

# **LANDSCAPING, BUFFERING, SCREENING, FENCES AND WALLS**

**CITY OF ARVADA**



**AUGUST 2009**

## 6.5 LANDSCAPING, BUFFERING, SCREENING, FENCES, AND WALLS

The regulations of this section shall apply to all development in the Standard Zone Districts, New Communities Subdistricts, Clear Creek Subdistricts, and PUD Zone Districts, unless inconsistent with more specific standards applicable to the development (a) pursuant to §6.9 (Activity Center Design), or (b) adopted by the Arvada Urban Renewal Authority, or (c) contained in an adopted corridor plan.

### 6.5.1 Purpose and Intent

Landscaping should maximize visual framing of buildings, the buffering of parking, garage, and service areas, and the creation of a consistent landscape character from one lot to another within a development. Landscaped areas bordering natural open space should create a transition from formal, irrigated landscape to natural forms and vegetation. Water shall be conserved to the greatest degree feasible for the amounts of landscaping required.

### 6.5.2 General Standards

A. Plant Types. All required landscaping shall emphasize the use of native and drought-tolerant species that reflect the character of the native landscape, and all required tree and shrub species shall be selected from the City plant list unless substitutions are specifically approved. The following standards are designed to permit, but not to require, the installation of xeriscape landscaping.

1. Minimum Sizes. All plant materials shall meet the minimum size requirements shown in the table below.

Plant Type	Minimum Size
Deciduous Trees	2 inch caliper (measured 1 foot above the ground)
Ornamental Deciduous Trees	1 1/2 inch caliper
Evergreen Trees	6 feet tall
Shrubs	5-gallon container size + 24 inches tall
Ground Cover	1-gallon container with 12 inch spread

2. Tree Species Mix. Not less than 10% of all trees required to be installed shall be evergreen species, and such evergreens shall be planted at least 8 feet away from all paved areas. Any one species of trees shall not make up more than 20% of the total tree plantings for the property.

3. Inorganic Ground Cover. Inorganic material such as river rock, cobble rock, gravel, artificial turf, artificial plant material, concrete, or asphalt paving may not be used as a permanent, primary ground cover within the landscaped area, except where:

- Rock is utilized as an integral part of the landscape design, does not exceed 25% of each distinct landscape area and is part of an approved plan.
- Drainage or soil conditions require a non-irrigated and/or surface pan at finished grading adjoining the building's foundation.

- c. Artificial turf is used as part of an approved plan for recreational fields or common amenities such as a clubhouse.
  - d. Artificial turf is used for backyard and sideyard applications that are not in public view. Public view includes any area viewable from areas with public access such as streets, sidewalks, parks, and trails. Artificial turf for a putting green not larger than 400 sq. ft. may be placed in side or rear yard even if in public view.
  - e. Concrete, rock or asphalt materials are used for walkways, driveways or patios.
  - f. Where mulches are used, they shall be applied at a minimum depth of 2" and covered with plant materials that meet the ground coverage requirements of Paragraph D.
4. Plant Beds. Plant beds shall include landscaping, mulch over a weed barrier, and edging along turf areas.
5. Installation. Plants shall be installed in accordance with the specifications of the Engineering Code of Standard Specifications.
- B. Preservation of Significant Landscape Features. Features that are to be incorporated into open space areas pursuant to §6.4.2 (Selection) shall be protected from damage during all phases of site development.
- C. Tree Preservation and Replacement.
- 1. Tree Preservation and Replacement Standards. Existing healthy trees shall be incorporated into new developments to the maximum extent feasible. In relation to the size of existing trees, the Applicant shall satisfy the following general requirements.
    - a. Trees that are smaller than 2" in caliper may be preserved, transplanted, or removed at the Applicant's discretion.
    - b. Trees that are 2" - 6" in caliper shall be preserved in place, transplanted, or replaced on site or a location approved by the City.
    - c. Trees that are greater than 6" in caliper shall be preserved in place, transplanted, or replaced on site or a location approved by the City. Replacement trees will at least equal the total number of caliper inches removed from the site. (Four 5" caliper replacement trees satisfy the removal of one 20" caliper tree.)
  - 2. City Determination. The determination that existing trees are to be preserved, replaced, or relocated shall be made by the City based on professional tree analysis provided by the applicant.
  - 3. Penalty. If an Applicant fails to comply with these minimum provisions to preserve trees, the Applicant shall be required to replace each tree that is damaged beyond remedy or destroyed at the rate proposed in subsection 1.c. above. If an owner does not choose to replace irreparably damaged or destroyed trees intended for preservation, the Applicant will be penalized an amount equal to the caliper inch replacement cost plus 25% for those trees.

