Chapter 2

SITE PLANNING

2

This chapter describes design standards and procedures to guide the creation of a site plan, preliminary plat or other similar type of plan. It references architectural and streetscape guidelines necessary for achieving the preferred character for development in specific areas of the city. This chapter also provides specific guidance for preparing site plans and related designs within areas designated by the Environmentally Sensitive Lands Ordinance (ESLO).

2-1 GENERAL CONSIDERATIONS & REQUIREMENTS

2-2 ENVIRONMENTALLY SENSITIVE LANDS

2-3 FIRE

2-4 DISABILITY ACCESS

DEPARTMENT RESOURCE INFORMATION

Aviation/Airport	15000 N. Airport Dr.	480-312-2321
Advance Planning Services	7506 E. Indian School Rd.	480-312-7990
Capital Project Management	7447 E. Indian School Rd., Suite 205	480-312-7250
Current Planning	7447 E. Indian School Rd., Suite 105	480-312-7000
Customer Service	7447 E. Indian School Rd., Suite 100	480-312-7800
Downtown Group	4248 N. Craftsman Ct.	480-312-7750
Facilities Management	9191 E. San Salvador Dr.	480-312-5999
Fire & Life Safety/ Inspections	8401 E. Indian School Rd.	480-312-1855
Fire Plan Review	7447 E. Indian School Rd., Suite 125	480-312-7080
Inspections & Land Survey	9191 N. San Salvador Dr.	480-312-5750
Parks Department	7340 Scottsdale Mall	480-312-2915
One Stop Shop/Permit Services	7447 E. Indian School Rd., Suite 100	480-312-2500
Plan Review	7447 E. Indian School Rd., Suite 125	480-312-7080
Records Division	7447 E. Indian School Rd., Suite 100	480-312-2356
Solid Wastewater Management	9191 N. San Salvador Dr.	480-312-5600
Stormwater Management	7447 E. Indian School Rd., Suite 205	480-312-7250
Street Operations	9191 N. San Salvador Dr.	480-312-5626
Transportation	7447 E. Indian School Rd., Suite 205	480-312-7696
Water Resources	9388 E. San Salvador Dr.	480-312-5685
City of Scottsdale	www.scottsdaleaz.gov	

Section 2-1

GENERAL CONSIDERATIONS & REQUIREMENTS

2-1

This section describes master environmental design concept plans and master design concepts plans. It provides general guidance for most projects and conditions in the city, including design guidelines for specific areas and uses, site context considerations, on-site circulation and parking, emergency access and fire lane dimensions, drainage facilities, landscape, subdivision and neighborhood design, refuse collection, streetlights and outdoor lighting. These guidelines supplement ordinance provisions and provide basic approaches and preferred standards.

DEPARTMENT RESOURCE INFORMATION

Aviation/Airport	15000 N. Airport Dr.	480-312-2321
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GENERAL CONSIDERATIONS & REQUIREMENTS

MASTER ENVIRONMENTAL DESIGN CONCEPTS PLANS

2-1.100

Most master planned developments since the early 1980s have been required to prepare master environmental design concepts plans (often referred to as MEDCPs). These cover a wide range of design guidelines and plans, from trails and paths to landscaping architectural themes and common amenities and facilities. All development applicants should determine if a MEDCP applies to their site, follow master plan guidelines, and guidelines in this document.

The Planning and Development Services General Manager's designee for the area of the city, and/or rezoning stipulations may also require a MEDCP to be completed prior to the submittal of the development application. Typically, the MEDCP requires the approval of the Development Review Board. The requirements for MEDCP are project specific and the Planning and Development Services General Manager's designee will determine the plans and design concepts that need to be included in the MEDCP Application. For a general overview of the MEDCP requirements, see www.ScottsdaleAZ.gov/bldgresources/forms.

MASTER DESIGN CONCEPT PLANS

2-1.200

The Master Design Concept Plan (often referred to as MDCP) came about in the early 2000s with the advent of large scale redevelopment projects outside of the Environmental Sensitive Lands area of the city. These redevelopment plans have significantly more detail than the traditional master concept plans. The elements of the plans typically include landscaping, architectural themes, pedestrian plazas, pedestrian thoroughfares and relationships to the buildings, exterior lighting, pavement surfaces, trails and paths, and common amenities and facilities.

The Planning and Development Services General Manager's designee for the area of the city, and/or rezoning stipulations may also require a MDCP be completed prior to the submittal of the development application. Typically, the MDCP requires the approval of the Development Review Board. The requirements for MDCP are project specific and the Planning and Development Services General Manager's designee will determine the plans and design concepts that need to be included in the MDCP Application. For a general over view of the MDCP requirements, see www.ScottsdaleAZ.gov/bldgresources/forms.

2-1.300 DESIGN GUIDELINES FOR ALL DEVELOPMENT SUBJECT TO THE DEVELOPMENT REVIEW BOARD'S REVIEW PROCESS

Scottsdale has developed specific design standards for all development that is subject to the Development Review Board's review process. Unless specifically modified by the Development Review Board or City Council through stipulation(s), all development shall incorporate the following:

2-1.301 GENERAL DESIGN STANDARDS

1. All exterior mechanical, utility, and communications equipment shall be screened by the parapet or wall that matches the architectural characteristics, color, and finish of the building. Walls or parapet height for roof-mounted units shall be equal to, or exceed the height of the tallest unit. Wall heights for ground-mounted units shall be a minimum of 1-foot higher than the tallest unit.
2. All exterior conduit and raceways shall be painted to match the building.
3. No exterior roof ladders shall be allowed where they are visible to the public or from an off-site location.
4. Roof drainage systems shall be interior to the building, except that overflow scuppers are permitted. If overflow scuppers are provided, they shall be integrated with the architectural design. Areas that are rooftop drainage shall be design and constructed to minimize erosion, staining of nearby building walls and directs water away from the building foundations.
5. Perimeter and site walls shall be constructed with 6 or 8 inch wide concrete masonry blocks, 8 inches wide brick, stone, concrete, or a similar solid and durable material to match the building. Stucco and paint the surface of concrete block walls to match the on-site buildings unless they are split-faced, grid or similar decorative types of block. Grade breaks shall be located at the top of the wall at piers or corners wherever possible. Include varied setbacks, alignments, and/or heights and/or piers or buttresses for walls over 200 feet long the horizontal and vertical alignment of the wall for visual interest.
6. Chain link fencing for recreational courts (i.e. tennis, basketball, volleyball, etc.) shall be vinyl coated. Vinyl coating of a chain link shall be black, dark brown, or dark green in the Environmentally Sensitive Land areas of the city.
7. 'Dooley' concrete block wall/fence materials shall not be allowed.
8. Barbed wire shall not be visible from adjacent properties.
9. Flagpoles shall be tapered, conical, one-piece poles. Exposed aluminum and/or galvanized finished poles shall be acid washed prior to installation, in order to provide a patina finish.
10. Exposed large rock and boulder faces that are scarred during construction shall be treated with desert varnish to the satisfaction of the Planning and Development Services Department's General Manager or designee.
11. Bicycle parking spaces and rack design shall be in conformance with City of Scottsdale Standard Detail No. 2285, unless otherwise approved in writing by the City of Scottsdale's Transportation Department's General Manager or designee.
12. Patio umbrellas shall be solid colors and shall not have any advertising in the form of signage or logos.
13. Outdoor, site and building lighting shall comply with the sections under Section 2-1.1000, Outdoor Lighting.

SERVICE ENTRANCE SECTIONS 2-1.302

Service Entrance Sections (SES) shall be incorporated into the design of the building, either in a separate utility room, or the face of the SES shall be flush with the building face. An SES that is incorporated into the building, with the face of the SES flush with the building, shall be not be located on the side of a building that is adjacent to a public right-of-way, roadway easement, or private streets.

GRADING AND DRAINAGE 2-1.303

1. Land adjacent to walkways or curbs shall be graded so that it falls away from the walk or curb at a slope of at least eight percent (8%) but not more than twenty-five (25%) for a distance of at least ten (10) feet.
2. The maximum ratio between the width-to-depth of a retention basin shall be ten-to-one (10:1), unless otherwise approved by the Planning and Development Services General Manager's designee.
3. The maximum slope for a landscaped bank on the edge of a detention basin shall be four-to-one (4:1). Walled banks may be permitted subject to the separate wall design approved by the Development Review Board, and meeting the structural and safety standards of the Building Code.
4. Retention area located within the front open space (as defined by the Zoning Ordinance) shall not exceed 50% of the total front open space area.
5. Provide positive drainage away from curb and sidewalk.

DESIGN GUIDELINES FOR SPECIFIC AREAS 2-1.400

For Environmentally Sensitive Lands design guidelines, see Section 2-2.000.

CORRIDORS & STREETSCAPES 2-1.401

Scottsdale has developed specific design guidelines for the dimensions, use and design elements of a number of natural open space and streetscape corridors. See www.ScottsdaleAZ.gov/planning/corridorplans. These guidelines should be addressed in addition to the specific criteria identified below.

A. Open Space Corridors

There are four main categories of open space corridors for which guidelines have been developed: scenic corridors, buffered setbacks, vista corridors, and desert scenic roadway setbacks. The locations are identified in the General Plan and/or have been required as a part of zoning stipulations.

1. **Scenic Corridors:** These are corridors along selected major streets where there is a desire by the community to retain views of nearby terrain features and retain the character of the natural desert setting.
   a. Carefree Highway - Scottsdale Road to the city's western boundary – 2 miles.
   b. Cave Creek Road - Pima Road to the city's northeast boundary – 3.5 miles.
   c. Dynamite Boulevard - 56th Street to the city's eastern boundary – 10.5 miles.
   d. Pima Road - North of the Loop 101 to Cave Creek Road – 11 miles.
   e. Scottsdale Road - North from Frank Lloyd Wright to Carefree Highway – 11 miles.
   f. Shea Boulevard - Pima Freeway to the city's eastern boundary – 9 miles.

2. **Buffered Setbacks:** These are corridors along significant streets where there is intent by the community to achieve a boulevard type of effect, recognizing the importance of the roadway in the local setting.
3. **Vista Corridors:** These are corridors along major washes and channels that are intended to provide local and community vistas of nearby terrain and the desert setting as well as provide access corridors to neighborhoods, parks and schools.
4. **Desert Scenic Roadways Setbacks:** All major mile and half-mile streets shall provide a 50 foot wide open space corridor along the edge of the street right-of-way.
5. Positive drainage shall be provided away from all walks.

B. Streetscapes

Specific design guidelines have been developed for a number of major streets. These generally focus on the design of landscaping and street furniture along the edges and medians of these streets. See www.ScottsdaleAZ.gov/planning/corridorplans for design guidelines for:

- Frank Lloyd Wright Boulevard
- McDowell Road
- Via Linda
- Shea Boulevard
- Scottsdale Road
- Cactus Corridor

2-1.402 DOWNTOWN DESIGN GUIDELINES

Specific guidelines for buildings and streetscapes have been developed for the downtown area. The Guidelines list recommendations for site development, building form, architectural, and landscape character to assure that new development contributes to Downtown urban design goals and is compatible with the character of existing Downtown districts.

The Downtown Urban Design and Architetural Guidelines apply to that area designated by the Downtown Plan and Zoning Ordinance. Generally, the area bounded by Chaparral Road to the north, Earl Drive to the south, Miller Road to the east, and 68th Street to the west. Any development in this area should use these guidelines in addition to the other guidelines contained herein. See Appendix 8-1A for recommended plants downtown or go to www.ScottsdaleAZ.gov/downtown.

2-1.403 AIRPORT & AIRPARK DEVELOPMENT

Development within 20,000 feet from the airport requires airport staff review and comment. Staff reviews proposed development projects for any potential impacts resulting from object height, land use compatibility, aircraft noise and overflight disclosure, compliance with airport and airpark rules and regulations, and taxilane access restrictions.

A Scottsdale Airport-Vicinity Development Checklist will be provided during the development review pre-application process, and must be completed and submitted with the proposed project design submittal. See www.ScottsdaleAZ.gov/airport/regulatorydocs.

Scottsdale Airport Traffic Pattern Airspace Map and sample noise disclosure statement depicts where aircraft operations occur into and out of Scottsdale Airport, and describes the normal aircraft activity associated with Scottsdale Airport. See www.ScottsdaleAZ.gov/Airport and www.ScottsdaleAZ.gov/Airport/Part150/.

2-1.404 NORTH AREA CHARACTER ELEMENTS

The following are standards and suggestions for the materials, colors and design of common infrastructure improvements that are to be constructed in the North Area (primarily north of the Bell Road alignment). The overall theme and intent is to establish an infrastructure and development setting that is compatible with the natural desert character of this area.

A. Concrete Applications

1. **Sidewalks, curbs and gutters, etc.:** concrete used in these applications shall be integrally colored. The preferred color mix shall be San Diego Buff (Davis Color # 5237 @ 2 lbs per 94# sack of cement). Pima Beige may also be used. Other colors are subject to the approval of the Planning and Development Services General Manager's designee.
2. **Headwalls, shot-crete, and other such structural or drainage applications:** concrete for these applications shall be integrally colored (Adobe – Davis Color # 61078 @ 4 lbs per 94# sack of concrete or similar color mix subject to the approval of the Planning and Development Services General Manager's designee) and/or exposed aggregate.
3. **Private driveways, walkways on retail and office sites, similar applications:** concrete used on private properties should be colored and/or treated concrete similar to that described above. Stamped or colored asphalt, or colored concrete may be used for such applications and if used should be dark earthtones. Where possible, do not use plain concrete where it will be exposed.
4. **Exceptions to these standards:** are subject to the approval of the Planning and Development Services General Manager's designee where there is a preponderance of existing sidewalks, curbs and gutters along a street segment or the proposed improvement is part of a partially built multi-phased project.

B. Other Structural Surfaces

1. **Drainage structures, retaining walls, etc.:** Other materials such as native stone, split-faced and colored concrete block, rammed earth and stucco colored with an earth-tone that has a maximum LRV (Light Reflective Value) of 35 may also be used for such surfaces.
2. **Metal clad or structural metal surfaces:** Self-weathering steel (such as Core-ten), galvanized steel treated with an oxidizing chemical (such as Desert Varnish), or similar materials may be used for such surfaces.

C. Streetlights, Guardrails, Poles and Posts, etc.

1. **Streetlights and signal poles:** all such installations shall be painted with Western Reserve 8716N by Frazee Enamel (or approved equal) or made of bronze anodized aluminum.
2. **Guardrails, utility cabinets and various poles, posts and screening treatments:** Such installations shall be painted with Western Reserve (as described above), or made of bronze anodized aluminum, self-weathered steel, rusted steel, fully weathered/oxidized copper. Traffic signal control boxes are an exception to this standard. Signal control boxes may be screened by a metal enclosure or shade device subject to the approval to the Transportation General Manager's designee.
3. **Wood:** In general, exposed wood should not be used in such applications. If it is to used and is approved by the city, it shall be large dimension (such as 6 inches or larger in diameter) and shall be stained a dark color.

2-1.500 DESIGN GUIDELINES FOR SPECIFIC USES

Scottsdale has developed architectural and site planning guidelines for specific types of land uses, including: offices, gas stations and convenience stores, restaurants, parking structures and commercial uses. These contain details and standards that apply to the specific use that are in addition to the other standards contained in the Zoning Ordinance, area plans and this manual, see www.ScottsdaleAZ.gov/design,asp.

1. **Design Guidelines for Office Development:** This set of guidelines includes site planning and design, architecture, landscape design, lighting and identification/signage with a focus on office industrial, office warehouse, office aircraft hanger and general office projects. They address the context of a site, responding to the natural setting and climate of the desert Southwest and achieving quality design**.**
2. **Design Guidelines for Gas Station and Convenience Store Development:** This set of guidelines includes site design, architecture, pump islands, landscape, lighting and signage/corporate identification. Special focus is made on canopies over pump islands and lighting approaches for such high activity areas.
3. **Design Guidelines for Restaurant Development:** This set of guidelines includes site design, architecture, landscape design, lighting and signage/corporate identification. Special emphasis is placed on relating to the local context, outdoor dining areas and sensitivity to residential neighborhoods.
4. **Design Guidelines for Commercial Development:** These guidelines include site design, architecture, landscaping, lighting and signage/corporate identification. Emphasis is placed on relating to the local context, parking areas, pedestrian access and design appropriate to the setting and climate of the desert Southwest.

See the Sensitive Design Principles as a guide for the preparation of development proposals, available online at www.ScottsdaleAZ.gov/planning/general/sensitivedesign.

2-1.600 SITE CONTEXT

The following guidelines focus on the relationship of a proposed site plan to the natural terrain of the property as well as the relationships this proposal will have with existing or planned uses adjacent to it. The goals are to fit development into the natural site with minimal intrusion and to be sensitive to adjacent uses.

