* review.
- C. Parking Lot Landscape Dimensions.** All *parking* areas shall conform to the following standards:
1. *Landscape* islands shall be provided except that raised curbs are not required where *parking* areas drain into storm drainage retention features that are integrated into the *parking* area and *landscape* design;

2. To ensure adequate soil, water, and area for healthy plant growth, each *landscape* island shall be a minimum of one hundred twenty (120) square feet in area, a minimum seven (7) feet in width, and a minimum of fifteen (15) feet in length, including curbing. Landscape islands shall extend to the end of the abutting *parking* space(s);
 3. To accommodate pedestrians, *landscape* islands may be required to include minimum five (5) feet wide raised pathway with wheelchair ramps. For such situations *landscape* island widths shall be increased to a minimum twelve (12) feet;
 4. Each *landscape* island shall include, at the time of installation, a minimum of one (1) tree with a minimum caliper of one and one-half (1 ½) inches and five (5) ground covers of one (1) gallon size for each *parking* space length. All ground covers in *parking lot landscape* islands shall not exceed two (2) feet in height and be selected from the recommended ground cover and shrub plant list (see Appendix B), and be of a species that will not grow to interfere with natural surveillance of the *parking lot*. *Development plan* review modifications to these and other standards shall demonstrate that the alternative provides equal or superior appearance and plant health;
 5. All *parking* areas shall conform to the *street* clear vision requirements under Section 4-702(G)(1); and
 6. Tree trunks shall not be placed closer than twenty (20) feet, measured horizontally, from a light source. Trees and lighting shall be located to avoid conflicts with one another and to avoid conflicts with existing and proposed *structures*. *Development plan* review modifications to this standard shall demonstrate the alternative does not reduce required lighting levels.
- D. **Screens.** Parking facilities shall be screened from view, from the public right-of-way, as provided in Section 4-706(E).
- E. **Display Prohibited.** *Landscaped* areas shall not be used for *parking* of vehicles, display of merchandise or other uses detrimental to the *landscape* improvements.

Section 4-705 Pedestrian Amenities.

The city may require the placement of pedestrian amenities along sidewalks and pathways to support defensible space, crime prevention, pedestrian comfort and *accessibility*. Pedestrian amenities include but are not limited to: extra wide sidewalks, outdoor seating, shade *structures*/weather protection (quantity of shade trees exceeding minimum *street* tree standards, awnings, canopies or other shade *structures*), bus waiting areas, plazas, *courtyards*, low-level pedestrian-scale lighting, *public art*, and similar amenities as approved by the city. See examples in Figure 4-705. The requirement to provide pedestrian amenities shall be determined through *development plan* review, based on the probable impact of the *development* and the appropriateness of the amenity to the project design. Where a pedestrian amenity is located adjacent to or within the public right-of-way, it shall conform to the City of Tempe Transportation Design Guidelines. An encroachment permit shall be required to place any pedestrian amenity in the public right-of-way.

Figure 4-705. Pedestrian Amenities



Section 4-706 Screens, Walls and Access Control Landscapes.

The following standards are intended to avoid or reduce impacts regarding visual, sound, privacy, and/or glare to and from land uses, and to implement the crime prevention and security standards contained in this chapter. In all locations where walls are either required by this Code, or desired by the owner of the property, the walls shall conform to all provisions of this chapter.