- a. The Applicant is required to spend the amount of the penalty for trees at the project. If the Applicant does not choose to plant trees on the project site, the Applicant may choose to plant the trees on a nearby public property.
4. Tree Removal Prior to Application Submittal. Applicants/owners are not permitted to remove trees, 2" or larger, within 6 months prior to submittal of a development application, unless prior written approval of the Community Development Director has been obtained. Any development application for a site where such removal has occurred without permission shall be required to install 125% of the number of trees and shrubs otherwise required for the site.
  5. Procedure. The Applicant shall satisfy the following process by which trees will be preserved, transplanted or replaced:
    - a. With a preliminary subdivision plat or site plan application, whichever occurs first, the Applicant shall provide an analysis of existing trees with 2" or greater calipers, prepared by a professional forester or arborist that will include as a minimum:
      - i. A site plan locating each tree (2" min. caliper) and recommending trees intended for preservation in place, transplanting on site, or replacement.
      - ii. Species and size of each tree (caliper/height).
      - iii. Condition, indicating overall health of each tree with an evaluation of structure, pests, disease, or other factors affecting each tree.
      - iv. Recommended tree protection efforts, especially during construction, which will include protection of each root zone, trunk, limbs, and foliage by fencing the drip line of deciduous trees and fencing 1.5 times the square footage of drip lines for evergreens.
      - v. Recommended maintenance practices that will sustain the health of all protected trees, including provisions for irrigation during growing seasons, pruning, foliar feeding, etc.
      - vi. Recommended removal of all trees in a condition hazardous to the proposed development.
    - b. With the preliminary subdivision plat or site plan application, the Applicant shall incorporate recommendations of the forester or arborist into preliminary landscape and development plans for the project. When calculating required landscaping, existing trees that are preserved or transplanted shall relieve the Applicant of the requirement to plant an equal number of new trees based on caliper inches. (For example, if a 30" caliper tree is preserved the Applicant will be credited for fifteen, 2" caliper trees.)
    - c. With a final subdivision plat or site plan, as applicable, the Applicant shall incorporate those trees intended for preservation in the final landscape plan and in the construction plans. The Applicant will integrate the

following provisions into overall grading, utility, road, and irrigation ditch plans:

- i. Provide a significant water supply deliverable to existing trees from the first day of construction to the completion of construction that includes a new irrigation system. (Actual watering schedule and amount will comply with forester/arborist recommendations.)
- ii. Fence around drip lines of deciduous and around one and one-half times the square footage of drip lines of evergreens.
- iii. Spray trees with pesticides before construction starts and before each growing season during construction.
- iv. Avoid trenching through root zones within drip lines by boring or pushing utilities under roots.
- v. Root prune damaged roots within one hour after damage occurs.
- vi. The maximum area of cuts and fills within the fenced root zone shall not exceed 25% of such zone.
- vii. Avoid placing fill against tree trunks (using retaining walls, etc.)
- viii. Avoid construction activity (materials, storage, vehicular traffic, chemical disposal, fires, cut, fill, etc.) within the fenced root zone.

D. General Landscaping Standards. All required open space areas shall meet the following requirements in the table below, and no landscaped open space shall count toward compliance with minimum landscaping requirements unless it meets the requirements in the table below, unless (a) they are subject to more specific requirements elsewhere in this Code, or (b) the Decision-Making Body determines, through the development approval process, that an alternative form of landscaping would be more consistent with the Arvada Comprehensive Plan and provide a better amenity to the public.

Element	Requirement
Minimum area and dimensions	100 square feet, with no dimension of less than 5 feet if shrubs and ground cover are to be planted, and no dimension of less than 8 feet if any trees or spray-irrigated sod are to be planted
Minimum plant materials (other Code sections may require more materials)	One large tree or two small trees (ornamental trees) per 3,000 square feet plus:  One shrub per 600 square feet and a combination of ground cover, ornamental grasses or turf which are planted to achieve 75% coverage at maturity.

E. Detention and Retention Ponds. Detention and retention ponds shall be physically, functionally and visually integrated into adjacent landscape

uses through the use of topography, building and parking lot placement, plantings, permanent water features, recreational or open space amenities, or other methods. Slopes shall not exceed a 4:1 ratio or be flatter than 2%.

- F. Visibility Triangles. Except in single-family residential areas, landscaping shall be installed and maintained in such a manner that it does not interfere with protected intersection or driveway visibility triangles as defined in §6.8.1E (Intersection and Driveway Visibility).
- G. Water Wise Landscaping Required. All landscaping plans shall be designed to conserve water to the greatest degree practicable. The regulations of paragraph “H” cover the following types of development:
1. Single-family detached development where landscaping is installed by the developer or builder;
  2. Two-family development where landscaping is installed by the developer or builder;
  3. Multi-family development;
  4. Commercial development;
  5. Industrial development;
  6. Office development;
  7. Any privately-owned common open space; and
  8. Landscaping installed within public rights of way as may be required as part of the development approval process or City street templates.
- H. Water Wise Landscaping Standards.
1. Plant Selection. All tree, shrub, groundcover, perennial, vine, and grass selections shall come from the City’s recommended list. Substitutions are only allowed if approved by Community Development Director upon reviewing evidence as to the water-conserving qualities of proposed substitutions.
  2. Use of High-Water-Demand Landscapes. High water-demand landscapes (such as irrigated cool season turf grass) are limited to areas of high pedestrian activity, tree lawns, primary entrance features, club-houses, wetland plantings, or in single-family lot front yards. High-water-demand turf shall be minimized to the extent practicable and not exceed 50% of the total landscaped area in residential projects and 35% in commercial, office or industrial projects. High-water-demand turf is specifically prohibited in the following (unless approved by the Community Development Director after reviewing evidence of a water-efficient irrigation system):
    - a. Parking lot islands,
    - b. Slopes greater than 4:1,
    - c. Street medians,