2-1.601 TERRAIN

1. Site features such as washes or native desert vegetation should be kept in as natural state as possible.
2. Washes should be used as amenities for the site; common recreational, patio, outdoor dining and other such facilities should be oriented toward such natural features.
3. Major desert vegetation specimens should be kept in place wherever they are located particularly if they are located in required setbacks, parking landscape islands or other such open space areas.
4. On sites where there is significant change in the grade levels from the site to adjacent properties, the site design should accommodate the grading transition through design techniques such as landscaped terraces, landscaped slopes of 4:1 or gentler or some similar gradual technique.
5. Retaining walls of over 2 feet in height shall not be placed at the property line.

6. When the site has a non-residential use and the adjacent site is a residential use, required screening walls should either be placed along the edge of the parking/driveway areas if the developing site is higher than the adjacent site or at the property line if the site is lower.

BUFFERING FOR ADJACENT LAND USES 2-1.602

1. Site plans for non-residential uses that are next to residential uses or for multi-family uses next to single-family uses should incorporate the following buffering techniques:
   a. Locate refuse containers either internally to the site or at least oriented toward the interior of the site.
   b. Locate loading areas either away from the perimeter of the site or screened from the perimeter by a solid wall tall enough to shield the unloading operations and vehicles from off-site views.
   c. Use landscaped open spaces to screen on-site buildings and activities.
   d. Locate out-door dining areas and patios where the on-site buildings screen them from views off of the adjacent properties or where they are sufficiently screened by walls, landscaping and significant distance so that they have no discernible impact on adjacent properties.
2. Install landscaping that is used for buffering between different land uses that is substantial enough in size and density to achieve the desired buffering effect as soon as possible. This landscaping should:
   a. Use 2 inch minimum caliper or larger tree materials;
   b. Space trees at a rate of 1 every 20 to 30 feet apart (based upon the type of canopy the tree creates) if the landscaped areas is less than 10 feet wide or 1 for every 300 to 400 square feet for larger landscaped areas;
   c. Not use mounding unless the mound is at least 40 feet away from the perimeter of the property; and
   d. Not include landscape lighting that illuminates the tree canopies

ON-SITE CIRCULATION & PARKING AREA DESIGN 2-1.700

The following guidelines focus on general and specific techniques to assure safe access, emergency access, and community benefits.

MAJOR DRIVEWAYS 2-1.701

Major driveways feed traffic into a parking lot with over 50 spaces from the street and/or provide the driveway access across the front of a retail center. Such driveways should:

1. Be a minimum width of 30 feet from face-of-curb to face-of-curb,
2. Prohibit designated customer loading areas for the landscaping, construction materials, and appliances, etc. departments of retail stores and loading areas used for general business activity,
3. Provide adequate stacking depths where they access public streets and do not allow direct parking aisle access in close proximity to the street intersection, and
4. Provide adequate turn-around space for fire equipment vehicles if there is a dead-end driveway which is code required as an emergency access way that is 300 feet or longer for fully sprinklered structures, 150 feet or longer for non-sprinklered structures.
5. Driveways must meet transportation requirements (see Section 5-6) and have a minimum 4 foot wide level landing behind the driveway to allow for pedestrian mobility.

2-1.702 EMERGENCY ACCESS AND FIRE LANES

For specific Fire Department requirements, including a Fire Plan Review checklist, see www.ScottsdaleAZ.gov/bldgresources/forms. After reviewing the plan for the proposed development, the Fire Department will determine the code required fire apparatus access. See the International Fire Code Chapter 5 and Appendix D for guidance. For complete Fire Code related issues, see Chapter 11.

A. Emergency Access Provisions

Fire apparatus access may be provided from public access ways, approved private streets, residential driveways and/or on-site fire lanes. For additional requirements for public access ways, private streets and residential driveways see Section 5-3.000.

B. Fire Lanes

On-site access (Fire Lanes) for fire fighting and emergency vehicle use may be required in addition to the planned public access ways so an emergency vehicle can reach the interior of the development when normal access is blocked. For example, an additional access way may be required due to the number of structures, the square footage of structures, topography (grade), and/or washes and flood plains. See the International Fire Code Appendix D for guidance. Emergency access ways shall be secured by an easement. If any emergency access route is intended to be closed and locked, any lock placed on an emergency access gate must be approved by the Fire Department. See COS Standard Detail 2364 for construction and identification of emergency access ways. See Figure 2.1-4 for minimum requirements for gated entrances for residential development.

The following criteria for the lanes shall apply:

1. Fire lane signage must comply with COS Standard Details, Series 2300.
2. The minimum width of a two-way fire lane is 24 feet. One-way lanes, such as divided entrances and drive thru by-pass lanes shall be 20; wide. For project specific information, contact Fire Plan Review. 480-312-7080. See International Fire Code Sections 503.2.1 and 503.2.2 for other lane width requirements.
3. The fire lane surface shall be suitable for all-weather use, with a minimum loading design of 83,000 lb. gross vehicle weight. Where not co-located with vehicular service or access lanes, surfaces other than asphalt such as concrete, paver stones, “grasscrete” and stabilized and compacted crushed granite should be considered.
4. The minimum vertical clearance for the passage of fire department apparatus is 13 feet 6 inches.
5. The minimum outside edge radius of the lane on a turn is 49 feet, with 55 feet outside radius required for aerial bucket clearance for commercial and multi-family uses. ASSHTO engineered elliptical radius design may be approved in certain circumstances where there are no barriers over 6 feet in height on the outer aerial bucket radius R3- for project specific information, contact Fire Plan Review 480-312-7080. 40.5 feet is the minimum for other residential uses.See Figure 2.1-1 below.

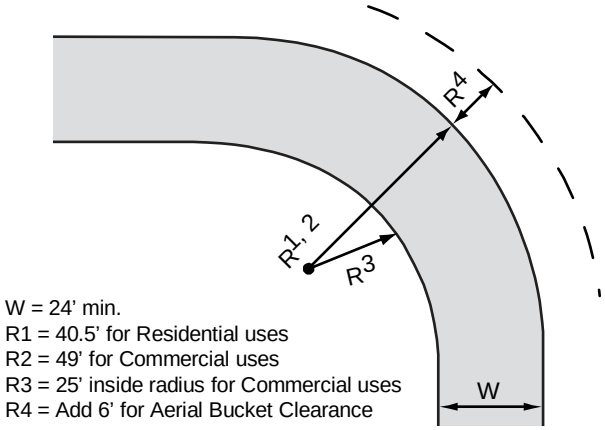


FIGURE 2.1-1 FIRE LANE DIMENSIONS

6. Fire lanes must be posted in accordance with the COS Standard Detail 2365.
7. See Figure 2.1-2 for on-site fire access turnarounds for commercial and residential developments.
8. Provide a turn-around for emergency vehicles at the end of a dead-end parking aisle designated for emergency access (fire lane) if it exceeds 300 feet in length for fire sprinklered structures, 150 feet in length for non-sprinklered structures, as shown by the T-Types in Figure 2.1-2 below.

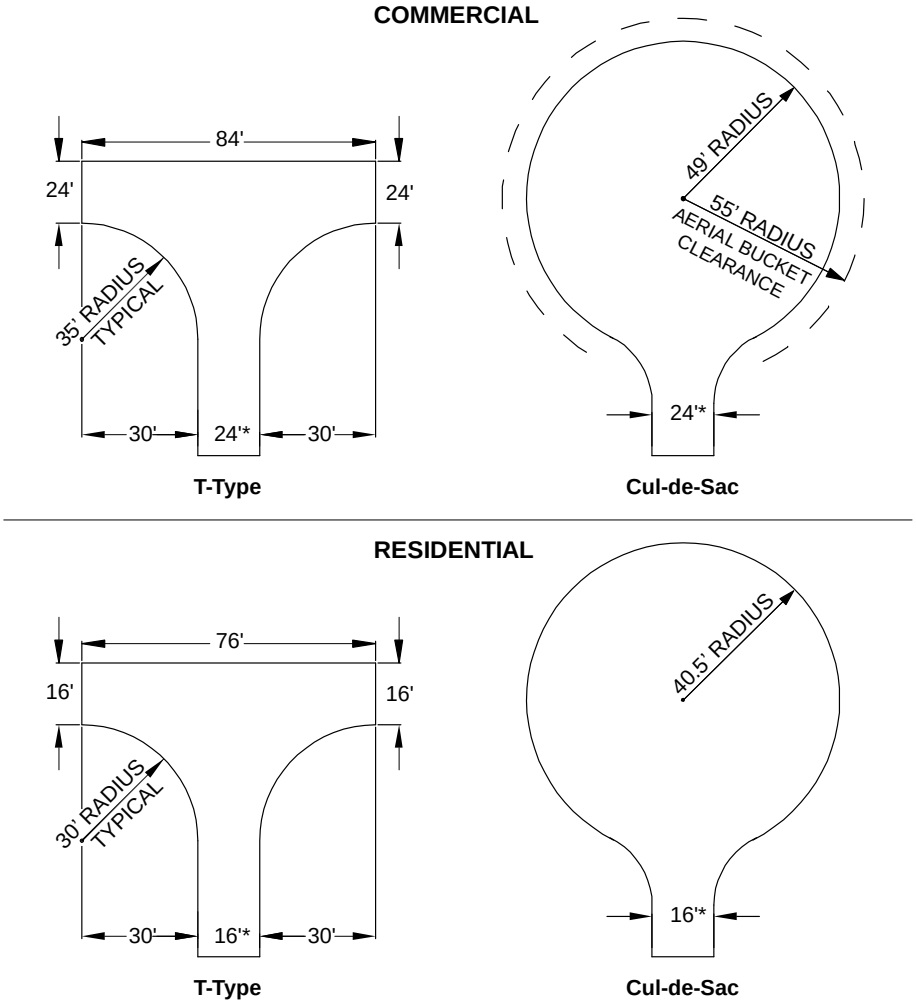


FIGURE 2.1-2 FIRE LANE FIRE ACCESS TURNAROUNDS

2-1.703 DRIVE-THROUGH FACILITIES

Where allowed, locate and design drive-through facilities according to the following criteria:

1. Unless there is no reasonable alternative, locate drive-through facilities on rear of a building facing away from the nearby street frontage(s) or on the sides of the building. Drive-through facilities should not be located near any residential uses. Vehicular storage areas for drive-through facilities placed on the street side of a building or any other location which is directly visible from adjacent properties should be screened by walls, mounding and or dense landscaping at least 4 feet in height.
2. Provide stacking distance for at least 6 vehicles (minimum of 140 feet) for each lane leading into a drive-through facility.
3. Outdoor speakers at drive-through facilities should not be audible across the property line of the building site. Outdoor speakers should not be placed within 300 feet of a property used for residential purposes.
4. Vertical clearance must be a minimum of 98 inches for drive-through facilities. Drive-through facilities that include a passenger loading zone must have a vertical clearance of 114 inches.

2-1.704 REFUSE COLLECTION

The Solid Waste Management Director or their designee must approve of all solid waste collection methods for both commercial and residential services.

A. Commercial Container Enclosure Location and Design

Locate and design refuse collection facilities based on the following criteria:

1. Do not place trash enclosures between the on-site buildings and adjacent lower density residential uses unless there is no reasonable alternative. If this is done, orient the enclosure toward the interior of the property.
2. Place trash compactors, if located within 1,300 feet of a residential use, within a fully enclosed area with walls that are at least 2 feet higher than the compactor equipment.
3. Do not place trash enclosures next to drainage ways or basins, wherever possible.
4. Do not place refuse enclosures at the end of a dead-end parking aisle.
5. Locate and position enclosures to facilitate collection without “backtracking.”
6. Locate enclosures to be easily accessible for collection by a simple route.
7. Locate enclosures such that collection vehicles must not back up more than 35 feet.
8. Trash enclosures must comply with applicable COS Standard Details #2146-1, 2146-2, 2147-1 and 2147-2. No underground “vault-type” containers will be approved.
9. Gates across the front of a trash enclosure are generally discouraged. If desired, a trash enclosure with gates shall be designed to accommodate full ADA access.
10. See Section 2-1.301 for General Design Standards.
11. All restaurants and bars must provide enclosures with grease containment areas as required below. The grease containment area must be physically separated from the refuse container portion of the enclosure.

B. Required Number of Commercial Refuse Enclosures

Commercial facilities must provide the following number and type of refuse enclosures:

Use	Required Number of Refuse Enclosures
Commercial Building Space (including galleries, retail, and office uses)	1 enclosure for each 20,000 square feet of building space or portion thereof per COS Standard Details #2146-1 or 2147-1
Apartments and Condominiums	1 enclosure for every 20 units or portion thereof per COS Standard Details #2146-1 or 2147-1
Restaurants and/or Bars	1 enclosure with Grease Containment Area per COS Standard Details #2146-2 or 2147-2

C. Commercial Enclosure Positioning

1. Provide adequate truck turning/backing movements for a design vehicle of turning radius R (minimum) = 45 feet, vehicle length of L = 40 feet.
2. Enclosures serviced on one side of a drive must be positioned at a 30-degree angle to the centerline of the drive.
3. Maximum distance from service exit to trash enclosure is 100 feet.
4. An area 14 feet x 30 feet long shall be provided for approach to refuse enclosures with slope constant with enclosure floor to facilitate container pick-up. The length of the approach slab is subject to modification based on enclosure location, drainage, and positioning concerns.

D. Shared Refuse Agreements

1. With the exception of Bars and Restaurants, shared refuse agreements will be considered as refuse solutions in the Downtown area.
2. All shared refuse agreements are subject to review and approval by both Planning and Development Services and Solid Waste Management.
3. A City of Scottsdale refuse enclosure must exist or be constructed as part of the shared refuse agreement and comply with applicable COS Standard Details #2146-1, 2146-2, 2147-1 and 2147-2.

E. Residential Refuse and Recycling

1. The developer or subdivider pays for residential refuse and recycling containers which become the property of the city. The city delivers containers at the initial occupant's request.
2. Dedicated storage areas for refuse and recycling containers must be provided. Containers must be screened from view.
3. Refuse and recycling containers must not be stored within garages or other enclosed liveable areas.
4. Refuse and recycling containers must be placed at curb for collection, and not in alleys, unless specifically approved in a written agreement.
5. Collection of refuse and recycling cannot be done on private driveways, hammerhead streets, or dead end streets. Containers must be brought out to an accessible location for service.
6. Residential subdivisions and developments with gated entrances must provide access at all times to Solid Waste Management for refuse and recycling collection services.
7. Residential collection is the preferred collection method for all dwelling units.

2-1.705 MULTI-FAMILY GARAGES

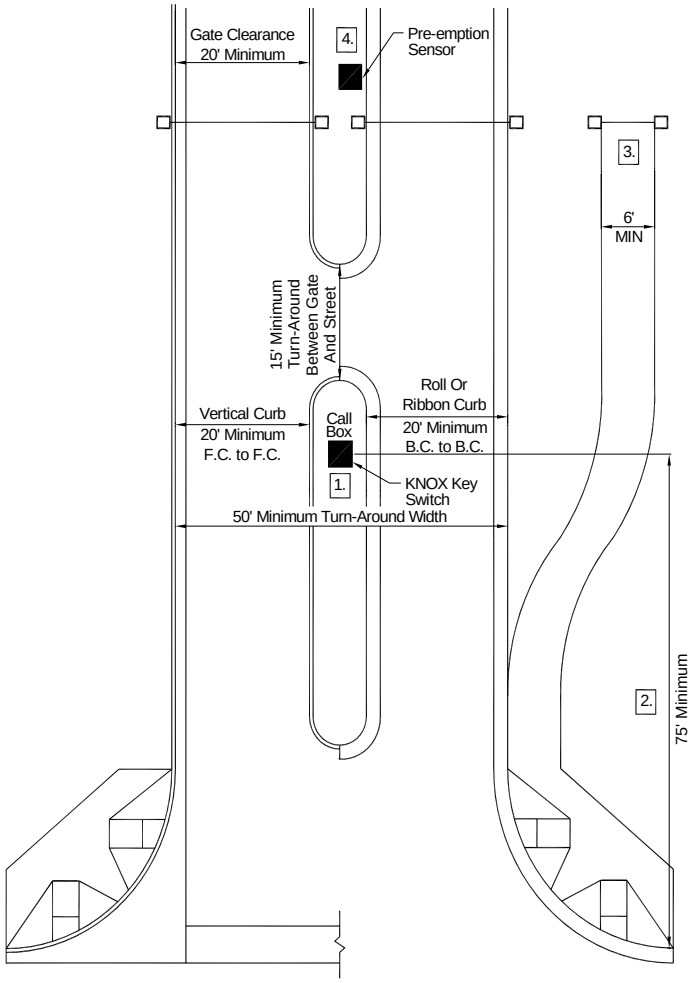
In R-4, R-4R, R-3, R-5 and S-R zoning districts where multi-family uses propose to have garages, the face of the garage door shall be set back from the curb, sidewalk or edge of the through travel lane either 3 to 6 feet, or at least 18 feet, while 20 feet is preferable.