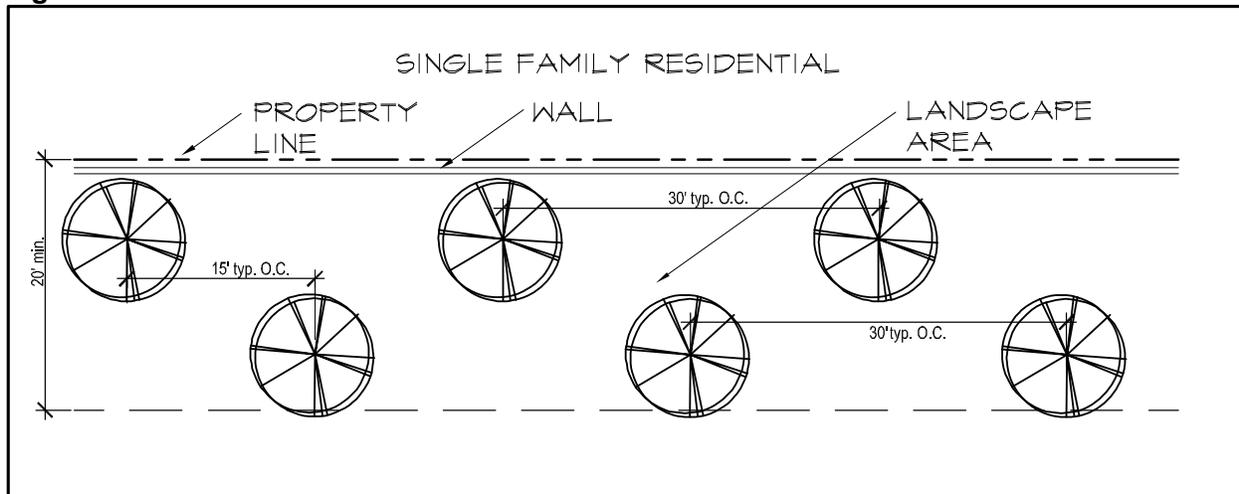
A. General Fence and Wall Height Standards.

1. The maximum height of any freestanding wall or fence shall be measured from the highest adjacent finished surface of the ground, paving, or sidewalk within twenty (20) feet, unless otherwise noted;
2. Walls or fences in a required front *yard building setback*, including walls for *single-family dwellings*, shall be four (4) feet maximum in height. An increase in the maximum four (4) foot height may be permitted subject to a use permit. With a use permit, the maximum height may be up to six (6) feet, except that an additional two (2) feet of height may be permitted for architectural features including but not limited to archways, pergolas, and other similar features. For all heights above four (4) feet, the use permit shall demonstrate that a natural surveillance to the street will be maintained by incorporating openings, providing transparent materials, or varying height/materials;
3. In areas behind a required front *yard building setback* and within the required rear and side *yards*, the maximum height of walls shall be ten (10) feet, except where a taller wall is necessary to screen *service areas* under Section 4-706(G). For single-family uses, the maximum height shall be eight (8) feet;
4. The Clear Vision Requirements, Section 4-702(G), shall apply to fences and walls; and
5. All fences and walls shall be subject to city review and approval through *development plan* review, or by approval of the Development Services Manager, or designee. Any wall in excess of six (6) feet shall require a building permit, as required by Building Code.

- B. Reverse Frontage Walls.** An eight (8) foot masonry wall shall be required along the rear of reverse frontage *lots*, including single-family.
- C. Wall Design.** All required walls shall be located and designed based on the intended screening function, proposed use and adjoining uses, as follows:
1. Walls placed between a residential district and any commercial use, industrial uses, or surface *parking lot* shall be constructed of masonry or concrete, or equal or better quality material, as approved through *development plan* review. Alternatively, an ornamental iron fence, combination iron fence with masonry pillars, or similar design with equal or better quality material may be approved.
 2. All masonry walls shall have an architectural texture, color and material compatible with the primary *building* on-site (or on respective sides). Walls may have ornamental decorative iron fence panels, vertical pickets with spacing that is consistent with the Building Code, as an integral part of the design of the wall;
 3. A living wall or see-through ornamental iron fence may be approved as a substitute for masonry if the wall is not required for visual screening of *mechanical equipment*, outdoor storage areas, or *parking* areas. See Landscape Design Guidelines in Appendix A-IV.
- D. Land Use Buffers.** *Property lines* of parcels developed for multi-family, *mixed-use*, commercial, *office*, or industrial uses that are adjacent to or separated by an *alley* from any single-family residential district (except when land is used for city parks) or use shall provide a wall and *landscape* screen in conformance with the following standards:
1. Screen planting areas shall be at least six (6) feet clear in width;
 2. Screening shall conform to the Landscape Design Guidelines in the Appendix A-IV;
 3. These buffer areas shall contain trees with a maximum spacing of twenty (20) feet on center;
 4. All walls shall be constructed of masonry or concrete material and shall be a minimum of eight (8) feet in height;
 5. Screens and walls shall provide for natural surveillance, when required by the Development Services Manager or designee; and

6. Where a commercial, *office* or industrial *development* of over fifty thousand (50,000) square feet of *building* area is located adjacent to a single-family residential district or use, the *landscape* buffer described above in this section shall be a minimum of twenty (20) feet wide adjacent to that use. This buffer shall be planted with two (2) rows of trees along the interior side of the required wall. Each row is to contain trees spaced at thirty (30) feet on center and staggered by fifteen (15) feet to the adjacent row, except where an alternative design approved through *development plan* review would provide an equal or better effect in screening the two (2) uses. See Figure 4-706D.