- d. Storm water detention ponds, unless designed for active recreation or needed as part of required wetlands;
  - e. Any space less than 8 feet wide.
3. Grouping Plants According to Water Needs. All plantings should be grouped according to their water needs to minimize water use.
4. Soil Amendments. Prior to planting, all sites for plantings shall incorporate soil amendments at a rate of 3 cubic yards per 1000 square feet to a minimum depth of 6". A lesser amount shall be allowed if a soil test shows that 3 cubic yards per 1000 square feet is not necessary for water retention and deep rooting of plant materials. If the specified plant material requires less fertile soil, those areas may have less soil amendments installed if approved by the Community Development Director. These areas shall be identified on the landscape plan. Existing topsoil shall be salvaged and stockpiled for use as soil amendments or topsoil. No topsoil shall be removed from the site unless the City approves the transfer of topsoil to a City-owned park or open space area. A note shall be placed on the landscape plan reflecting the above requirements regarding soil amendments and topsoil. Examples of acceptable soil amendments include compost and aged manure. Mountain peat and inorganic materials such as sand, gypsum and lime are prohibited soil amendments. All sites are subject to inspection by the City for compliance with soil amendment requirements.
5. Irrigation. The landscape plan shall label or note the type of irrigation to be applied to each plant hydrozone to ensure that plants receive only the needed water. In addition, the plan shall include:
- a. A rain sensor with automatic shut-off of the system during periods of high moisture;
  - b. A drip, sub-surface, bubbler or low volume irrigation system for all planting strips less than 8' wide and all planting beds involving trees, shrubs, perennials and groundcover; and
  - c. An irrigation clock which allows programming to meet the differential needs of the specified planting plan.
6. Restrictive Covenants Requiring Sod. Any restrictive covenant that becomes effective after July 15, 2003 shall not prohibit the use of water-wise landscaping or require more than 50% high-water-demand turf. This provision shall not restrict the individual and voluntary use of a greater percentage of high-water-demand turf.
- I. Landscape Maintenance. All plants shall be maintained continually in a healthy condition in accordance with generally accepted professional horticultural standards and practices. Plants that die or are unhealthy shall be replaced. Regular pruning and trimming shall apply to maintain health and an attractive appearance and to permit the plants to achieve their intended form and height. Landscape areas shall remain free of weeds, litter, junk, rubbish and other nuisances and obstructions.

To prevent weed growth, erosion and blowing dust, areas not covered by vegetation shall be covered with mulch, wood or bark chips, or decorative rocks or cobble, or similar natural materials providing a clean, uniform appearance.

### 6.5.3 Residential Landscaping

- A. Single Family Residential Front Yard Landscaping Requirements. Prior to the issuance of a certificate of occupancy, single family or two-family residences on lots containing less than 6,000 square feet of land area shall be landscaped as follows:
1. Tree lawns and front setback areas shall be landscaped with trees, turf, low ground covers, shrubs, or flowers (unless such setback areas are adjacent to designated open spaces).
  2. Subject to documented soil difficulties, shrubs shall be planted at a maximum spacing of 5 feet on center along all building foundations facing the street.
  3. At least one ornamental, shade, or evergreen tree shall be installed in the front setback area.
  4. Tree lawns shall contain street trees spaced at a maximum of one tree per 40 linear feet.
- B. Residential Common Area Landscape Requirements. Prior to issuance of a certificate of occupancy, all common areas in single family and multi-family residential developments shall be landscaped as follows.
1. Landscape Locations. All front setback areas (except setbacks adjacent to designated open spaces), excluding driveways, access lanes, and sidewalks, shall be landscaped.
  2. Foundation Planting Requirement. Barring documented soil difficulties, shrubs shall be planted at the rate of at least 20 shrubs per 100 lineal feet of building facade visible from streets, residences, or public lands. Foundation plantings may be clustered to provide interest and accent key features such as building entries.
  3. Entryway Planting Requirement. Barring documented soil difficulties, a landscaped area with minimum dimensions of at least 5 feet shall be provided at (a) the primary entrance to the development, and (b) at least one primary pedestrian entrance to the primary structure.

### 6.5.4 Non-Residential Landscaping

- A. Foundation Planting Requirement. Barring documented soil difficulties, shrubs shall be planted within 10 feet of the primary structure foundation along any facade visible from streets, residences, or public lands, in an amount equal to 10% of the total amount of trees and shrubs required pursuant to §6.5.5 (Parking Lot Landscaping) and §6.5.6 (Neighborhood Buffer and Screening Standards). Foundation plantings may be clustered to provide interest and accent key features such as building entries.

- B. Entryway Planting Requirement. Barring documented soil difficulties, a landscaped area with minimum dimensions of at least 5 feet shall be provided at (a) the primary entrance to the development, and (b) at least one primary pedestrian entrance to the primary structure.
- C. Front Setback Landscape Requirement. All front setback areas shall be landscaped.

**6.5.5 Parking Lot Landscaping**

The provisions of this Section shall apply to all development in the City, except that development in the CC Sub-Districts shall be exempt from parking lot interior landscaping requirements.

- A. Intent. Parking areas should be landscaped to reduce the apparent size of the parking area; prevent views of long rows of parked cars; create an impression of smaller, connected parking lots; provide shade for parked cars; and define pedestrian access ways.
- B. Parking Lot Frontage Landscaping.

Location	Requirement
<b>Standard Zone Districts</b>	
All Street frontages	A landscaped area at least the depth of the required setback shall be provided along each street frontage. All street frontages of parking lots shall include shrubs or other approved ground cover planted with a maximum spacing of 5 feet on center or a berm meeting the requirements of §6.5.9. Street frontages of parking lots shall include deciduous trees planted with a maximum spacing of 40 feet on center. Screen walls up to 30 inches tall are permitted between the required landscaping and the parking lot. Plant locations need to be arranged with quantities based on the previous spacing requirements.
<b>New Communities Sub-Districts</b>	
All Street Frontages	All Requirements for the Standard Zone Districts apply.
<b>Clear Creek Sub-Districts</b>	
<b>NOTE:</b> In Subdistricts A and C, property owners shall not be responsible for screening parking lots from public view from elevated sections of roadways, specifically Highway I-76, Ralston Road, Sheridan Blvd., and Marshall/Lamar St.	