Multi-family garages designated to be adaptable for accessible parking shall be designed to accomodate the width and length of the accessible stall plus a 5 foot wide access aisle. The width of the accessible parking and aisle is determined by the zoning ordinance. The accessible aisle shall be unobstructed for its entire width and length. The accessible route should align with the access aisle to the unit.

Guest parking spaces shall be provided and shall be clearly shown on the site plan as well as clearly marked on the site.

2-1.706 GATED ENTRANCES

All gated entrances for residential subdivisions and residential development must conform to Figure 2.1-3 below. Additional queuing distance will be required for gated entrances at signalized intersections.



NOTES:

1. A KNOX key switch and pre-emption sensor shall be required on all electric entry control gates. A KNOX key switch shall be installed in a location on the gate control panel (Call Box) that is readily visible and accessible.
2. 75' minimum from back of curb on adjacent street to call box or gate (if remote control used)
3. A separate pedestrian and bicycle access shall be provided around the gated vehicular entrance. This may be gated.
4. The pre-emption sensor shall be at or behind the gate.

FIGURE 2.1-3 GATED ENTRANCES FOR RESIDENTIAL DEVELOPMENT

UTILITY CABINETS 2-1.707

Utility cabinets shall not be located within sight triangles associated with driveways and road intersections, obstruct a public access easement, path easement and/or a trail easement, or in a sidewalk. Along roads that are designated as scenic corridors or special buffers, utility cabinets should be placed along a side street instead of along the street with the designated special buffer and open space corridor. The utility cabinet doors (when open) shall not obstruct a public access easement, trail easement, or a sidewalk.

Wherever possible, utility cabinets should be screened by architectural metal fencing, walls that match nearby perimeter or screen walls, berming and/or dense landscaping. Utility cabinets specific for a development should be located on site behind the building and not visible from the public right-of-way, public access easement, roadway easement, or private street.

In addition to the above, in the downtown, wherever possible, utility cabinets shall be placed underground or integrated into the site and the architectural design of the development and screened. Screening of the utility cabinets shall be an intricate part of the building architecture, site design, and/or dense landscaping. In the downtown, the utility cabinets shall not be located within sight triangles associated with driveways and road intersections, obstruct canal (SPR) right-of-way, obstruct a public access easement and/or a trail easement, or in a sidewalk.

PEDESTRIAN AND BICYCLE FACILITIES 2-1.708

A. Pedestrian Facilities

1. Walkways that connect main building entrances to the sidewalks on adjacent streets should have a minimum clear width of six (6) feet - excluding any parking overhangs or other obstructions. The walkway should be continuous between the street and building, and clearly recognizable by both pedestrians and drivers. Wider widths may be required by staff in locations where significant pedestrian traffic is anticipated and where wider sidewalk exists or is planned along the street.

   In cases where a sidewalk width of six feet cannot be provided due to existing physical barriers or other constraints, a five (5) foot wide clear and continuous sidewalk width may be allowed if approved by the Planning and Development Services General Manager or designee.
2. Provide shade wherever possible for on-site walkways either through the use of tree canopies or structural canopies. Tree trunks and canopy supports should not encroach into the minimum six foot sidewalk width.
3. The minimum unobstructed width of walkways across the front of major retail centers or mixed-use buildings, especially in the Downtown area, should be 8 feet. In locations where street furniture, canopy supports, or other physical barriers encroach into the adjacent pedestrian facility, twelve (12) feet of walkway should be provided with a clear, continuous width of eight (8) feet provided across the frontage.

   In cases where a sidewalk width of eight (8) feet cannot be provided along these frontages due to existing physical barriers or other constraints, a six (6) foot wide clear and continuous sidewalk width may be allowed if approved by the Planning and Development Services General Manager or designee.

B. Bicycle Facilities

1. Place bicycle parking facilities for public guests of a building near the main entrance to the building in a visible location. Do not place these in a manner that interferes with pedestrian access into the building.

2. Place bicycle parking facilities for employees near employee entrances. They should be well lit and should not interfere with access to the employee entrance. Provide shade wherever possible.

2-1.709 PARKING AREAS

A. Accessible (Handicapped) Parking Spaces

Accessible parking spaces shall be designed in accordance with City Ordinance Sec. 9.105. See Section 2-4.000 Disability Access for detailed guidance.

B. Parking Area Landscaping

Incorporate elements in the design of parking areas that give the parking facility clarity of form and provide amenity to its users. Among the elements that should be included are:

1. Planters within a parking area that are at least 7 feet across as measured from the back of curbing,
2. Trees that are heat tolerant, have minimal dropping of pods and sap and have canopies that can have a canopy bottom at least 10 feet above the ground,

C. Dead-End Parking Aisles

See Figure 2.1-4 below and the following requirements for dead-end parking aisles.

1. Provide a 5-foot deep back-up area at the end of any dead-end parking aisles and a 5-foot curb radii leading into this pavement extension.
2. Provide 10 feet wide parking spaces at the end of a dead-end parking aisle.
3. The maximum dead-end parking aisle for designated emergency access length is 300 feet for fire sprinklered structures, 150 feet for non-sprinklered structures, unless a turn-around is provided for emergency access.
4. Refuse enclosures are not permitted on a dead-end aisle.

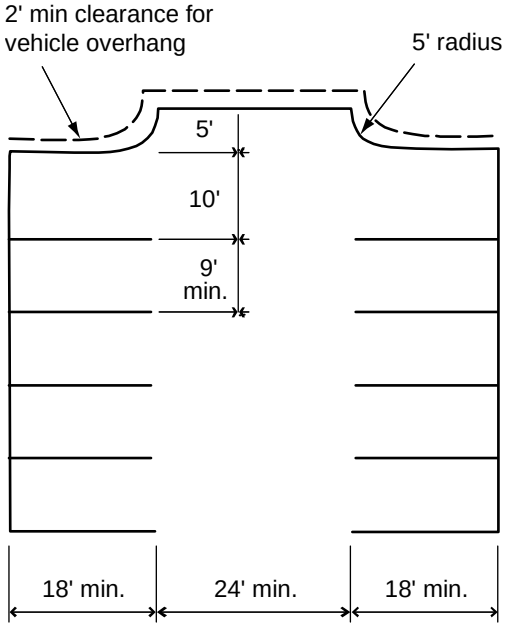


FIGURE 2.1-4 DEAD-END PARKING AISLE DETAIL

D. Parking Surfacing

All parking areas for commercial, office, industrial and multi-family uses shall be surfaced with asphaltic pavement, concrete of a similar material as approved by the Development Review Board. For uses such as churches, event centers, parks, trailheads, and other recreational uses the drive aisles shall be improved with a stable dust-free material. The parking stalls may be improved with a soil mix treated with a dust palliative. In such installations all parking areas

shall be contained by concrete curbing. Single family residential and equestrian facilities shall use dust palliatives or other surfacing materials that minimize the generation of fine dust particulates.

E. Dust Control Measures on Unpaved Surfaces

The following section outlines dust control regulations present in the Maricopa County Air Quality Department Rule 310.01 and Chapters 18, 19 and Appendix B Basic Zoning Ordinance Article VII Section 7-900 of the Scottsdale Revised Code.

This information is intended to assist owners/operators responsible for controlling dust on disturbed and/or unpaved surfaces. Note that other requirements apply to permitted construction or demolition activity. (Dust control permits are necessary for any activity that disturbs a surface area greater than 0.1 acres, or involves building demolition.)

1. Exemption

Dust free surfaces are exempt. A dust free surface is an area completely covered by concrete, asphalt, cement or sealed aggregate pavement; three (3) inches deep crushed rock completely contained in a permanent border; and/or another stabilization material approved by the city. All other surfaces are unpaved surfaces.

2. Dust Control Measures

Options fall into two categories: materials and methods. The “materials” list describes construction materials, elements, and techniques used to limit dust emissions. The “methods” list includes land use options, such as preventing access, limiting traffic, etc. Property owners and/or operators should review the following options and determine which material(s) and/or method(s) would be appropriate. Multiple options and combinations of options are often most effective. All dust control measures shall be maintained as appropriate to effectively control dust.

a. Materials:

- Watering
- Stabilization with gravel or decomposed granite
- Stabilization with recycled asphalt paving
- Stabilization with wood chips or other organic matter
- Dust suppressant/chemical stabilization application
- Standing vegetation
- Flat vegetative cover
- Grass
- Wind Fences
- Wind Screens
- Curbed perimeter
- Track out devices
- Paved access points
- Other

b. Methods:

- Increase frequency and/or intensity of watering if dust is not controlled
- Increase frequency/intensity of watering during high wind conditions
- Limit vehicle access
- Reduce vehicle speed
- Cease parking temporarily
- Other

3. Dust control for ingress, egress, parking and maneuvering areas at residential and commercial developments (Sec. 46-17 Surfacing)

1. Reduce/delineate the area used for ingress, egress, parking and maneuvering by:
   a. Eliminating circular drives
   b. Use of only one ingress/egress
   c. Installing barriers such as boulders or logs to delineate driving areas
   d. Installing shrubs, trees, berms or other effective landscape which would reduce the driving area
2. Reduce dust from areas that will be utilized by motorized vehicles on a regular basis by:
   a. Applying and maintaining surface gravel or decomposed granite
   b. Applying and maintaining dust palliatives, chemical stabilizers or similar dust control materials
   c. Watering frequently
   d. Applying and maintaining organic stabilizers
   e. Installing and maintaining vegetative ground cover. Examples include native grasses, shrubs, trees, vines, or vegetative debris that is not subject to movement by wind.
   f. Paving with asphalt, concrete, or other similar material including porous asphalt or concrete
   g. Posting 5 mile per hour speed limit signage, and maintaining slow speeds
   h. Using other

4. Dust control for vacant lots and open areas where vehicle trespass has occured (Sec. 18-9.2 and 19-14)

1. Reduce the area available to motorized vehicles by:
   a. Posting no trespassing signs
   b. Installing barriers or curbs with City approval
   c. Installing fences, gates, or posts with City approval
   d. Creating landscape berms
   e. Installing shrubs, trees, or other effective landscape which would prohibit access
2. Reduce dust from where motorized vehicle use has occured by:
   a. Applying and maintaining surface gravel or decomposed granite
   b. Applying and maintaining dust palliatives, chemical stabilizers or similar dust control materials
   c. Watering to form a soil crust
   d. Applying and maintaining organic stabilizers
   e. Installing and maintaining vegetative ground cover. Examples include native grasses, shrubs, trees, vines, or vegetative debris that is not subject to movement by wind.
   f. Paving with asphalt, concrete, or other similar material including porous asphalt or concrete
   g. Posting 5 mile per hour speed limit signage, and maintaining slow speeds
   h. Using other methods as approved by Maricopa County and the City of Scottsdale

5. **Dust control for temporary parking on vacant lots and open areas, including for special events (Scottsdale Revised Code, Appendix B Basic Zoning Ordinance Article VII Section 7-900)**

Vacant lots and open areas that are used for temporary parking, including parking for special events shall comply with these requirements before, during and after the special event or land use as temporary parking. After the vacant lot and/or open area has been used for parking, the property owner and/or operator shall permanently stabilize all portions of the lot where vehicle use disturbed the surface. The property owner and/or designee shall thereafter comply with the requirements of Sec. 2-1.709 E. 2. for dust control on vacant lots and open areas.

The owner and/or operator shall complete a dust control plan for temporary parking using the form provided by the city and/or following city guidance, and submit it along with the other requirements for a Special Event Permit or as a standalone requirement. The plan shall include primary and contingency dust control measures, a commitment to control and clean up track out onto paved surfaces, and measures to permanently stabilize the area disturbed by vehicle use after the vacant lot or open area has been used for temporary parking. Appropriate dust control measures, both materials and methods are listed in Sec. 2-1.709 E. 2. a. and b. Permanent stabilization must be accomplished using the dust control materials listed in Sec. 2-1.709 E. 2. a. Trackout control devices, approved by the city must be used at all ingress/egress points and traffic controlled at the site to use only designated ingress/egress points. Any trackout that extends 25 feet or more onto a paved surface must be cleaned up immediately, and all trackout of any length must be cleaned up at the end of the day. The intent of these requirements is to keep City of Scottsdale requirements equivalent to Maricopa County Air Quality Department Rule 310.01 Sec. 302.5 and 302.6 related to vacant lots and open areas and parking.

These dust control methods are effective when appropriately applied although the effectiveness may vary based upon individual circumstances. Other dust control methods may be acceptable based on review and approval by Maricopa County Air Quality Department and the City of Scottsdale.

DRIVEWAY GATES 2-1.710

Unless otherwise approved by the Transportation Department, gates at driveway entrances shall be placed at least 25 feet in back of the existing or planned back-of-curb of the adjacent street excluding gated residential development. Gated residential development must comply with Figure 2.1-3.

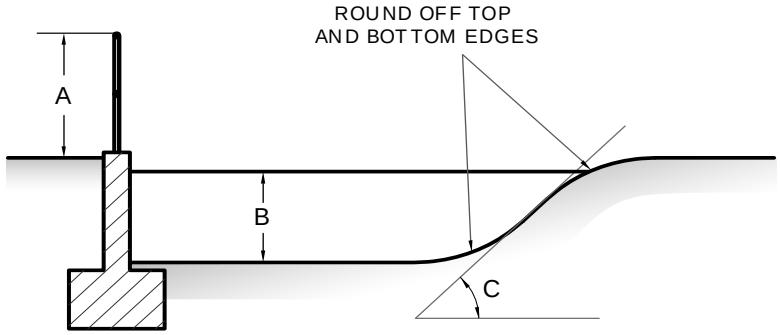
DRAINAGE FACILITIES 2-1.800

DETENTION BASINS 2-1.801

Incorporate the following criteria in the design of drainage detention basins:

1. The maximum depth of water stored in the basin should be 3 feet, see Figure 2.1-5 below.
2. The maximum side slope of the basin is 4:1 unless otherwise approved by city staff.
3. Round and contour the bottom and top edges of the side slopes in order to achieve a gradual slope transition.
4. Use textured and/or dark surface treatments on the portion of the wall that could be inundated to minimize the visibility of staining typical to basins where retaining walls are used as an edge of a basin. Place safety railings or solid walls at least 42 inches tall on top of such walls.

5. Use only plant materials in basins that are capable of being inundated and surviving. Trees and woody shrubs are preferred; avoid succulents and herbaceous shrubs in basins. In areas where natural desert plants are being used, use plants that are typical to desert riparian areas, such as mesquite, blue palo verde, desert willow, wolfberry, desert hackberry, desert holly, jojoba and beloperone, etc.
6. Basins shall not occupy more than 50% of the frontage landscaped area unless specifically approved by the Development Review Board.
7. Do not place drainage basins on individual lots unless the following criteria are met:
   a. The basin is directly accessible and visible from a street or alley.
   b. The maintenance of the basin is designated to a property owners association.
   c. The basin and its access are placed within a drainage and access easement.



A: 42" MIN. B: 36" MAX. C: 3:1 MAX. / 4:1 AVERAGE

FIGURE 2.1-5 DETENTION BASINS

8. Landscape installation shall conform to the most current City of Scottsdale supplement to MAG Section 430 and related details.
9. Natural growth habits shall be taken into consideration to minimize maintenance frequency and intensity.
10. Landscaping should not create hazards to public safety through either plant growth habit, structure, or location.
11. Trees should not be planted within 10 feet of an existing private wall, sign, light pole, or fire hydrant.

2-1.802 SURFACE CHANNELS

Site plans should incorporate the following criteria in the placement, design and use of surface drainage facilities:

1. Keep major natural vegetation specimens along washes in place wherever possible.
2. Place amenities for the on-site use, such as dining patios or recreation centers, next to drainage ways where feasible.
3. Landscape any engineered and constructed channels in a manner that helps to manage the storm flows and provides the channel as a visual amenity for the site and community. Concrete and rock surfaces should be kept to a minimum. If such materials are used, they should be formed and applied in a “natural” manner or designed to integrate with the on-site buildings.
4. Provide walkways and/or trails on large sites of 20 acres or more next to or within such drainage ways.