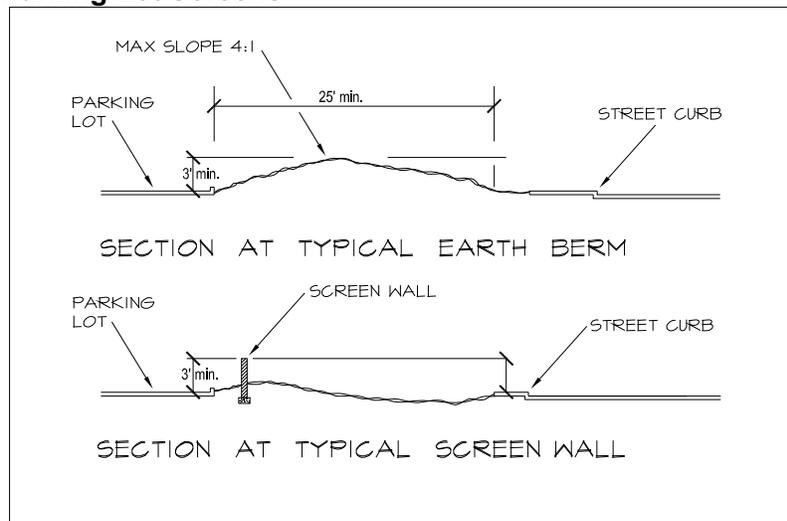
Figure 4-706D. Land Use Buffer



- E. Parking Lot Screens.** All on-site *parking* areas adjacent to *streets* shall be screened from *street* view. This standard can be met through the use of the following screening methods, which may be used individually or in combination:

1. A *parking lot* screen wall shall be installed adjacent to the edge of the *parking lot*. The top of the *parking lot* screen wall shall be a minimum of three (3) feet above the adjacent *parking lot* surface. *Parking lot* screen walls shall be constructed of masonry or concrete, be a minimum of eight (8) inches in thickness, and incorporate offsets and relief. Open areas or portals for natural surveillance shall be provided, if required by the Development Services Manager or designee; or
2. Earth berms, if used in lieu of or in conjunction with screen walls, shall have a maximum slope of 4:1 and minimum width of twenty-five (25) feet. Berms are allowed only when there is sufficient area to create a three (3) feet tall berm. See Figure 4-706E.

Figure 4-706E. Parking Lot Screens



- F. Outdoor Storage Areas.** All outdoor storage areas for materials, vehicles, *trailers*, equipment, trash or other similar items shall be enclosed by a masonry or concrete wall with gate to screen the view of these uses from public rights-of-way and adjoining residential, commercial and *mixed-use* districts. This wall, and gate, shall be a minimum of eight (8) feet tall but not to exceed ten (10) feet tall, measured from the highest adjacent *grade* within twenty (20) feet or *street curb*, whichever is higher.
- G. Service Areas.** All *service bays*, loading, delivery and refuse areas shall be screened from *street view* by a minimum of a six (6) foot high masonry wall. Site conditions and surrounding uses will be used to determine maximum height of walls adjacent to loading areas, *service bays*, *mechanical equipment*, etc. that are required to be screened.
- H. Alleys.** Screening requirements along *alleys* shall be the same as for land use buffers, See Section 4-706(D), except when *alley access* is allowed by *use permit* per Section 4-502(F)(2).
- I. Mobile Home Parks, Mobile Home Subdivisions and Trailer Parks.** Perimeter boundaries of all *mobile home parks*, *mobile home subdivisions* and *trailer parks* shall contain a screening and security wall that conforms to the standards in Section 3-416(B), Mobile Homes Perimeter Walls.