Location	Requirement
<p>All street frontages</p> <p>(Required in all Subdistricts. However, in Subdistrict A, the requirement applies only to properties adjacent to W. 52nd Ave., W. 60th Ave., Marshall/Lamar St., or Sheridan Blvd. In addition, in Subdistricts B and D, Driveway Parking areas are not required to be screened.)</p>	<p><b>Option 1:</b> Within a minimum 8-foot wide strip, a solid planting of shrubs (maximum spacing of 5 feet on center) with a minimum of one tree every 40 linear feet for the length of the planting. There must be at least one tree for each planted area. Within 10 feet of any automobile driving lane interior to the project, shrubs may not exceed 3 feet in height.</p> <p><b>Option 2:</b> Within a minimum 18-foot wide strip, provide a minimum 3-foot high earth berm. A minimum of one tree every 40 linear feet must be planted.</p> <p><b>Option 3:</b> Within a minimum 9-foot wide strip, provide a minimum 3-foot high berm that is held back by a retaining wall. A minimum of one tree every 40 linear feet must be planted.</p> <p><b>Option 4:</b> Within a minimum 7-foot wide strip, provide a minimum 3-foot high wall or opaque fence. A minimum of one tree every 40 linear feet must be planted.</p>
<b>PUD Zoning Districts</b>	
<p>All street frontages</p>	<p>All PUDs shall provide those buffers and screening devices required for Standard Zone Districts unless alternative requirements are explicitly stated in the approved PUD. Additional buffering and screening may be required along the boundaries of PUDs to screen views of parking areas containing more than 10 spaces.</p>

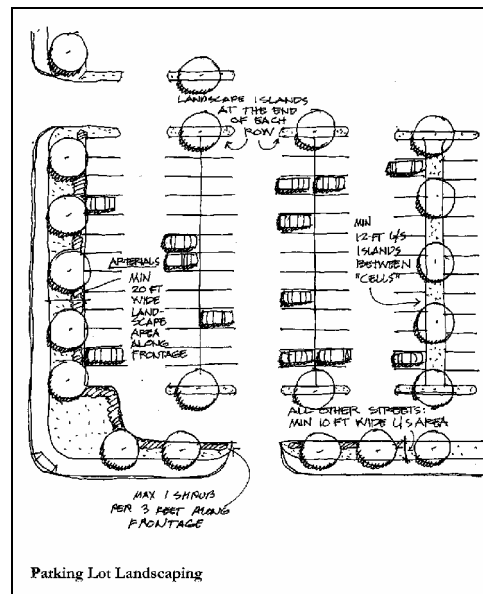
C. Parking Lot Interior Landscaping.

1. CC Sub-Districts Exempt. Development in the CC Sub-Districts shall be exempt from the following parking lot interior landscaping requirements.
2. Minimum Amount of Interior Parking Lot Landscaping Required. The following interior parking lot landscaping shall be required for all parking areas of more than 24 spaces, and where no more than 12 spaces in a row exist. In addition to required street frontage landscaping:
  - a. A minimum of 7.5% of the paved lot surface in multi-family residential parking lots shall be landscaped, and
  - b. A minimum of 5% of the paved lot surface in non-residential parking lots outside the NC Zoning Sub-Districts shall be landscaped, and
  - c. A minimum of 10% of the paved lot surface in non-residential parking lots in the non-residential NC Sub-Districts and PUD-I Zoning District, shall be landscaped.

3. Requirements/Layout.

- a. Landscaping shall include at least one deciduous tree per 300 sq. ft. of required landscaped area, and at least eight shrubs for each required tree.
- b. Unless an alternative layout is approved during the development process, the minimum landscaped areas shall be organized into:
  - i. A minimum 300 sq. ft. landscaped entry median (if the lot contains 180 or more parking spaces),
  - ii. Planted islands at the end of each parking row at least 8 feet in width,
  - iii. At least one landscaped island for each 12 consecutive parking spaces in the parking lot, and
  - iv. Internal landscaped areas at least 12 feet wide to separate parking areas into cells, with the maximum number of parking spaces in each cell shown in the following table.

Predominant Type of Land Use	Maximum Number of Parking Spaces in Cell
Residential	90
Commercial and office	180
Industrial	180 if located within 300 feet of a public street (otherwise, no maximum)



6.5.6 Neighborhood Buffer and Screening Standards

- A. Intent. The purpose of these standards is to provide visual and noise separation of intensive uses from less intensive uses; to preserve and

enhance property values by ensuring that yards, open spaces, parking lots and areas next to public rights-of-way are constructed and maintained with plants and landscape materials; and to provide flexibility in the provision of required landscape materials and designs.

B. Buffer Types.

1. The buffers described in the following table shall be provided where applicable. In each case where buffers are required along the boundaries between two development areas, the required buffer shall be provided by the latter of the two adjacent properties to develop.
2. Buffers shall not be required along any portion of a boundary that is adjacent to a designated open space that has been protected from future development, except where a parking lot, truck loading area, outdoor storage area, or trash collection/compaction area will be adjacent to the protected open space.
3. The Community Development Director may waive or modify these buffer requirements upon a finding that an existing railroad, canal, or other natural or manmade feature will adequately buffer the adjacent developments to the same or greater extent as this section requires.
4. Additional buffering and screening requirements for truck loading areas, outdoor storage areas, and trash collection/compaction areas are described in §6.5.11 (Outdoor Storage, Trash Collection/ Compaction, and Truck Loading Areas).