5. Any rock used in any drainage facility shall be native and/or crushed rock. Do not use river-run cobbles.

NATIVE PLANTS IN DETENTION BASINS AND DRAINAGE CHANNELS

2-1.803

The following is a guide in the use of native plants within detention basins and improved drainage channels:

1. Plants that can be placed on the bottom of a basin:
    - Velvet Mesquite (Prosopis velutina)
    - Four-wing Saltbush (Atriplex canescens)
    - Desert Hackberry (Celtis pallida)
    - Catclaw (Acacia greggii)*
    - Scrub Oak (Quercus turbinella)*
    - Chuparosa (Justicia californica)
    - Canyon Ragweed (Ambrosia ambrosioides)
2. Plants that may be placed on the sides of a basin:
    - (All plants listed above)
    - Ironwood (Olneya tesota)
    - Blue Palo Verde (Cercidium floridum)
    - Desert WIllow (Chilopsis linearis)
    - Saguaro (Carnegiea gigantea)
    - Wolfberry (Lycium Sp.)
    - Desert Lavender (Hyptis emoryi)
    - Fairy Duster (Calliandra eriophylla)
    - Creosote (Larrea tridentata)
    - Jojoba (Simmondsia chinensis)*
    - Hopbush (Dodonaea viscosa)*
    - Mormon Tea (Ephedra trifurca)*
    - Cheese Bush (Hymenoclea monogyra)
    - Deer-Vetch (Lotus rigida)*
    - Sugar Sumac (Rhus ovata)*
3. Plants that should not be used in any part of a basin:
    - Foothills Palo Verde (Cercidium microphylla)
    - Chollas and Pricklypears (Opuntia Sp.)
    - Barrel Cacti (Ferocactus Sp.)
    - Bursage (Ambrosia deltoidea)
    - Century plants (Agave Sp.)
    - Brittle bush (Encelia farinosa)
    - Buckwheat (Eriogonum fasciculatum)
    - Ocotillo (Fouquieria splendens)

(*) - Plants that should be installed in locations above 1800 feet in elevation.

2-1.900 LANDSCAPE DESIGN

2-1.901 DESIGN STANDARDS

1. Unless approved by the Development Review Board, the palette of plants in a landscape design that adhere to the Arizona Department of Water Resources (ADWR) Low Water Use/Drought Tolerant plant list.
2. Any landscape design in Scottsdale shall comply with the provisions of the city's Water Conservation ordinance (Chapter 49; Article VII). In particular, landscaping plans shall follow the specific limitations regarding the use, design, location and installation of fountains, turf and water intensive landscaping.
3. The maximum distance between shrubs, trees, and groundcover limits within a project shall not exceed 7 feet, as measured between trees, shrubs and groundcover limits.
4. Incorporate salvaged native plants from the site into the landscape design for the property. Their placement shall consider the natural culture for that type of plant.
5. The maximum height of any shrubs, ornamental plants, boulders, walls or other such materials within a designated Sight Visibility Triangle shall not exceed 18 inches. For plants, this shall be the natural height of the plant. Any trees that are to be placed in the Sight Visibility Triangle shall have a canopy that is kept 8 feet above the curb height and a maximum mature trunk diameter of 8 inches. If the tree canopy overhangs the roadway, then the canopy must be a minimum of 13.5 feet above the road, see Figure 2.1-6. See the landscaping requirements for intersection sight distances and traffic safety triangles in Section 5-3.119, paragraphs D and E, especially Figure 5.3-26 and Figure 5.3-27.
6. Do not place trees and boulders within a Public Utility Easement (PUE), Emergency Vehicle Access Easement or their equivalent.
7. Place trees, saguaros or in-line walls at least 7 feet back from any underground public water or sewer lines or power line conduit, see Figure 2.1-7.
8. The following plants shall not be used in any landscaping installation or revegetation program:
    - Desert Broom *(Baccharis sarothroides)*
    - Red Bromegrass *(Bromus rubens)*
    - Buffel Grass *(Pennisetum ciliare)*
    - Salt Cedar *(Tamarix spp.)*
    - Fountain Grass *(Pennisetum setaceum)*
    - Mexican Palo Verde *(Parkinsonia aculeata)*

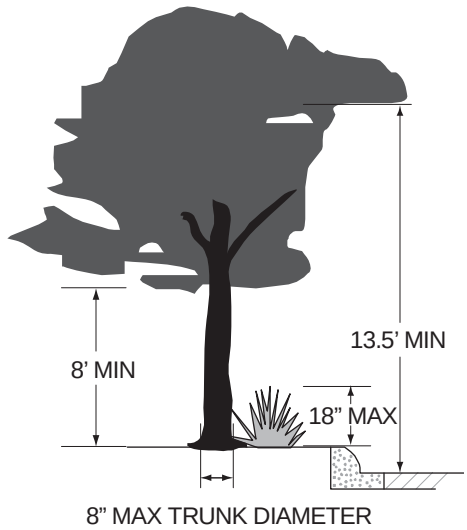


FIGURE 2.1-6 LANDSCAPING IN THE SIGHT VISIBILITY TRIANGLE

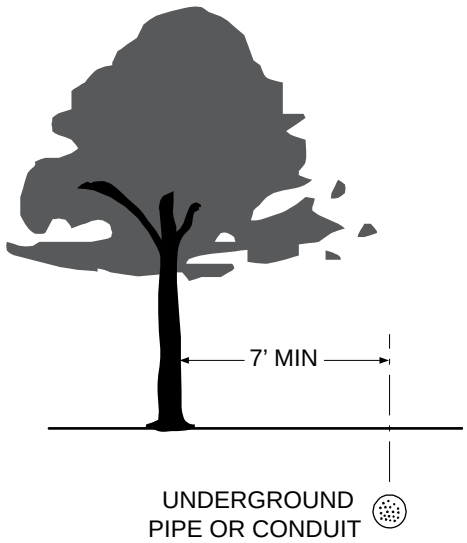


FIGURE 2.1-7 TREE SETBACK FROM UNDERGROUND PIPE OR CONDUIT

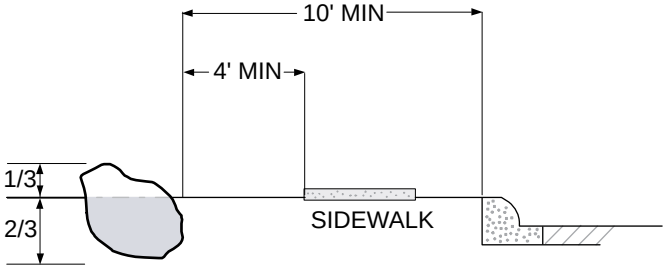


FIGURE 2.1-8 BOULDER PLACEMENT

9. Install boulders with 2/3 of their volume below the ground and place them at least 10 feet away from any curb and at least 4 feet from any walkway, see Figure 2.1-8 above. (Boulders shall not be installed in medians or rights-of-way that will be maintained by the City of Scottsdale unless separate approval from the City of Scottsdale's Risk Management Division and Parks Department).
10. Install decomposed granite, if used as a ground cover, to a minimum depth of 2 inches on sites outside of ESLO areas.
11. Use indigenous rock for any rip rap applications (river-run rock is not allowed).
12. Place trees so that their mature canopies shall not overhang the vehicular lanes in a street or across property lines. Place them so as to not block monument or tower signs.
13. Do not plant thorny shrubs and cacti where their mature canopy would be closer than 4 feet from any walkways or parking area curbing.
14. Do not plant shrubs and trees within the 2 feet overhang at the head of a parking stall.
15. Provide base planting landscaping areas adjacent to the building on all sides of buildings in a suburban or rural type of context, except where there are designated loading areas. Unless otherwise approved by the Design Review Board, the minimum width of any such area shall be 8 feet excluding any pedestrian walkways. Include trees and shrubs in these

areas that provide strategic shading of the windows and doors, reinforce the architectural elements of the building, and provide comfort and interest to pedestrians.

16. City maintained landscape installation shall conform to the most current City of Scottsdale supplement to MAG Section 430 and related details.
    - Natural growth habits shall be taken into consideration to minimize maintenance frequency and intensity.
    - Landscaping must not create hazards to public safety through either plant growth habit, structure, or location.
17. City maintained trees should not be planted within 10' of an existing sign or light pole.

2-1.902 IRRIGATION

1. Provide an automatic irrigation system for all landscaped areas. This system shall include a back flow preventor and be designed to minimize overflow and seepage outside of the landscaped area.
2. Completely screen backflow preventors using a screening wall, cage or dense plant materials. Place them next to the water meter in accordance with Water Resources Department requirements. All back flow preventors shall be designed and installed per the COS/MAG details.
3. Do not connect water features to the irrigation system. Water features shall have a separately dedicated line either from the meter or from a building. A backflow preventor shall be provided between the building and/or meter per the same details as noted above.
4. City of Scottsdale Development's irrigation installation shall conform to the most current City of Scottsdale supplement to MAG specifications and details.
5. See Section 2-1.1102 for landscape lighting.

2-1.1000 SUBDIVISION & NEIGHBORHOOD DESIGN

This section focuses on standards and approaches that achieve good subdivision design in the context of Scottsdale and its settings and neighborhoods. It applies to all major and minor subdivisions as well as any other form of land division. These criteria are preferred approaches, but alternative approaches that achieve equivalent protection of existing neighborhoods and the native desert setting may be proposed and accepted.

Before the Development Review Board application, the developer shall stake the alignments for all internal streets and driveways subject to inspection by Planning and Development Services Department's staff to confirm that the proposed alignments result in the least environmental and hydrological impact. The Planning and Development Development Services project coordinator may approve the use of rectified aerial photographs in-lieu of on-site staking.

2-1.1001 STREET DESIGN

Street location and arrangement shall conform to the following general principles:

1. Whenever a proposed subdivision embraces any part of a street shown on a street plan adopted by the city, the subdivision shall be platted in conformance with the adopted street plan.
2. Street layout shall provide for the continuation of streets shown on any adopted street plan as the city staff may designate.
3. The city staff may require the owner to extend certain proposed streets to the boundary of the proposed subdivision to provide future connections with adjoining land.
4. Local streets shall be arranged to discourage their use by through traffic.

5. Where a proposed subdivision abuts or contains an existing or proposed arterial street, the city staff may require frontage streets or reverse frontage with vehicular non-access easements along the arterial street, or other treatment to protect residential properties from the nuisance and hazard of high volume traffic, and to preserve the traffic function of the arterial street.
6. Where a subdivision abuts or contains the right-of-way of a railroad, a limited-access highway or an irrigation canal, or abuts a commercial or industrial land use, the city staff may recommend location of a street approximately parallel to and on each side of such right-of-way at a distance suitable for appropriate use of the intervening land. Such distance shall be determined with due regard for approach grades, drainage, bridges or future grade separations.
7. Half streets are discouraged except where necessary to provide right-of-way required by an adopted street plan, to complete a street pattern already begun, or to ensure reasonable development of adjoining parcels. Where a platted half street abuts a proposed subdivision and the half street furnishes the sole access to residential lots, the remaining half shall be platted within the street.
8. Where there are existing streets adjacent to the subdivision, subdivision streets shall be improved to the intercepting paving line of such existing streets.
9. All streets (including private streets) shall be designed and constructed in conformance with the DS&PM.
10. Alleys shall be designed and constructed in conformance with the following right-of-way width standards:
    a. Sixteen (16) feet if single-family residential on both sides;
    b. Twenty (20) feet if abutting commercial, multiple-family residential or industrial districts.
11. Alley intersections and sharp changes in alignment shall be avoided, but where necessary corners shall be cut off fifteen (15) feet on each side to permit safe vehicular movement. Dead-end alleys are prohibited.
12. Dead-end streets serving more than four (4) lots shall be graded and surfaced to provide a turning circle to conform to standards in the DS&PM.

BLOCK DESIGN

2-1.1002

1. Where a new subdivision is being placed in an infill location, the block size, dimensions and orientation should generally match those of the surrounding area. If in some cases it is advisable to terminate any existing street connection, it may be necessary to continue a pedestrian walkway across the block in order to maintain current pedestrian accessibility.
2. In general, block lengths should be kept to a maximum length of 800 feet. Block lengths greater than 1,200 feet shall be subject to the specific approval of the Planning and Development Services General Manager or designee.
3. Where block lengths exceed 660 feet cross-block pedestrian connections may be required. This is most important if there is a nearby school, park, recreational amenity or similar destination. Such connections shall be placed within a tract that has a minimum width of 20 feet for single use paths or walks and 30 feet for multiple use corridors or where the terrain is difficult.
4. In general, lots located at the end of a block should not face the short side of the block (in other words, do not create corner lots that abut key lots).
5. In ESL areas these criteria may be waived where there are major terrain constraints and large natural areas that are being preserved.

6. Street and lot designs shall be arranged so that they work with the constraints of the natural topography to achieve desirable lots with viable building envelopes, streets with reasonable gradients, and adequate, manageable drainage facilities.

2-1.1003 PERIMETERS OF DEVELOPMENTS

A. Along Major Streets

The following criteria applies to perimeters that front streets classified as collectors, arterials or parkways:

1. Residential lots shall not be placed with such streets as their sole point of access. A one (1) foot wide Vehicular Non-access Easement (VNE) shall be placed along such frontages. An exception may be considered where the lot sizes are equal to or greater than 35,000 square feet. In such cases, lots may be allowed to access a local or minor collector, provided that they are required to provide shared driveways, circular driveways, or a similar driveway configuration that does not lead to a vehicle backing on to the street.
2. Wherever possible lots should not be oriented with rear yards facing the major street. The following techniques should be considered:
   a. Place lots so that their side yards abut the street. Cul-de-sac turn-arounds should extend to the right-of-way of the major street.
   b. Place the front yards toward the major street, using a frontage road approach for access to the lots.
   c. Place a large (at least 100 feet wide) landscape/open space tract between the lots and the major street.
3. Landscaped buffers are common along the perimeter of subdivisions where they front on to major streets. To assure there is adequate room for meaningful landscaping in such situations, the width of the landscape tract along the major street frontage should be as follows:
   a. Major Arterial Street Frontage: 15 feet wide tract
   b. Minor Arterial Street Frontage: 12 feet wide tract
   c. Major Collector Street Frontage: 15 feet wide tract
   d. Minor Collector Street Frontage: 15 feet wide tract
   e. Local Collector Street Frontage: 10 feet wide tract
   f. Residential Street Frontage: 10 feet wide tract
   g. Commercial Street Frontage: 15 feet wide tract
4. Where single family residential lots in a subdivision have double frontage with 1 of the fronts facing an arterial or collector street, a vehicular non-access easement and a tract equal in width to the landscaped buffer described in 2-1.802.1.c. above shall be provided.

B. Along Non-Residential Uses

1. Where a residential subdivision abuts a non-residential use, the following lot layout techniques should be considered:
   a. Provide a landscaped or open space buffer of at least 25 feet in width and place the lots so they ‘side’ on to this buffer.
   b. Place the fronts of the lots toward the non-residential use, using a local street as a physical separation.
   c. Any combination of techniques that avoid having active rear yard areas and bedroom areas in the residences exposed to the adjacent use.
   d. If there is a substantial open space separation (at least 100 feet in width) it may be acceptable to have rear yard areas directed toward the non-residential use.

e. Wherever possible, functions such as detention basins, recreational facilities, common storage areas, and other such uses should be used to provide buffering from adjacent non-residential uses.

C. Along Existing Residential Uses

1. To the greatest extent possible the lots in a new subdivision should mirror the layout of an existing adjacent subdivision (rear yards adjacent to rear yards, side yards adjacent to side yards, etc.).
2. Where feasible, lot dimensions and setbacks in a new subdivision should match those of the adjacent existing subdivision for those lots that abut the adjacent subdivision, particularly if there is little or no separation between the lots of the two subdivisions.
3. Grade changes from the off-site grades along the perimeter of a new subdivision should be minimized. In particular, the lots in the new subdivision should not be more than 18 inches above the abutting lots in the existing subdivision. If greater grade change is desired, there should be a buffer or a gradual grade transition on the new subdivision in order to minimize the change at the property line.

D. Along Vacant Properties

1. Grade breaks at the edge of a subdivision should be kept to less than 2 feet wherever possible. If this is not possible then these lots should be made deeper so that the transition is not so abrupt.

SUBDIVISION ENTRIES 2-1.1004

A. Entry Street Design

1. Entry streets into a subdivision should not terminate into a “T” intersection with lots facing down the entry street. This termination should end at an open space, a recreational facility, or into a cul-de-sac.
2. Where an entry street for a subdivision is relatively short (less than 600 feet), there should not be any lots directly accessing the entry street.