Element	Requirement
<b>USES WITHIN STANDARD ZONING DISTRICTS</b>	
<b>Type A: Single Family / Non-Single Family Residential Edges</b>	
Minimum width of strip	8 feet
Minimum length of strip	Entire length of adjacency (up to 25 percent of length may be interrupted as needed to provide vehicle or pedestrian ingress/egress)
Minimum plant materials	One large tree per 50 feet on center plus any combination of small trees and shrubs at the following densities: Small trees: One per 100 linear feet; Shrubs: One per 100 feet;  In addition, groundcover shall cover at least 75% of remaining areas.
<b>Type B: Non-Residential / Residential Edges</b>	
Minimum boundary treatment	6 foot high solid masonry wall or solid fence with masonry posts every 120 feet on center or at lot corners, whichever distance is less. The Community Development Director may approve alternative boundary treatments that achieve the same or better buffer boundary treatment.
Minimum width of strip	20 feet
Minimum length of strip	Entire length of adjacency (up to 25% of length may be interrupted as needed to provide vehicle or pedestrian ingress/egress)
Minimum plant materials	One large tree per 50 linear feet of buffer, located on the side of the wall or fence towards the use required to provide the buffer, regardless of which property the wall or fence is located on. Large evergreen trees shall be used in an amount equal to or greater than 30% of total tree plantings.
<b>Type C: Industrial / Non-Industrial Edges</b>	
Minimum width of strip	10 feet
Minimum length of strip	Entire length of adjacency (up to 25% of length may be interrupted as needed to provide ingress/egress)
Minimum plant materials	One large tree per 50 linear feet of buffer plus small trees and shrubs at the following densities: Small trees: One per 100 linear feet of buffer; or Shrubs: Three per each 100 feet of linear buffer.  In addition, groundcover shall cover at least 75% of remaining areas. Large evergreen trees shall be used in an amount equal to or greater than 50% of total large tree plantings.
<b>Type D: Utility Screening</b>	
	Evergreen shrubs or evergreen trees (as tall as the enclosure) shall be used to screen utility service boxes and other ground mounted equipment visible from public or private streets wherever possible.

Element	Requirement
<b>USES WITHIN NEW COMMUNITIES SUB-DISTRICTS</b>	
	All development in NC Subdistricts shall provide those types of buffering and screening devices required for Standard Zone Districts.
<b>USES WITHIN CLEAR CREEK SUB-DISTRICTS</b>	
Residential / Non-Residential Edges; Industrial / Non-Industrial Edges; and SF Residential / Non-SF Residential Edges  (Required in all CC Sub-Districts, but in Sub-District CC-A only parking areas adjacent to a residence in Sub-District CC-D need to be screened. )	<p><b>Option 1:</b> Within a minimum 7-foot wide strip, provide one tree for every 350 square feet of area. A minimum of 50 percent of the total number of trees must be evergreen. No more than 10 percent of the ground surface area shall be exposed gravel or mulch. Landscaping shall be used in combination with a 6-foot tall opaque fence or wall.</p> <p><b>Option 2:</b> Within a minimum 20-foot wide strip, plant evergreen trees in a triangulated pattern at a minimum spacing of 20 feet on center, with an average overall density of at least one tree for every 400 square feet of area.</p> <p><b>Option 3:</b> Within a minimum 15-foot wide strip, provide at least one continuous row of evergreen shrubs (minimum 5 feet tall within 5 years of initial planting) planted at minimum spacing of 5 feet on center, and deciduous trees planted at an average of one tree every 40 linear feet.</p> <p><b>Option 4:</b> Within a minimum 25-foot wide strip, provide a berm a minimum of 36 inches tall, with a maximum slope of 4:1, which contains a minimum overall plant density of one tree and two shrubs for every 400 square feet of area. A minimum of 50 percent of the trees must be evergreen.</p>
Utility and Other Screening	All development in the CC Sub-Districts shall provide those types of buffering and screening devices required for Standard Zoning Districts, plus those forms of buffering and screening required by §6.5.5 (Parking Lot Landscaping), §6.5.11 (Outdoor Storage, Trash Collection/ Compaction, and Truck Loading Areas), and §6.5.12 (Outdoor Retail Display Areas).
<b>USES WITHIN PUD ZONING DISTRICTS</b>	
	All PUDs shall provide those buffers and screening devices required for Standard Zone Districts unless alternative requirements are explicitly stated in the approved PUD. Additional buffering and screening may be required along the boundaries of PUDs where needed to protect residents from undesirable views, lighting, noise, or other off-site influences or to protect occupants of adjoining residential districts from similar adverse influences from within the PUD.

### 6.5.7 Arterial and Collector Frontage Screening Design Requirements

- A. Double-Frontage Lots. On all double-frontage lots, a perimeter fence shall be installed on or near the rear lot line adjacent to an arterial or collector street and the area between the perimeter fence and the arterial or collector street shall be landscaped according to the following standards (see §6.5.7.F below for required fence setback):