B. Connections

1. In order to minimize congestion at entries into a subdivision as well as the street that the subdivision is accessed off of, there should be an entry street for every 75-100 homes in the subdivision. It is understood that this may not be feasible in ESL areas due to the terrain.
2. Wherever possible, entry streets for a subdivision should align with streets on the other side of the road that they intersect with.
3. Where a subdivision is adjacent to vacant lots, un-subdivided lots or a street from an adjacent subdivision, the new subdivision should provide equal rights-of-way in order to complete the street or should extend street rights-of-way to the adjacent parcels unless it can be proven that another viable access route is available to them.
4. Pedestrian connections to adjacent properties or streets should be provided where there are nearby schools, parks or other such pedestrian destinations.

C. Gated Streets

1. Gated streets should only be used where there are sufficient lots available to support future maintenance and reconstruction of the street. In general, avoid gated subdivisions of less than 20 lots.
2. All subdivision or neighborhoods that have private streets shall be accessed through a controlled access gate.

2-1.1005 LOT DESIGN

1. Since corner lots have two frontages they are more limited than other lots in providing usable private outdoor space. To compensate for this, it is recommended that corner lots be wider than the other typical lots in the subdivision, as follows:
   a. Lot sizes of 4,500 – 6,500 sq. ft.: 5 feet wider
   b. Lot sizes of 6,600 – 12,000 sq. ft.: 7 feet wider
   c. Lot sizes of 12,000 – 24,000 sq. ft.: 10 feet wider
   d. Lot sizes of 25,000 – 45,000 sq. ft.: 15 feet wider
2. It is recommended that corner lots should not be placed next to key lots unless there is no other reasonable option in the design of the subdivision.
3. Through or double frontage lots are discouraged. If lots are to be laid out with rear yards facing a street, it is recommended that landscape tracts be established along the street with widths as recommended in Section 2-1.1003 paragraph 3.
4. If unusual (multi-sided, non-rectangular, etc.) lot designs are proposed, the preliminary and final plats should indicate the locations of all setbacks and yards on the lot, subject to the approval of Project Review staff.
5. Unless there is no other reasonable solution, the access to the buildable portion of a lot should not cross a wash or drainage way.
6. All residential lots shall have frontage on and access to a public street or private street in conformance with city code. All non-residential lots shall have frontage on and/or access to a public street or private street in conformance with city code.
7. Common driveways serving two adjacent lots may be advisable where the access to the lots crosses a minor or major wash, there are significant rock formations and boulders, or there are steep (over 10%) slopes. The route of the common driveway shall be included in an access easement shown on the plat. If this driveway crosses a wash, the driveway should be improved beyond the crossing at the time the master subdivision improvements (streets, infrastructure, etc.) are improved.
8. Flag lots should not be used regularly in the layout of subdivisions. However, where there are major washes, rock formations or steeper slopes that would cause a street extension to achieve frontage to each lot to result in significant cuts and fills, flag lots can be used to reduce the physical impact of providing access and utilities to lots in sensitive areas.
9. All residential subdivisions in the ESLO area shall establish a construction envelope at the time of preliminary plat approval.

2-1.1100 OUTDOOR LIGHTING

2-1.1101 AMBIENT LIGHTING ZONES

In its recent update of lighting standards and design approaches, the International Illumination Society (IES) developed a concept of Ambient Lighting Zones to provide appropriate lighting levels based on the context of an area. This recognizes that urban areas with a great deal of pedestrian activity need different lighting levels than areas of very large lots and passive expanses of open space. Figure 2.1-9 represents where such ambient lighting zones apply in the city. The design of outdoor lighting should use these lighting zones in conjunction with the most recent IES lighting design manuals, see www.ScottsdaleAZ.gov/design.

E-1 – Intrinsically Dark Areas: These are predominantly passive open space areas or very low density residential neighborhoods (Typically the desert preserve areas and it may include lots that are 3 acres and larger). There is little nighttime activity and few outdoor lighting sources.

E-2 – Estate/Rural Areas: These are low-density areas (typically ½ to 2 acre lots) or there are substantial areas of passive open space interlaced within the pattern of development. Pedestrian activity is minimal but there are occasional retail/service and community service facilities that have nominal amounts of local activity. Lighting levels are generally low; there is often an expectation in the neighborhoods that the lighting levels remain low.

E-3 – Suburban Areas: These are the typical suburban areas that have moderate to higher residential densities along with a mix of campus or open style retail, service, employment, and public facilities. Lighting levels in general are moderate, although in some areas such as those around retail centers or schools the need for higher lighting levels may exist.

E-4 – Urban/Pedestrian Activity Areas: In these areas there are typically dense land uses, often with little setback from streets, and there is a rich mix of different uses. Retail and cultural uses tend to generate higher levels of pedestrian activity, resulting in the need for higher levels of lighting.

Use these general lighting design principles for outdoor lighting:

1. Consider and reflect the nature of the adjacent land uses in all lighting designs. In particular, maintain the existing ambient lighting level of adjacent residential areas.
2. Focus outdoor lighting on identified tasks instead of providing a wash of lighting across a site or building. Emphasize lighting for pedestrian access and activity areas such as building entrances, walkways, and outdoor gathering facilities.
3. Provide gradual transitions from well lit to unlit areas.
4. Special uses, such as sports facilities or outdoor displays will require specific lighting approaches.
5. In general, the lighting source should not be visible from off of the property.

CITY WIDE EXTERIOR LIGHTING DESIGN GUIDELINES FOR ALL DEVELOPMENT SUBJECT TO THE DEVELOPMENT REVIEW BOARD'S REVIEW PROCESS

2-1.1102

Scottsdale has developed specific lighting design standards for all development that are subject to the Development Review Board's review process. Unless specifically modified by the Development Review Board or City Council through stipulation(s), all development shall incorporate the following:

A. General Lighting Design Standards

1. All exterior luminaires shall meet all IESNA requirements for full cutoff, and shall be aimed downward and away from property line except for sign, landscape (if approved by the Development Review Board), bollard, path and parking lot canopy luminaires.
2. All luminaires shall be recessed or shielded so the light source is not directly visible from property line.
3. Wall mounted luminaires, adjacent to residential zoning districts and/or ESL areas of the city, shall contain house-side shields and be mounted on a minimum 4-inch long bracket that is mounted perpendicular to the wall.
4. The individual luminaire lamp shall not exceed 250 watts, except for sports court and sports field lights.
5. All High Intensity Discharge lamps in the Environmentally Sensitive Lands (ESL) areas of the city shall be high pressure sodium lamps.
6. All exterior bollard luminaires shall meet all IESNA requirements for cutoff, and shall have non-reflective exterior louvers. The louvers shall be positioned to screen the lamp source from view.

7. All bollard lamps shall be coated/diffuse lamps. Path luminaires within a subdivision shall be cutoff and shall utilize an incandescent, halogen incandescent, or compact fluorescent lamps source.
8. The maximum height from finished grade to the bottom of the any exterior luminaire shall not exceed twenty (20) feet, except in the ESL areas of the city, parking lots adjacent to residential zoning districts, sports court, sports field lights, churches adjacent to residential zoning districts, and/or as specified by the Zoning Ordinance.
9. In the ESL areas of the city, parking lots adjacent to residential zoning districts, churches adjacent to residential zoning districts, and/or as specified by the Zoning Ordinance, the maximum height from finished grade to the bottom of the any exterior luminaire shall not exceed sixteen (16) feet.
10. In the ESL areas of the City, no lighting shall be permitted in NAOS easements, vista corridor easements, scenic corridors, buffered setbacks, and/or desert scenic roadways setbacks.
11. All exterior light poles, pole fixtures, and yokes, including bollards shall be a flat black or dark bronze.
12. Subject to the approval of the Planning and Development Services General Manager, or designee, the maintained average horizontal illuminance at grade, within 10-feet of the primary customer storefront entries shall not exceed the maintained average horizontal illuminance level at grade of five (5) foot-candles. The maintained maximum horizontal illuminance level at grade along the storefront entries shall not exceed fifteen (15) foot-candles. The foot-candle reading shall include any spill light from the store's interior.
13. Any lighting system for sports court or sports field facilities are required to obtain a separate approval from the Development Review Board.

B. Carport Lights

Carport light fixtures shall be recessed within the canopy, shall not project below the fascia, and the light source shall be not directly visible from the property line.

C. Gas Station, Convenience Store, and Automated Teller Machines Lighting

All Gas Station, Convenience Store, and Automated Teller Machines (ATM) drive-thru and walk-up locations shall not exceed the illuminance levels specified within the Gas Station and Convenience Store Development Design Guidelines and ATM Lighting Guidelines.

D. Landscape Lighting

All landscape lighting shall be included as part of the Development Review Board application; if approved by the Development Review Board, all landscape lighting shall comply with the following:

1. Landscaping lighting shall only be utilized to accent plant material.
2. Any landscape lighting that is directed upward shall utilize extension visor shields to limit the view of the lamp source, and shall be aimed away from property line.
3. Any landscape lighting hanging in vegetation, shall contain recessed lamps, and be directed downward and away from property line.
4. The landscape light fixture lamp shall be an incandescent or halogen incandescent source, and shall not exceed fifty (50) watts in non-ESL areas, or twenty (20) watts in ESL area.

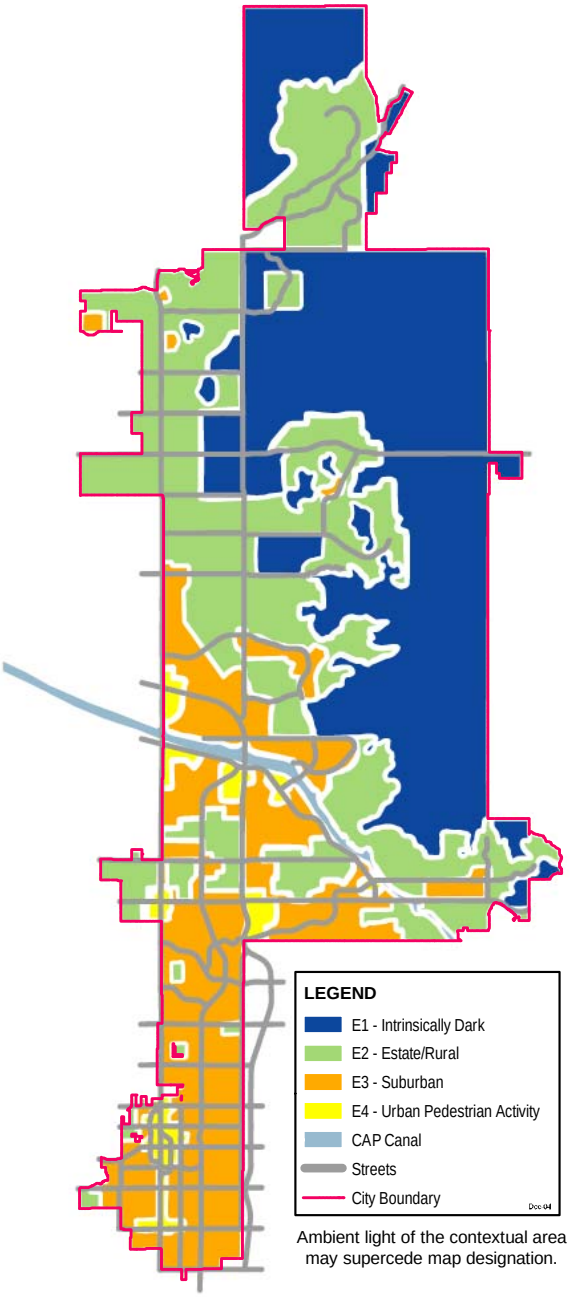


FIGURE 2.1-9 AMBIENT LIGHTING ZONES

STREET LIGHTING

2-1.1103

A. City Process for Providing Streetlights

Unless otherwise provided in the General Plan or other city-adopted land use plans, all development within the city must provide streetlights per city ordinance and the Design Standards and Policies Manual. Residents living on public streets in areas without streetlights may petition the city to form a Streetlight Improvement District. Once a district is approved, fees are assessed by the Maricopa County Assessor's Office. City staff will act as a resource for residents in forming a Streetlight Improvement District. However, residents are encouraged to seek advice of private counsel to assist in forming a Streetlight Improvement District.

B. Process for New Land Divisions to Form a Streetlight Improvement District

1. Land owner files a Streetlight Improvement Petition to form a Streetlight Improvement District, see www.ScottsdaleAZ.gov/bldgresources/forms.
2. Land owner obtains streetlight layout from appropriate utility company which is reviewed by city staff.
3. City staff prepares and presents Resolutions proposing formation of a Streetlight Improvement District to City Council (simultaneously if land owner is 100% property owner).
   - Resolution of Intention
   - Resolution Ordering Work
4. City staff sends approved Streetlight Improvement District request to Maricopa County Assessor for assessment.

C. Process for Residents to Obtain New or Additional Streetlights

1. Residents file a Streetlight Improvement Petition to form a Streetlight Improvement District, see www.ScottsdaleAZ.gov/bldgresources/forms.
2. City staff reviews Petition to determine property ownership for compliance with state statute (51% must be in favor of forming district).
3. Residents obtain streetlight layout from appropriate utility company which is reviewed by city staff.
4. City staff prepares and presents Resolution of Intention to City Council to begin process of forming Streetlight Improvement District.
5. If Resolution of Intention is approved by City Council, it is posted per state statute for 15 day protest period.
6. If no protest is filed, city staff takes Resolution Ordering Work to City Council for approval and finalizing district formation.
7. If Resolution Ordering Work is approved by City Council, city staff sends request to Maricopa County Assessor for assessment.
8. If substantial protest is received, the district will not be formed.

D. Street Light Design

Street lighting design in the City of Scottsdale should follow the latest edition of the IES "Roadway Lighting" manual (RP-8). Figure 2.1-9 identifies four different lighting level areas within the city use as a basis of design approach. The four street lighting approaches are:

No Street Lights – In this area there are large expanses of open spaces or low residential densities with few other uses that would generate any pedestrian activity. Streetlights will be provided at signalized intersections.

Partial Lighting – This area includes those with significant natural areas and land slopes of 3% or greater and those with 1 acre parcels that are pocketed into suburban areas. Where the residential density is less than 1.5 dwellings per acre, streetlights will be placed at intersections along collector or larger streets. Where the densities are higher, streetlights will be placed at all street intersections (see RP-8 Section 3:13).

Suburban Street Lighting - These are the typical medium density residential, commercial, and employment areas. For residential areas, the maintained illuminance values should be based on RP-8 Table 2.b column R4. For the Airpark and other business areas, the same column should be used with the "Intermediate" land use area classification.

Pedestrian Activity Lighting – These areas are where there are relatively high-density land uses, higher levels of transit service, and a mix of uses that generate strong pedestrian activity. The maintained illuminance values for such areas should be based on RP-8 Table 2.b column R4 and using the "Commercial" land use area classification.

Consider these general design principles in street lighting design:

1. Where street lighting levels change along a street corridor, the design should consider RP-8 Section 3:16, “Transition Lighting.”
2. Light walkways and separated bikeways using the maintained illuminance levels identified in RP-8 Table 4.

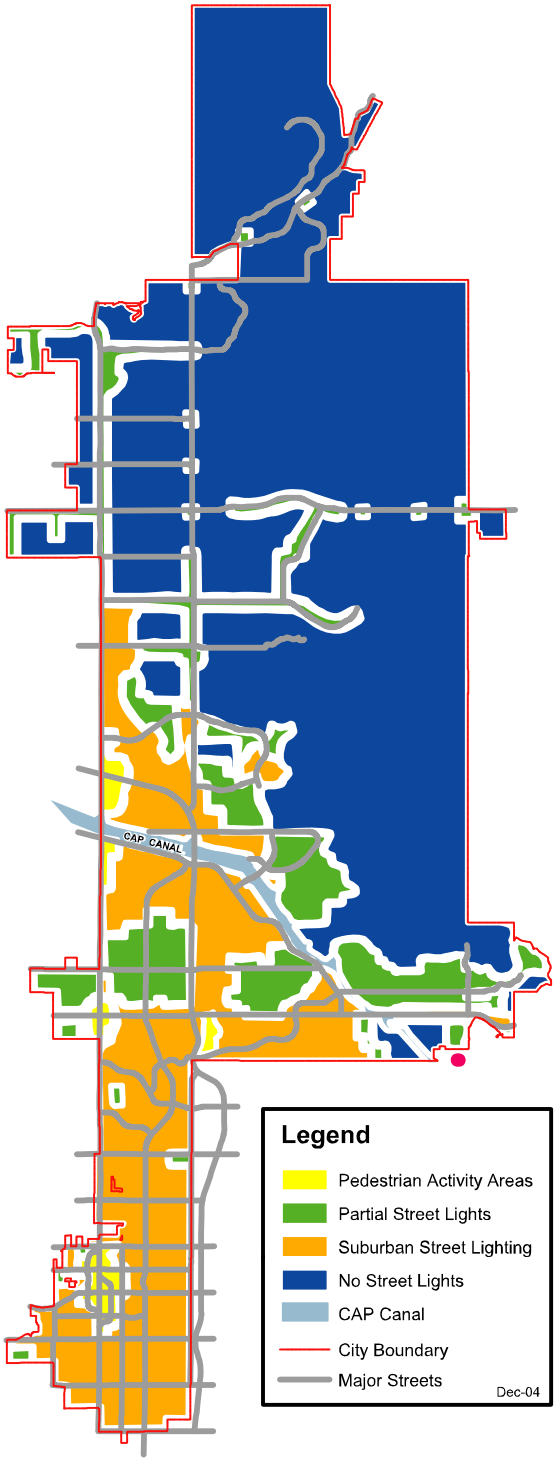


FIGURE 2.1-10 STREETLIGHT POLICY MAP

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STREETLIGHT IMPROVEMENT DISTRICT

STREETLIGHT IMPROVEMENT DISTRICT PETITION

TO THE MAYOR AND COUNCIL OF THE CITY OF SCOTTSDALE:

We, the undersigned, are all or a majority of the real property owners (exclusive of mortgagees and other lienholders) within the district named below. We petition the City Council of the City of Scottsdale, Maricopa County, Arizona, to establish a street lighting improvement district under ARS Sections 48-571 to 48-622, and any amendments, and specifically ARS Sections 48-616 and 48-617, to purchase electricity for lighting the public streets and/or parks within the district. This petition includes a charge for maintaining the lighting facilities.