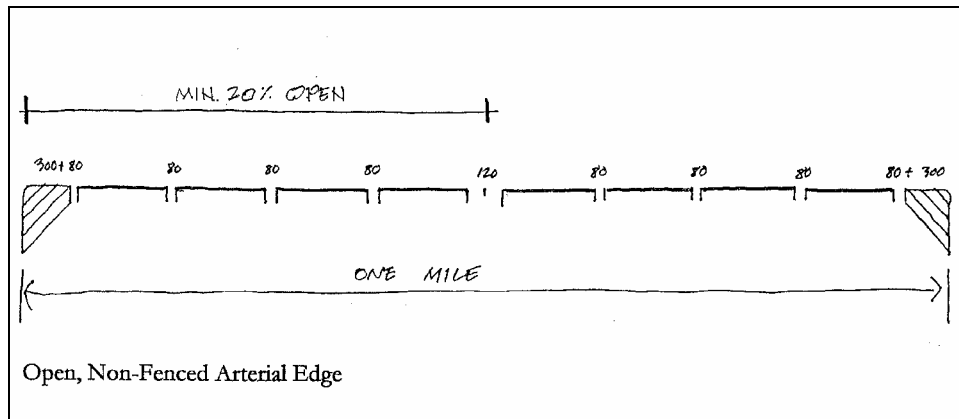
1. Water-wise landscaping shall be installed between the perimeter fence and the arterial or collector pursuant to a landscaping plan approved during the development approval process; and
2. The water-wise landscaped area shall be irrigated from a tap billed to a homeowner's association (if such an organization exists) or to a landowner whose lot adjoins the landscaped area (if no association exists).
3. Where a homeowners association exists or is to be created, it shall be required to maintain such landscaped area in perpetuity. Where no such association exists or can be created, the development approval shall require adjacent landowners to maintain such areas, and an instrument describing that responsibility shall be recorded in the real property records of all affected lots or parcels.

B. Sound Barrier Fences and Walls. The developer or property owner may install a sound barrier (noise reduction) fence along the perimeter of a development that is adjacent to an arterial street or railroad track(s), subject to the following standards:

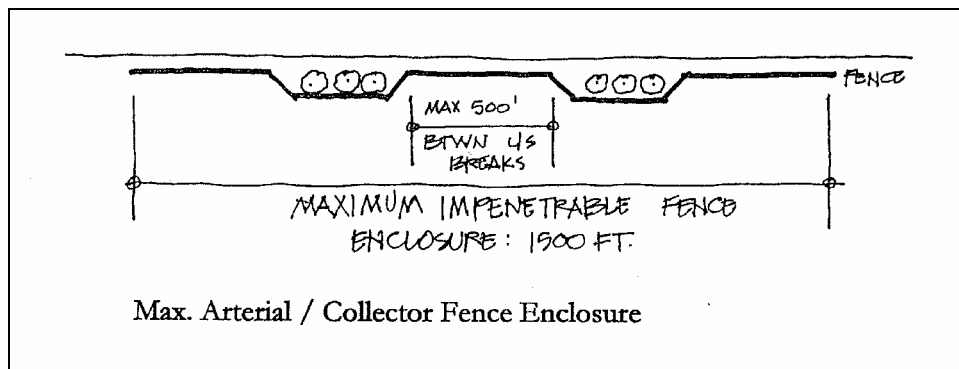
1. The sound barrier fence/wall shall be a maximum 8 feet in height;
2. The developer/owner shall install all sound/barrier fences and provide a uniform design for such fence/wall; and
3. All sound barrier fences/walls shall be a minimum length of 500 feet.

C. Minimum Open Frontage.

1. If a fence or wall 42 inches or more in height is used along an arterial street, a minimum of 20% must be open at intersecting streets, pedestrian entryways, parks or open space, any non-walled land use, or any land use with a wall lower than 42 inches.
2. If a fence or wall 42 inches or more in height is used along a collector street, a minimum of 40% must be open at intersecting streets, pedestrian entryways, parks or open space, any non-walled land use, or any land use with a wall lower than 42 inches.
3. If a fence is at least 80% transparent from 3 feet above grade upward, the entire length of the fence may be counted towards satisfying the open frontage requirement as long as the area on both sides of the fence is landscaped with trees and/or shrubs for a depth no less than 8 feet deep (total both sides).



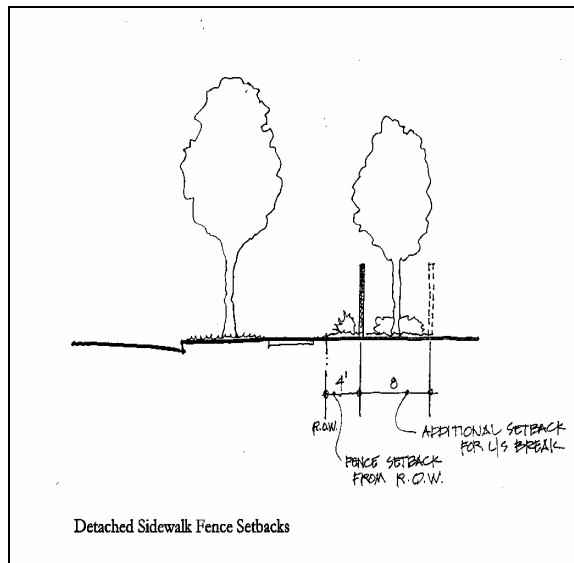
- D. Maximum Continuous Fence or Wall Length. The maximum continuous length of fence (regardless of any changes in the fence plane) shall be 1,500 feet along an arterial and 1,000 feet along a collector.
- E. Maximum Continuous Fence or Wall Plane. The maximum length of continuous, uninterrupted fence plane shall be 500 feet for an arterial and 320 feet for a collector. Landscape breaks in the fence shall count as breaks in the fence plane if they are:
1. At least 80 feet long (measured parallel to the street);
  2. At least 8 feet wide (measured from the running fence line and perpendicular to the street); and
  3. Landscaped with at least 3 trees and 2 rows of shrubs incorporating species with seasonal color and plant variety per 80 linear feet of break in the fence.
  4. The Community Development Director may approve alternative designs for breaks in a fence or wall plane upon a finding that such alternative accomplishes the purposes of these fence and wall standards equally or better than a design that complies with these standards.