We petition the City Council, after verifying our ownership and making a finding of that fact, to adopt (1) a resolution of intention to order the proposed improvements under ARS Section 48-576, and (2) a resolution to order the construction of improvements under ARS Section 48-581, without publicizing and posting the resolution of intention under ARS Section 48-578.

If we are only a majority of the real property owners in the district, we petition the City Council to (1) adopt a resolution of intention to order the proposed improvements under ARS Section 48-576, (2) publish and post it under ARS Section 48-578, and (3) unless protests received under ARS Section 48-579 are sufficient to bar further proceedings, proceed with constructing the improvements petitioned for.

The name of the proposed street and/or park lighting improvement district shall be:

_____

PETITIONERS: Please print and sign your name

PETITIONERS NAME	ADDRESS	SIGNATURE

Appendix 2-1A

STREETLIGHT IMPROVEMENT DISTRICT

PETITIONERS NAME	ADDRESS	SIGNATURE

Section 2-2

ENVIRONMENTALLY SENSITIVE LANDS

2-2

This section specifies site design considerations, standards and criteria for the area covered by the Environmentally Sensitive Lands Ordinance (ESLO). It addresses utility location, grading and drainage issues, roadway improvements and site work guidelines for protecting the unique topography, vegetation and geology within the ESL area.

DEPARTMENT RESOURCE INFORMATION

Aviation/Airport	15000 N. Airport Dr.	480-312-2321
Advance Planning Services	7506 E. Indian School Rd.	480-312-7990
Capital Project Management	7447 E. Indian School Rd., Suite 205	480-312-7250
Current Planning	7447 E. Indian School Rd., Suite 105	480-312-7000
Customer Service	7447 E. Indian School Rd., Suite 100	480-312-7800
Downtown Group	4248 N. Craftsman Ct.	480-312-7750
Facilities Management	9191 E. San Salvador Dr.	480-312-5999
Fire & Life Safety/ Inspections	8401 E. Indian School Rd.	480-312-1855
Fire Plan Review	7447 E. Indian School Rd., Suite 125	480-312-7080
Inspections & Land Survey	9191 N. San Salvador Dr.	480-312-5750
Parks Department	7340 Scottsdale Mall	480-312-2915
One Stop Shop/Permit Services	7447 E. Indian School Rd., Suite 100	480-312-2500
Plan Review	7447 E. Indian School Rd., Suite 125	480-312-7080
Records Division	7447 E. Indian School Rd., Suite 100	480-312-2356
Solid Wastewater Management	9191 N. San Salvador Dr.	480-312-5600
Stormwater Management	7447 E. Indian School Rd., Suite 205	480-312-7250
Street Operations	9191 N. San Salvador Dr.	480-312-5626
Transportation	7447 E. Indian School Rd., Suite 205	480-312-7696
Water Resources	9388 E. San Salvador Dr.	480-312-5685
City of Scottsdale	www.scottsdaleaz.gov	

ENVIRONMENTALLY SENSITIVE LANDS

GENERAL INFORMATION

For more information and related resources see www.ScottsdaleAZ.gov/codes/eslo.

A. History/Background

The Environmentally Sensitive Lands Ordinance (ESLO) is a set of zoning regulations adopted by the City Council in 1991 (amended in 2001, 2003 and 2004) to guide development throughout the 134 square miles of desert and mountain areas of northern Scottsdale. In addition to being governed by different versions of the ESL ordinance, some projects and subdivisions are governed by the Hillside Ordinance that was established in 1977.

These areas are generally located north and east of the Central Arizona Project canal (see Figure 2.2-1).

To verify if a parcel is located in the ESL overlay area, and to confirm the landform category, see the Digital Map Center at www.eservices.ScottsdaleAZ.gov/dmc.

To verify which version of the ESL or if the Hillside Ordinance applies to a property or to acquire a copy of the applicable ordinance, contact the Records Department or Planning Division staff.

FIGURE 2.2-1 ESLO AREA / LANDFORMS MAP

B. Purpose

The intent and purpose of ESLO is to identify and protect environmentally sensitive lands in the city and to promote public health and safety by controlling development on these lands. The ordinance requires that a percentage of each property be permanently preserved as Natural Area Open Space and that specific environmental features be protected, including vegetation, washes, mountain ridges and peaks, to assure appropriate development. For specific language concerning the ESLO, see the Zoning Ordinance, Section 6.1010, at www.ScottsdaleAZ.gov/codes/eslo.

C. Goals

The Environmentally Sensitive Lands Ordinance was established to:

1. Protect the public and property from the special hazards that can be found in this desert setting.
2. Encourage the protection of unique and sensitive natural features in the Upper Sonoran Desert, including but not limited to mountains and hills, large rock formations, native landscape, archeological and historical sites and significant washes.
3. Minimize the costs to build and maintain the public infrastructure needed to sustain the use of the land.
4. Encourage development that blends with the character and nature of this special desert setting.

This ordinance is not intended to deny the reasonable use of land, but to guide its use in ways that are sustainable and recognize the unique opportunities this setting provides.

D. Community Benefit

ESLO has a direct impact on the residents of Scottsdale by determining the location and design of residential, commercial, industrial and institutional development in almost two-thirds of the city. Application of ESLO and its predecessor the Hillside Ordinance, has resulted in the preservation of over 9,000 acres of Sonoran Desert open space while protecting residents from potential flooding, erosion and detrimental visual impacts.

2-2.100 UTILITIES

In general, locate and design utility facilities and corridors to minimize degradation of key natural desert features being conserved by ESLO. This section provides guidelines that support the goals of ESLO while also allowing for the reasonable and necessary installation of infrastructure serving the land uses in the area. See Section 6-1.100 and Section 7-1.000 for specific guidelines for water distribution and wastewater collection lines.

Use the following general principles in the design and construction of utility facilities in ESL areas:

1. Install utility corridors that do not result in slope movement or surface subsidence.
2. Prevent increased erosion along utility corridors.
3. Avoid utility crossings that obstruct or constrict washes.
4. Replace vegetation removed for utility construction or maintenance with appropriate native desert plants.
5. Avoid placing utility corridors requiring frequent maintenance through significant riparian, vista or habitat corridors.
6. Place all utility facilities underground or screen them from public view.

WATER DISTRIBUTION LINES 2-2.101

A. Location

To minimize their impact in ESL areas, locate all public water distribution lines within private and public street rights-of-way. Location of water system lines in other areas requires Water Resources Department approval. Water lines that must be located outside of public rights-of-way will require a waterline easement or placement within a tract, where applicable.

Place water lines within the paved street section rights-of-way and locate water meters adjacent to driveways to reduce impact to sensitive ESL landforms.

B. Easements

The minimum width of easements within tracts where lot size is less than 22,000 square feet is 20 feet. Place the entire easement on one side of a property line.

All walls crossing easements must be constructed of wood, wire or removable type fencing. Revegetation or landscaping within the easement must not restrict access.

C. Crossings of Drainage Ways

Water lines should not cross drainage ways unless the crossing is associated with a roadway or driveway. Where crossings are required, locate the water line as close to perpendicular to the flow path of the wash as possible.

D. Water Storage Facilities

1. Locate water storage facilities, such as water tanks and reservoirs, underground and/or in such a way to reduce impacts to the surrounding environment.
2. Paint any above grade tank surface to match surrounding native stone, rock or soil color.
3. Tanks are prohibited on slopes greater than 3:1 unless approved by the Planning and Development Services and Water Resources General Managers or their designees.

WASTEWATER COLLECTION LINES 2-2.102

A. Location

To minimize their impact in ESL areas, locate all public sewer collection lines, including public sewer force mains, within private and public street rights-of-way. Wastewater lines that must be located outside of public rights-of-way require a sewer line easement, or be placed within a tract (where lot size is less than 22,000 square feet).

Sewer lines are allowed to cross the centerline and be located within the paved street section but should not cross the curb line. Locate manholes to keep manhole covers out of the tire paths on the roadway.

B. Easements

The minimum width of easements is 20 feet. Place the entire easement on one side of a property line.

All walls crossing easements must be constructed of wood, wire or removable type fencing. Revegetation or landscaping within the easement must not restrict access.

C. Drainage Ways

Do not locate wastewater lines within the area along drainage ways inundated by a 100-year storm flow, unless specifically approved by Planning and Development Services and Water Resources. Exceptions will be based upon specific design analyses that demonstrate there will be no mixing of flows and no other viable solution is available. If a wastewater line must be located alongside a drainage way, do not clear existing natural riparian vegetation during construction.

Do not cross drainage ways with wastewater lines unless there is no other reasonable alternative alignment. Where possible, place such crossings in association with the location of roadways or driveways and/or perpendicular to the flow path of the drainage way.

2-2.103 PUBLIC LIFT STATIONS

In ESL areas, wastewater pumping stations and pressurized collection systems may be used with Water Resources Department approval.

Protect wastewater pumping stations from inundation by stormwater runoff. Locate such stations so that adequate access is available. Contact the Water Resources Department prior to design of wastewater systems in ESL areas.

2-2.104 INDIVIDUAL SEWAGE EJECTOR SYSTEMS

If sewer service cannot be provided by gravity flow, install an individual ejector pump to transport wastewater from a residence. The private ejector pump shall meet all State and County Health Department and Local Building Code requirements.

The property owner shall maintain private ejector pumps. Each ejector pump shall serve only 1 lot and may not extend past the property line without Water Resources Department approval. Septic system facilities, including leach fields, shall not be located within designated Natural Area Open Space easements.

2-2.105 ON-SITE WASTEWATER TREATMENT

In ESL areas where connection to a public sanitary sewer collector is not available, an individual sewage disposal system will be considered. On-site wastewater disposal systems are subject to authorization by the Water Resources Department prior to approval from the Maricopa County Department of Environmental Services.

Locate such facilities per Maricopa County requirements. Landscape or restore all areas cleared for such facilities to a native desert condition.

2-2.106 MISCELLANEOUS UTILITIES

A. Location

Locate utility lines within private streets and public rights-of-way to minimize impact on sensitive ESL areas. Note that the paved street section is reserved for water and sewer lines, enabling utilities to be placed within the balance of the rights-of-way. Utility locations in the ESL areas will be restricted due to grading limitations.

When circumstances dictate that utility lines be placed outside of a public/private rights-of-way, establish a Public Utility Easement or tract (where lot size is less than 22,000 square feet).

Construction of underground utilities can exert considerable adverse impact to adjacent lands. Therefore, revegetation of all disturbed areas is required after installation and any subsequent maintenance activities.

Avoid locating utility lines in drainage ways and channels whenever possible. When such locations are necessary, construction plans shall specify how to protect the facility from runoff flows.

B. Design of Utility Cabinets

All utility cabinets within ESL areas shall be painted Frazee Western Reserve, or be constructed of self-weathering steel. All lands surrounding utility cabinets that have been disturbed by the installation of the cabinets and related utilities shall be restored to a natural desert condition with native plant materials.

All utility cabinets shall be screened in one of the following ways:

1. Placed in vaults below the ground level.
2. Enclosed within a self-weathered steel enclosure fence that incorporates a three dimensional design.

3. Enclosed within a wall that incorporates native stonework, rammed earth, or exposed aggregate and colored concrete.
4. Berms landscaped with native desert plants and shaped to blend into the natural terrain.
5. Dense landscaping with desert trees and large shrubs.

C. Easements

Do not place Public Utility Easements along the edge of rights-of-way unless required by the specific design for installing utilities in that location. Keep the installation of utilities within the rights-of-way.

Utility easements along side or rear lot lines must be entirely within a lot (that is not split with part on 1 lot and the remaining portion on an adjacent lot) and must be at least 12 feet wide. Utility easements along the front of lots and tracts must be at least 8 feet wide.

DRAINAGE PLANNING 2-2.200

The analysis of hydrologic and hydraulic hazards within this region must consider impacts to all downstream areas. Failure to consider these impacts may result in hazardous diversions of flow, increases in peak discharge flow rates and disruption of the transport equilibrium. Any of these phenomena could increase the flooding and erosion potential to downstream properties and create a liability.

1. Design drainage facilities to maintain the natural runoff and channel characteristics.
2. Do not adversely impact drainage patterns, including the location and configuration of watershed boundaries.
3. Maintain the stability of natural drainage channels, particularly the channel banks, as much as is possible.
4. Do not increase the natural volume of existing channel flows.
5. Maintain the natural sedimentation characteristics of an existing drainage way.
6. Do not restrict or obstruct natural habitat condition or movement with improvements to existing channels.
7. Maintain the natural vegetation density and diversity of existing channels.
8. Preserve the viewshed characteristics of large washes and vista corridors.
9. Design detention basins to blend into the natural contours and undulations of the site and the local natural terrain.
10. Locate detention basins within a subdivision in separate tracts, not on individual lots. Exceptions may be made by the Zoning Administrator or designee if the following conditions are met:
    a. The basins will be maintained by a property owners association or its equivalent;
    b. Appropriately sized drainage and maintenance access easements are provided; and
    c. The basin is accessible from a street.

IMPROVEMENTS TO NATURAL WASHES 2-2.201

Design any improvements to natural washes to compliment the natural function and appearance of the site. It is preferable to leave the washes in an undisturbed state and use sufficient building setbacks to preclude the need for artificial bank protection.

Avoid any disruption of the natural geometry and bed-profile of washes in ESL to the greatest extent feasible. This includes any unnatural diversion of water into or from these washes. Such diversion could upset the system equilibrium and induce accelerated bank erosion and long-term degradation of the channel bed.

A. Incised Natural Washes

Virtually all washes in the Hillside landform and many of the washes in the Upper Desert landform are well incised. As such, they generally have capacity equal to or exceeding that necessary to contain the projected storm flows.

The steep slopes in the Hillside landform and the relatively steep slopes in the Upper Desert landform promote very high velocity flows. This creates a potential for bank erosion and bed scour.

Due to bedrock outcrops and relatively large diameter sediment particles found in these washes, bed scour may be arrested by channel armoring, particularly in association with road crossings. This phenomenon will be evaluated on a case-by-case basis.

Avoid the use of structures that might form an artificial grade control. Consider clear span bridges for crossings where multiple barrel culverts impede flow due to the amount of sediment transport or debris that is likely during major storm events.

Include the entire top-of-bank to top-of-bank dimension that exists naturally in addition to the area normally required to contain the 100-year storm within drainage easements along incised washes.

B. Over-bank Flow and Braided Washes

In portions of the Upper Desert landform and across most of the Lower Desert landform, washes do not have natural channels with adequate capacity to contain major storm flows. In major storms, flows will fill the visible channel, inundate adjacent lands and divert into other braided channel courses and/or become sheet flow not confined to any particular drainage way.

Modifying or restructuring the natural drainage way may be needed to protect structures and public infrastructure. To maintain control of flood flows along such drainage ways, provide reinforced channel banks by using reinforced embankments, flood walls, raised pads for buildings or other such methods.

Reconstructing or relocating a natural channel will only be considered when there is no other reasonable approach available. Relocated wash channels shall be designed and constructed in a manner that restores the wash to a natural condition with revegetation of native desert plants typical to local washes and contours that blend into the natural topography. Placing channels into underground drain pipes shall not be used unless there is no other possible solution for managing the storm flows. Any modification of washes that have a 100-year flow of 50 cfs or greater will require a modification approved by the Zoning Administrator as described in ESLO, see www.ScottsdaleAZ.gov/codes/eslo.

C. Residential Development

1. Design residential street systems to avoid diverting or blocking historical drainage patterns.
2. Contour and align streets so water is directed into the historical drainage course on the site.
3. During the construction phase of residential development, minimize erosion on disturbed ground surfaces (utility alignments, street cuts, etc.).
4. Disperse on-site flows from improved portions of residential properties to minimize off-site erosion or direct flows into a defined drainage course to minimize erosion and maintain flow characteristics of the drainage way.

D. Utility Installations

1. Complete the installation of underground utilities to avoid conditions that could lead to the alteration of historical drainage patterns.
2. Keep utility crossings of drainage ways to the minimum extent feasible.

3. Wherever possible, place utility crossings in conjunction with road crossings and diagonal to the flow path of the drainage way.
4. Place utility crossings in natural or man-made channels below the maximum expected scour depth of such channels, in addition to the usual depth of cover.
5. Do not place utility corridors alongside drainage ways within the area that could be inundated in a 100-year storm flow or through the native riparian vegetation along the drainage way.

E. Culverts and Grade Crossings

1. Account for potential clogging due to sediment and debris in the design of culvert capacities.
2. Construct headwalls and wingwalls at culvert entrances. In addition, an erosion resistant apron may be necessary when analysis indicates the need. Consult the Federal Highway Administration's manuals that address the design of such facilities.
3. Consider the possibility of flow over the roadway in the design of culverted roadway crossings and provide erosion resistant bank protection on both the upstream and downstream side-slopes as needed.
4. Where "wet" crossings of washes are approved (by Planning and Development Services Department and Community Facilities General Managers or their designees), a concrete road surface may be necessary for that portion of the street inundated during a 25-year storm. Concrete cutoff walls shall be designed and constructed on both the upstream and downstream sides of the roadway. All "wet" crossings shall be posted.

ROADWAY

2-2.300

This section focuses on minimum design guidelines for roadway improvements within the ESL areas.

Alternative design solutions shall be considered if appropriate technical analysis and documentation can demonstrate compatibility with the environmental management objectives for ESL areas.

Roadways can impact environmentally sensitive lands not only during construction, but also over the life of their use. Determine ways to mitigate such impacts as obstructing natural drainage channels, introducing road surface pollutants and disrupting habitat conditions during the planning stages of the project proposal. This section provides guidance for ways to effectively mitigate some of these impacts.

Some of the goals to meet in the design and construction of roads in the ESL area are:

1. No slope movement or surface subsidence from construction shall occur outside of the approved construction limits for the road project.
2. Do not obstruct the capacity and function of drainage channels.
3. Avoid creating artificial sub-basins with road construction and layouts unless specifically approved as a part of a subdivision plat.
4. Maintain water quality by avoiding introducing surface run-off pollutants from road surfaces.
5. Maintain connections between significant riparian habitats or vista corridors with the roadway layout.
6. Replace native vegetation removed for roadway construction to the greatest extent possible.

2-2.301 GENERAL DESIGN FACTORS

In ESL areas, the location of a roadway (horizontally, vertically and in cross-section) should be compatible with the surrounding environment. The following factors should be considered in addition to design specifications for ESL roadways listed in Section 5-3.000 and Appendix 5-3B.

A. Location

Locate the roadway to minimize impacts to the natural environment, see Figure 2.2-2.

B. Alignment and Profile

Follow the topography of the area with the roadway design to minimize excavation and embankment scars. Curvilinear horizontal alignments and gently rolling profiles consistent with the natural topography minimize unnecessary disturbance to the existing environment.

C. Natural Features

Avoid significant natural features, such as stands of vegetation and rock outcroppings, when suitable alternative alignments are available.

D. Structures

Consider impacts on vegetation, topography, wildlife movements and the viewshed in the design and location of roadway structures.

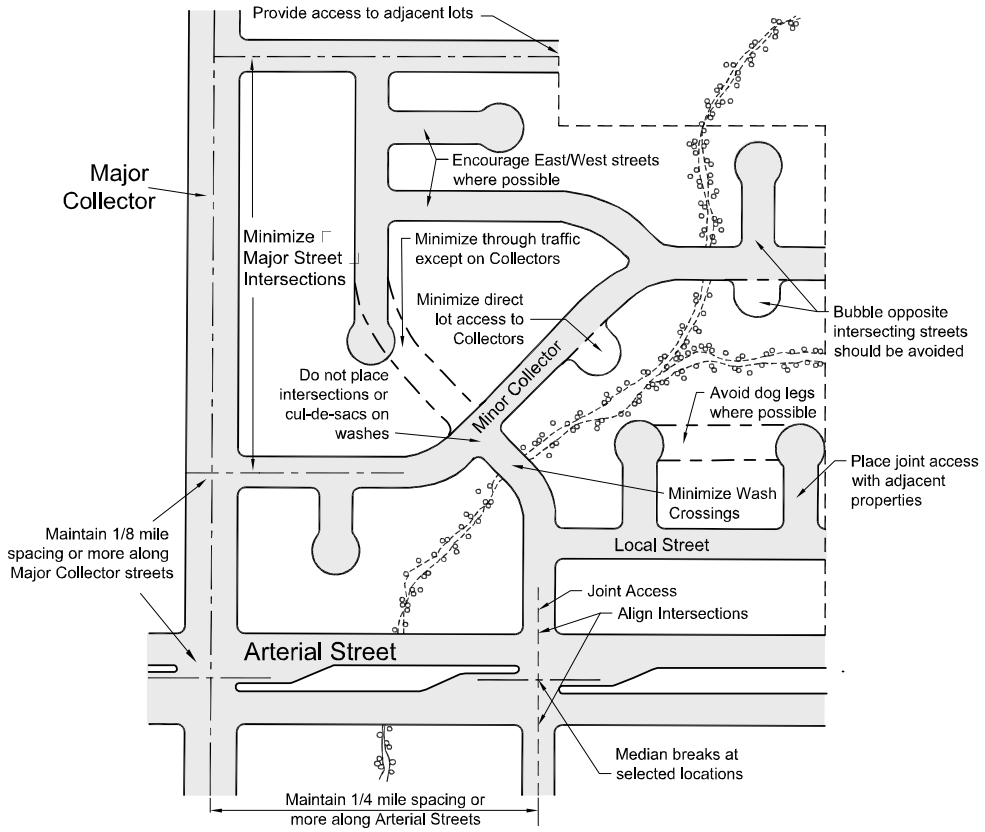


FIGURE 2.2-2 SUBDIVISION STREET PLANNING

2-2.302 SPECIAL CONSIDERATIONS FOR ROAD CROSS-SECTIONS

A. Street Rights-of-way

Additional rights-of-way may be required for cut or fill slopes, bike paths, horse trails, traffic control devices, fire hydrants or other public facilities located adjacent to streets. Where cut or

fill slopes extend beyond the rights-of-way, a permanent easement may be provided in lieu of increasing the width of the rights-of-way.

B. Shoulders

All roads within ESL areas should have improved shoulders. Construct shoulders with clean native topsoil that is free from roots, debris, heavy clay and large stones or rocks. Compact all shoulders to a minimum of 90 percent of maximum density.

C. Cross Slopes

In ESL areas it may be necessary to use roadway cross slopes to control drainage. The slope of shoulders should match the pavement cross slope.

D. Utility Locations

In general, place utilities within the improved area of the pavements and adjacent shoulders. If it is necessary to place utilities outside the bounds in a Public Utility Easement (PUE) of the road improvements, minimize the amount of grading, loss of native desert vegetation and impacts to the natural drainage character.

ROAD GRADING 2-2.303

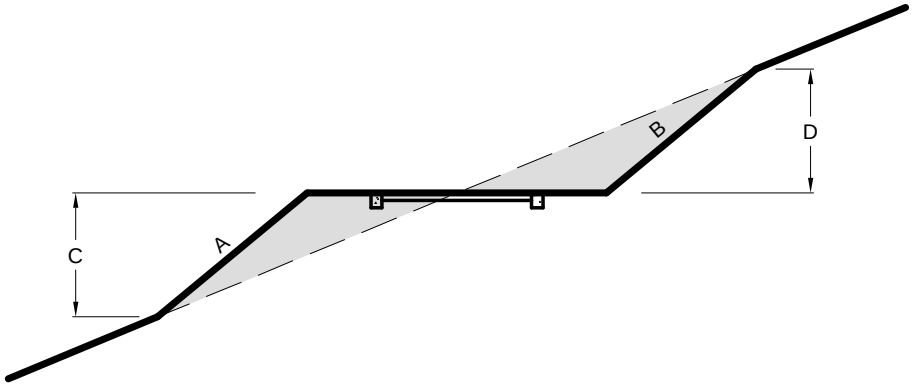
This section establishes criteria for cut and fill slopes, slope stabilization, erosion controls and restoration of scarred areas due to roadway grading. All roadway improvement plans and street design must be done under the supervision of a registered Civil Engineer.

A. Side Slopes

1. Consider stability, maintenance and appearance of cut and fill slopes during construction. Use geotechnical reports for safe slope gradients.
2. The maximum slope gradient for fill slopes within the rights-of-way is 4:1 (horizontal to vertical) and for cut slopes is 3:1, unless otherwise approved by the Planning and Development Services and Transportation General Managers or their designees.
3. In areas where the engineer anticipates unstable soils or potential erosion, flatter slopes or specific mitigation techniques may be accepted. Design measures to mitigate unstable slope conditions and potential erosion problems must be identified in the geotechnical report.
4. Steeper slopes are allowable provided that geotechnical conditions are properly analyzed and a stable embankment is detailed on the construction plans. Fill slopes steeper than 4:1 require the use of guardrails.
5. The maximum height of cuts and fills for roadway improvements is 8 feet in the Upper and Lower Desert Landforms and 12 feet in the Hillside Landform, as measured vertically from the pavement surface to the natural grade at the toe or top of the constructed slope, see Figure 2.2-3.
6. When retaining walls are used, the exposed height should be the height of the retaining wall plus the vertical height of the retaining slope. In addition, these maximum heights will limit length as shown below.

Slope Height	Maximum Length
0-4 feet	None
6 feet	375 feet
8 feet	300 feet
10 feet	225 feet
12 feet	150 feet

7. Maintain an average height of 6 feet in the Upper and Lower Desert Landform and 8 feet in the Hillside Landform areas for any continuous slope. Determine the average slope height by using individual slope heights measured at 50-foot intervals.
8. Where there is a combination of cut and fill slopes at any 1 station along the roadway, do not exceed a combined slope height of 12 feet in Upper and Lower Desert areas and 16 feet in Hillside areas.



A: 4:1 SLOPE (3:1 WITH GUARD RAILS)

B: 2:1 SLOPE

C: 12' MAX. / 8' AVERAGE FOR EACH 50' LENGTH

D: 12' MAX. / 8' AVERAGE FOR EACH 50' LENGTH

C+D: 16' MAX.

FIGURE 2.2-3 HILLSIDE LANDFORM ROAD CUTS

9. Heights exceeding the above criteria may be allowed by the Development Review Board or Zoning Administrator provided the applicant demonstrates that objectives of ESLO are met.
10. Round all slopes to blend into the existing terrain to produce a contoured transition from the slope face to the natural ground.
11. Planning and Development Services staff may require mitigation techniques for cuts and fills greater than 8 feet be presented to the Development Review Board for approval. Slopes and fills must be engineered in accordance with the recommendations of the geotechnical report.

B. Retaining Walls

Retaining walls may be used to reduce the horizontal and vertical distances required to construct cut and fill slopes.

1. All retaining walls, regardless of height, shall comply with the city building code and also conform to the following requirements. The heights and types of retaining walls may be subject to Development Review Board approval as determined by the Planning and Development Services General Manager or designee, based upon the visibility and magnitude of the proposed structure.
2. Acceptable types of retaining walls include stone gravity, structural masonry and reinforced concrete. Do not use other types, such as metal cribbing walls and rock gabion walls, unless approved by the city.
3. Consider terraced walls in place of 1 wall for instances requiring retaining walls in excess of 6 feet. The minimum dimension of the landscaped level located between the lower and upper terrace walls shall be at least equal to the visible height of the lower wall, but not less than 4 feet. See Figure 2.2-8.
4. In general, match the finish material and color of retaining walls with the surrounding natural stone, rock or soil color.

5. Plans for retaining walls greater in height than 3 feet must be signed and sealed by a registered Civil Engineer or Structural Engineer in the State of Arizona.

C. Drainage Controls

1. Design all drainage facilities to carry surface waters to their historical outfall.
2. Do not pond water above cut or fill slopes.
3. Construct and maintain erosion controls (temporary or permanent) to prevent erosion of all slopes and graded areas.
4. Provide surface drainage interceptors at the top of cut and fill slopes where surface runoff will create erosion problems.
5. Subsurface drainage facilities may be required for stability and protection of affected areas due to ground water seepage.

D. Slope Restoration

Restoration and stabilization of all exposed slopes created by grading shall be completed within 90 calendar days after rough grading of the roadway. Restoration shall consist of revegetation with native species of a type and mix consistent with local natural conditions and/or artificial weathering of rock faces. A revegetation plan including plant species, locations, sizes and methods of transplanting must be submitted for review and approval.

STREET INTERSECTIONS 2-2.304

Do not place street intersections within the alignment and floodplain of major or minor washes, on or within boulder clusters or other such sensitive environmental features.

STREET LIGHTING 2-2.305

Do not use street lighting within the Hillside landform, see Section 2-1.1002.

A. In the Upper Desert Landform

Where the average residential density is less than 1.5 dwellings per acre or the surrounding land use is some form of open space, use street lighting only at intersections with major and minor collector streets. Where the residential density is higher or there are non-residential uses, provide street lighting at all intersections. Finish street lighting equipment to match the surrounding environment.

B. In the Lower Desert Landform

Where the average residential density is less than 1.5 dwellings per acre or the surrounding land use is some form of open space, use street lighting only at intersections with collector or larger streets. In all other areas use street lighting based upon the latest IES recommended standards that are based upon the land use and context of the street, see Section 2-1.1002.

SIDEWALKS 2-2.306

A. In the Hillside Landform

Sidewalks are not required within the Hillside Landform.

B. In the Upper Desert Landform

1. Sidewalks are not be required where the residential density is less than 1.5 dwellings per acre or the adjacent land use is an open space area of at least 40 acres, except along arterial or larger streets.
2. Sidewalks are required in all other areas.
3. Sidewalks on one side only of a street may be permitted by the Planning and Development Services General Manager or designee if the street is accessed only on one side, the street is a cul-de-sac less than 400 feet in length or the local land slopes generally average 10 percent or more.

C. In the Lower Desert Landform

In areas where the average residential density is less than 1.5 dwellings per acre sidewalks are required along major collector or larger streets. Sidewalks are required in all other locations.

D. Other Considerations

Shoulders may be used as pedestrian ways provided safety is not compromised. In these cases, wider shoulders may be used in place of a concrete sidewalk.

2-2.307 BIKEWAYS

Scottsdale policy requires bikeways on all arterial and major collector roads, see Section 5-7.000. However, this requirement is waived in the Hillside landform.

2-2.308 DRIVEWAYS

A. Residential Developments

In general, limit driveways in ESL areas to 1 per residence. However, additional and circular driveways will be permitted provided they do not adversely disrupt the surrounding natural desert environment.

1. The minimum driveway width for driveways less than 200 feet long is:
   a. 16 feet in the Upper and Lower Desert Landforms and
   b. 12 feet for driveways in the Hillside Landform.
2. The maximum linear grade of a driveway shall be 18 percent and the average grade for the length of the driveway shall be 12 percent.
3. To minimize crossings of drainage ways, shorten the length of cul-de-sacs in steeper terrain and protect boulder clusters or formations, a single driveway may serve more than one residence but not more than four residences provided that:
   a. The maximum length is 400 feet, unless specifically approved by the Planning and Development Services General Manager or designee,
   b. The minimum width is 24 feet in the Upper and Lower Desert Landform and
   c. The minimum width is 18 feet in the Hillside Landform.
4. Driveways greater in length than 150 feet or with grades steeper than 12 percent in Hillside areas are subject to prior approval by the Planning and Development Services General Manager or designee, as well as from the city's Fire Department. Design such driveways based upon the following criteria and Figure 2.2-4. Also see the Fire Code at www.ScottsdaleAZ.gov/codes:
   a. Where the driveway gradient is 0 to 12 percent:
      - The driveway surface shall be all-weather,
      - The minimum driveway width shall be 16 feet if it is longer than 200 feet and
      - A turn-around is required if the driveway length exceeds 200 feet.
   b. Where the driveway gradient is from 12.1 to 15 percent:
      - The driveway shall have a hard surface,
      - A turn-around is required if the driveway length exceeds 200 feet,
      - The minimum width shall be 16 feet if the driveway is longer than 200 feet (a 12 feet wide hard surface with 2 foot wide compacted shoulders on each side may be used) and,
      - A "4-head" sprinkler system is required where the hose lay exceeds 200 feet.

c. Where the driveway gradient is from 15.1 to 18 percent:
   - The driveway shall have a hard surface,
   - A turn-around is required if the length of the driveway exceeds 200 feet,
   - The minimum width shall be 16 feet if the driveway is longer than 200 feet (a 12 feet wide hard surface with 2 foot wide compacted shoulders on each side may be used) and,
   - A “4-head” sprinkler system is required.