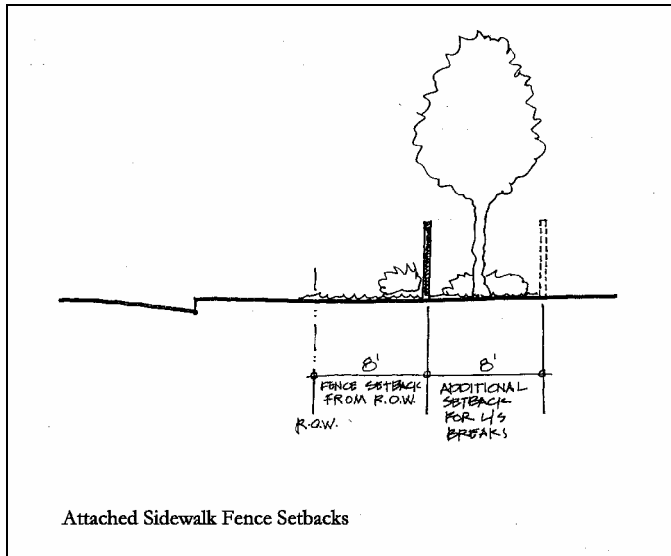


- F. Fence or Wall Setbacks.
1. Where a development site is higher in elevation than an adjacent arterial or collector, perimeter fences or walls should be located along the top of slopes, and should leave a landscaped slope area between the fence and the road. Perimeter fences or walls need

not be located at the tops of slopes where turn lanes would reduce or eliminate the area between the street and the fence near intersections. If perimeter fences or walls are located at the tops of slopes that are at least 36 inches above the adjacent curb, walls no higher than 42 inches may be provided between the street and the fence.

2. Where a development site is lower in elevation than an adjacent arterial or collector, perimeter fences or walls should be located as close to the property line as permitted by these regulations.
3. Along detached sidewalks, perimeter fences or walls shall be set back at least 4 feet from the back of the walk, and the area between the sidewalk and the fence shall be landscaped with a single row of shrubs with variety of species for seasonal color and plant variety.
4. Along attached walks, perimeter fences or walls shall be set back at least 8 feet from the back of the walk, and the area between the sidewalk and the fence shall be landscaped with either turf or a double row of shrubs and deciduous trees at an amount no greater than 40 feet on center.
5. The Community Development Director may approve alternative designs for fence or wall setbacks upon a finding that such alternative accomplishes the purposes of these fence and wall standards equally or better than a design that complies with these standards.





- G. Perimeter Fence and Wall Design. Perimeter fences and walls shall incorporate at least one of the predominant colors and one of the predominant materials used in the adjacent residential structures. All perimeter fencing shall be constructed of Western Red Cedar wood (if wood) or other approved material, the finished side facing the street, and shall include a 2 foot by 2 foot masonry fence posts located at property corners but no further than 100 feet on-center, and with sloped column caps to drain water to the sides of the posts.

#### 6.5.8 Fences and Walls

These standards supplement those in §6.5.7 (Arterial and Collector Frontage Screening Design Requirements). A fence or divisional wall is permitted in any district with the issuance of a fence permit pursuant to §18-41. All fences and walls shall comply with the following minimum requirements, unless otherwise specified during the development approval process.

- A. Maximum / Minimum Height. All fences and walls shall comply with the maximum heights shown in the following table, unless a different maximum height is explicitly permitted by this Code or approved through the PUD approval process. All heights are measured from finished grade. If a retaining wall is built and fill extends to the wall on one side, and a fence is to be constructed on top of the retaining wall, the elevation of the top of the wall shall be considered the finished grade. If a proposed fence location falls into more than one category in the following table, the lowest applicable height limit shall apply.

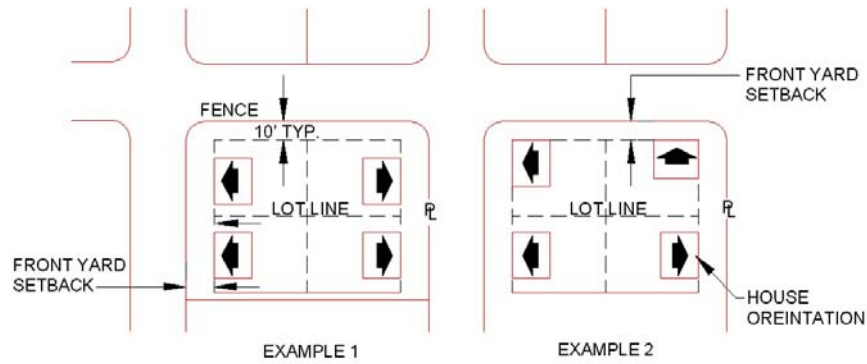
Location	Fence Maximum / Minimum Height (All Zoning Districts)
In front building setback	<ul style="list-style-type: none"> <li>• For fences on corner lots, at the time of application for a fence permit, the Applicant must designate front, side, and rear yards on the fence permit application.</li> <li>• Except as otherwise allowed in the CC District, a solid fence or divisional wall above 30 inches in height shall not be permitted in a required front yard.</li> <li>• In the CC District, front setback requirements for fences and walls above 30 inches in height shall only apply to CC Sub-Districts B, C, D, and E, and areas on the perimeter of Sub-District CC-A along W. 52nd Ave., W. 60th Ave., and Marshall/Lamar St.</li> <li>• The only exception to the foregoing shall be fences of woven wire type, or at least 65% open, which may be erected to 48 inches in height and may be closer than 25 feet to the property line, parallel or perpendicular to a public right-of-way.</li> </ul>
In the second front setback on corner lots	<ul style="list-style-type: none"> <li>• When the side of a property fronts a collector or arterial street, a solid fence or divisional wall up to a maximum 6 feet in height may be allowed along such side property line, subject to the setbacks below.</li> <li>• When the side of a property fronts on a public right-of-way, a fence may be erected a distance of 10 feet from the property line, providing the fence does not extend beyond the front of the adjacent house. If the fence would extend beyond the front of the adjacent house, it must be setback: <ul style="list-style-type: none"> <li>[1] 25 feet from the existing property line; or</li> <li>[2] To the existing setback of the structure if it is located closer than 25 feet to the property line.</li> </ul> </li> <li>• The only exception to the foregoing shall be fences of woven wire type, or at least 50% open, which may be erected to 48 inches in height and may be closer than 25 feet to the property line, parallel or perpendicular to a public right-of-way.</li> </ul>
In setbacks adjacent to open spaces	<ul style="list-style-type: none"> <li>• 48 inches unless the portion of the fence over 48 inches tall is at least 50% open</li> </ul>
In other setbacks	<ul style="list-style-type: none"> <li>• All Zoning Districts except the CC District: <ul style="list-style-type: none"> <li>On lots containing only residential uses: 6 feet Maximum</li> <li>On lots containing industrial use: 8 feet maximum</li> </ul> </li> <li>• CC District: Maximum fence height on all lots is 8 feet.</li> </ul>
Tennis court, baseball field, or similar outdoor recreation use	12 feet, provided that the fence is not located in any required setback

<b>Location</b>	<b>Fence Maximum / Minimum Height (All Zoning Districts)</b>
Outdoor storage, trash collection and compaction areas, and truck loading areas	As required by §6.5.11 (Outdoor Storage, Trash Collection/Compaction, and Truck Loading Areas)
Swimming pool and hot tub areas	Minimum 4-foot fence with a self-locking gate

- B. Fence and Wall Materials. All fences and walls shall be constructed only of materials permitted or required by the following table.

<b>Permitted/Prohibited/Recommended Materials</b>
<ul style="list-style-type: none"> <li>▪ Fences and walls shall be constructed of wood, brick, stone, stucco over concrete block, split-faced or fluted block, metal wire, wrought iron, vinyl or PVC (except for PVC pipe). Sheet plastic, sheet metal (including corrugated metal), and plywood fencing shall not be allowed</li> <li>▪ Barbed wire or electrified fences shall not be allowed except in the I-1 and I-2 districts or portions of the New Communities Subdistricts, Clear Creek Subdistricts, or PUDs occupied by industrial uses. Barbed wire fences are permitted in conjunction with agricultural uses in the A-1 zoning district.</li> </ul>

- C. Other Fence and Wall Requirements. No portion of any front yard setback may be fenced for use as an animal pen or dog run.
1. Fences located on lot lines that are adjacent to public rights-of-way, including trails, shall have the finished side facing the right-of-way.
  2. Nothing in this Code shall require the "back-to-back" placement of fences or fences and walls where an existing fence or wall on an adjoining property substantially meets the requirements of this section.
  3. Fences shall not be erected that block the intersection sight distance triangles.



### 6.5.9 Berms

Where constructed in combination with a landscaped buffer, berms shall comply with the following minimum requirements.

Measure	Requirement
Minimum height	2 feet
Minimum total width	19 feet
Minimum width of crest	3 feet
Maximum slope	4 horizontal feet for each vertical foot
Minimum planting	Required trees and shrubs shall be planted to maximize the intended screening; remainder of crest and side slopes shall be planted with ground cover and/or sod as specified in applicable landscape buffer type.

### 6.5.10 Retaining Walls

All retaining walls shall meet the following requirements.

- A. **Intent.** The purpose of these standards is to avoid large, flat, unbroken retaining wall planes by creating visual interest that is compatible with the architectural character of the surrounding area, create texture and relief in walls, encourage human scale detailing, and promote the use of materials that are durable and of high quality.
- B. **Maximum Height.** The maximum height of any retaining wall shall not exceed 4 feet, except as noted herein. A series of low retaining walls (instead of one taller retaining wall) shall be used wherever possible. Where multiple retaining walls are used, a minimum of 1 foot of horizontal spacing for every 1 foot of wall height of the tallest wall shall be provided. For example, a series of retaining walls involving a 3 foot wall and a 4 foot wall will require a 4 foot minimum horizontal spacing. The maximum height of any retaining wall that is attached to a primary structure and necessary to compensate for a change in grade shall not exceed 6 feet.

The Decision-Making Body may waive or modify the maximum height requirement if an alternative design will achieve the same or greater design as this Section requires.

- C. **Railing Required.** Where the construction of a retaining wall results in a downward vertical drop of more than 30 inches within 4 horizontal feet of a sidewalk, walkway, or other public circulation area, a railing at least 42"

high shall be placed along the top edge of the retaining wall to prevent pedestrians from falling over the edge of the retaining wall.

- D. Materials. Dry-stacked stone, pre-cast masonry block, or masonry block walls with stone, brick or stucco facing shall be used for retaining walls. Cast in place concrete may be used as a material based upon the incorporation of design features including, but not limited to, surface treatments, colors, lighting, and landscaping. Treated timber walls and railroad tie walls shall not be used for retaining walls except on single family residential lots.