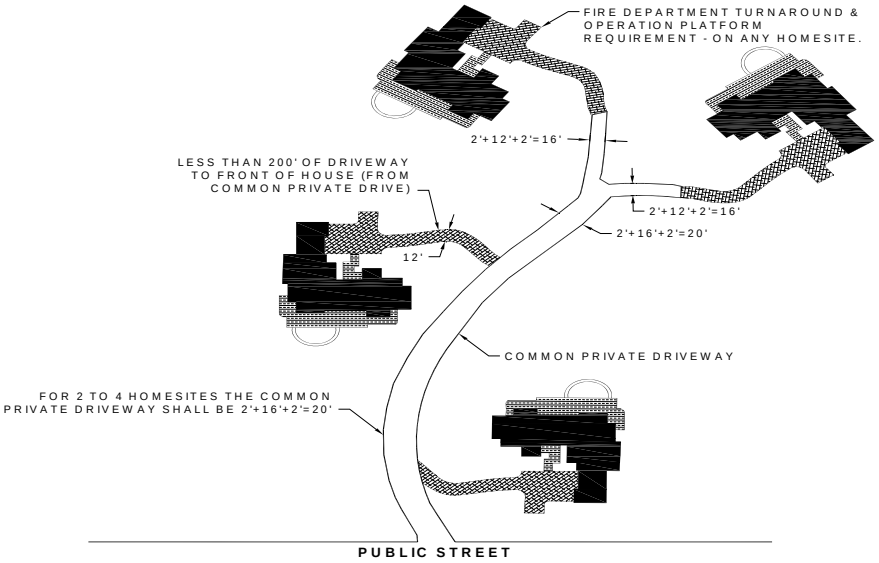
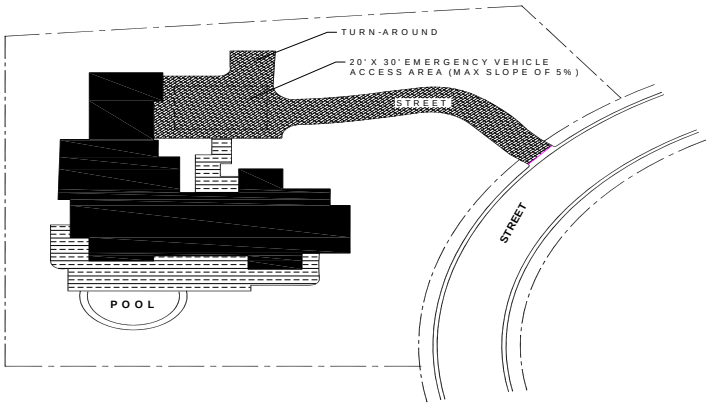


FIGURE 2.2-4 PRIVATE DRIVEWAY DESIGN FOR EMERGENCY ACCESS

5. Design driveways and parking areas for adequate vehicle maneuvering and turn around for a Single Unit Truck (SU) as defined by AASHTO.
6. Provide a fire Operational Platform adjacent to the main building whenever the driveway exceeds 12 percent in grade or is longer than 200 feet. The minimum dimensions for this platform are 20 by 30 feet and the maximum cross slope is 5 percent, see Figure 2.2-5.



OPERATIONAL PLATFORM

A 20' X 30' EMERGENCY VEHICLE ACCESS (MAX 5% SLOPE) AREA SHALL BE PROVIDED ON ALL LOTS IN WHICH THE ADJACENT STREET OR DRIVEWAY GRADES ARE GREATER THAN A 12% SLOPE

FIGURE 2.2-5 OPERATIONAL PLATFORM FOR FIRE ACCESS

7. Where required, the turn-around shall be either a circular drive with a minimum radius of 40 feet 6 inches or a T-type hammer head with 16 feet by 76 feet dimensions, see Figure 2.1-2.
8. A turn-out is required along extended driveways at 300 feet intervals. The turn-out shall be at least 20 feet wide for a distance of at least 45 feet, see Figure 2.2-6.

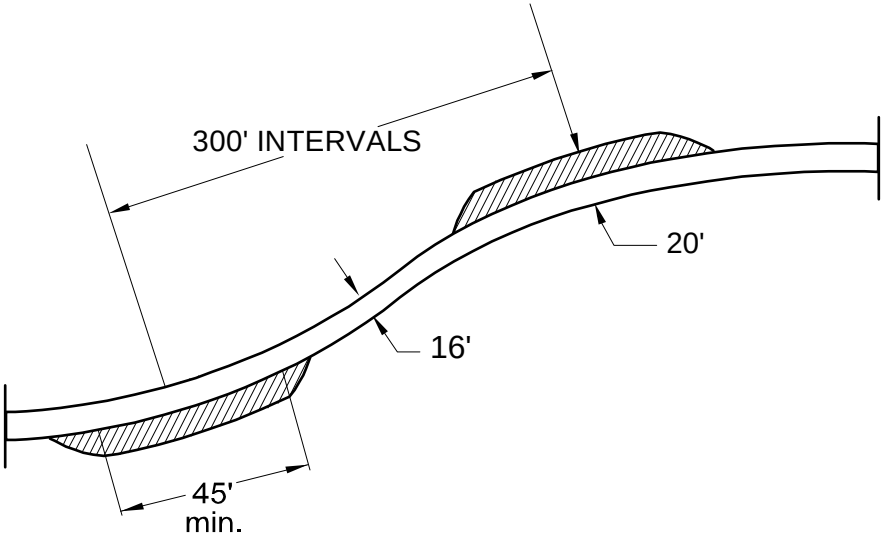


FIGURE 2.2-6 FIRE TURN-OUT FOR EXTENDED DRIVEWAYS

B. Locations

Locate driveways in the Hillside Landform a minimum of 100 feet away from the rights-of-way line of an intersecting street and a minimum of 25 feet from a side property line. In special cases the Planning & Development Services General Manager or designee may make exceptions to this standard. See Figure 2.2-7.

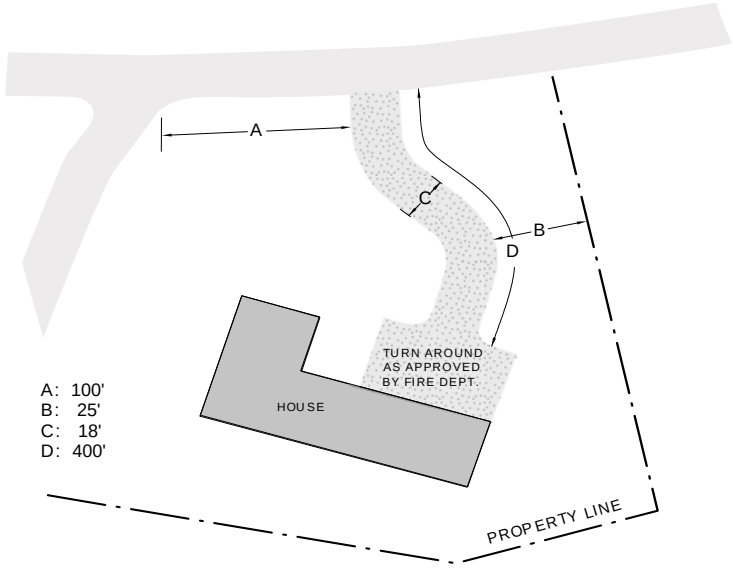


FIGURE 2.2-7 DRIVEWAYS ON HILLSIDE LANDFORM

C. Surfacing

Pave driveway aprons with asphalt, Portland Cement concrete or concrete pavers. Other types of stabilized surfaces, such as cemented native granite or approved equal, may be allowed where it can be demonstrated that there would be no erosion off of the surface and the construction will allow for the loading of emergency vehicles. Where sidewalks are used, design and build the driveway apron according to MAG standards.

SITE WORK 2-2.400

The intent of these guidelines is to promote creative design and innovative methods for site development within the ESL overlay area. Modified grading guidelines may be allowed where it can be demonstrated that they achieve the goals and purposes of ESLO. Grading includes initial clearing, grubbing, excavating and placement of fill associated with any form of development.

This section establishes guidelines for grading which are intended to:

- Regulate the development of potentially hazardous terrain;
- Preserve the general visual character of graded sites; and
- Preserve native vegetation and wildlife habitat.

Consider the following key elements during the design and implementation of all grading activities.

1. Conserve the natural environmental features and functions of the site;
2. Design and construct grading to be compatible with the surrounding natural desert land;
3. Use construction techniques that result in no slope movement or subsidence and the stabilization of hillsides, slopes or other areas subject to erosion or mass movement,
4. Preserve the natural capacity of drainage courses and protect natural drainage ways, including the native vegetation associated with them.

5. Control dust pollution and surface water runoff and related erosion during construction operations.
6. Maintain the stability of underlying geological conditions wherever development is proposed, unless specific mitigation measures are proposed to assure safe development of the land.
7. Do not alter drainage basin boundaries.
8. Do not create any obstructions within any drainage channels.
9. Do not increase the movement of sediment in volume or velocity as a result of any modifications to natural channels.
10. Do not obstruct scenic, riparian or vista corridors. Preserve or restore them to a natural desert condition.
11. Minimize topsoil and vegetation removal.
12. Design and finish graded cuts and fills that are visible from adjacent properties in a manner that matches the surrounding native soils and rocks.
13. Leave significant natural boulders and rock formations intact and minimize any damage.

2-2.401 APPLICABLE PROJECTS

A grading permit is required of all development projects, private or public, for ESL areas, except as exempted herein. Categories for general grading that require a grading permit include but are not limited to the following:

1. Residential development for a single lot of any size.
2. Residential or mixed-use development that requires a subdivision plat or development plan.
3. All other nonresidential types of development.
4. The clearing, brushing or grubbing of any area where grading for any purpose is to be done.
5. Temporary off-site stockpiling of fill material.
6. Driveways and parking areas where the graded area will be greater than 500 square feet.
7. Recreational facilities such as golf courses, parks and ball fields.
8. Educational institutions and schools (public or private).
9. Public service facilities such as fire stations, police stations and libraries.
10. Public infrastructure facilities such as water storage tanks, flood control structures and wastewater treatment facilities.

2-2.402 EXEMPTIONS

The following activities are not required to have a grading permit:

1. Resurfacing or maintenance of an existing paved surface.
2. Excavation below finished grade when the excavation is for the construction of a basement, foundation, wall or swimming pool if authorized by a building or zoning construction permit.
3. Exploratory excavation performed under the direction of a registered soil engineer or geologist, provided all excavation is properly backfilled.
4. Archaeological exploration of an archaeological site recognized by the State.
5. Removal of native vegetation when being performed under an existing de-vegetation permit.
6. Underground utility installations under a graded or paved roadway surface.

7. Grading for maintenance purposes of an existing private road, access or driveway, provided that it existed prior to the adoption of ESLO or that it was established in conformance with this section.
8. Land uses which are exempt under statutory regulations.

GEOTECHNICAL INVESTIGATIONS 2-2.403

Most grading activities in ESL areas require some level of geotechnical investigation and analysis, the level of which shall be left to the discretion of the city and the engineer based upon the known conditions on the site. Such studies are required where there are known or likely occurrences of unstable slopes, exposed or shallow bedrock, on-site materials that may bear radon elements, soils with high shrink/swell potential or the presence of caliche hardpan. Exceptions to this requirement may include the construction at single-family residences where the improvements are not occupied structures or are not attached to any rock materials.

MAXIMUM GRADING AREA 2-2.404

1. Grading is allowed to occur only within an approved construction envelope.
2. The maximum grading area for any parcel is based on Natural Area Open Space (NAOS) requirements. Grading is not permitted within designated undisturbed NAOS areas. When utility trenches cannot be reasonably provided without crossing designated natural or open space areas, such trenching activities may be allowed provided all disturbed areas are revegetated to a natural condition.
3. The actual graded area for any parcel must be less than or equal to the developable area of a parcel as specified in ESLO. If a conflict arises, the terms and conditions of the ESLO shall govern.
4. Site grading that impacts special features is prohibited; these areas are identified on ESLO Special Features Map or the High Priority NAOS Locations map, see www.ScottsdaleAZ.gov/codes/eslo. Plan site work to avoid cutting off significant riparian and habitat corridors. Buffer areas should be provided around developed sites. The design of final grading must consider view shed impacts.
5. Grading is prohibited where geologic hazards are identified, unless a specific exemption to this guideline has been approved by the Planning and Development Services General Manager or designee, as the result of the recommendation of the geotechnical investigation. Such areas may include but are not limited to boulder rolling, rockfalls, slope collapse and talus slopes.

The Planning & Development Services General Manager or designee may approve modifications to these grading limits for special conditions such as unique soil or geologic conditions.

GRADING DESIGN GUIDELINES 2-2.405

A. Cut and Fill Slopes

1. Maximum Slope Gradient

a. Use geotechnical reports to provide recommendations for safe slope gradients for exposed cuts or fill materials. Unstable slope conditions and potential erosion problems must also be identified within the geotechnical report as well as adequate design measures to mitigate these conditions.

b. Typically, safe slope gradients in ESL areas range between 4:1 to 2:1 (horizontal: vertical). For exposed cut slopes the structural nature and strike and dip of the native soil or rock material being cut into governs the appropriate slope gradient. For exposed fill slopes the appropriate slope is based on the natural angle of repose based upon the structure of the fill material.

c. Where applicable, incorporate revegetation techniques within the slope design. In general, the steepest slope for revegetation or landscaping is 3:1.

d. Conform slopes adjacent to roadways to the requirements in Section 2-2.303.

2. Heights

a. In general, do not exceed 8 feet for the height of cuts and fills in ESL areas, as measured vertically from the finished grade to the natural grade.

b. Exceptions to this guideline are subject to the approval by a Planning and Development Services General Manager's designee where a cut surface will be entirely hidden by a building.

c. Planning and Development Services General Manager's designee may allow cut and fill heights greater than 8 feet where it can be demonstrated that ESLO objectives are met.

d. Planning and Development Services General Manager's designee may require cuts and fills greater than 8 feet to be subject to Development Review Board approval.

e. Any cut or fill on a property subject to the ESL regulations with a vertical dimension greater than 8 feet shall require a specific Staff Approval. For properties subject to the Hillside Ordinance, a specific Staff Approval shall be required where there is an exposed fill greater than 4 feet in vertical dimension or cuts greater than 8 feet in vertical dimension.

3. Slope Shaping

a. Round all man-made slopes at the edges to blend into the existing terrain adjacent to the new slope to produce a contoured transition from the slope face to the natural ground.

b. Incorporate undulating slopes in all man-made slopes greater than 500 square feet in area to reflect the natural undulations occurring in the adjacent desert.

4. Slope Revegetation

a. Restore all exposed slopes created by grading to a natural condition and stabilize them to minimize erosion and slope collapse or wasting.

b. Restoration shall include revegetation with native species as found on similar natural slopes in the area.

c. Treat cuts into rock or caliche with artificial weathering techniques.

d. Irrigate all revegetated areas for at least 3 years or until the vegetation has become established.

e. Do not use imported decomposed-granite soil-cover/mulch in revegetated areas or in any place within NAOS areas.

5. Setbacks

Building walls and other structures shall be set back from the top/toe of slopes far enough to assure stability and prevent damage from erosion. The engineer/architect shall specify the setback on the plans. Larger setbacks may be enforced in order to meet the intent of ESLO.

6. Drainage Considerations

a. Construct and maintain erosion controls (temporary or permanent) to prevent erosion of all slopes and graded areas.

b. Design building sites to carry surface waters away from buildings at a minimum grade of 2 percent for a minimum distance of 10 feet from any buildings.

c. Provide surface drainage interceptors at the top of all cut and fill slopes where surface runoff will create erosion problems.

d. Do not pond water above cut or fill slopes.

e. Subsurface drainage facilities may be required for stability and protection of affected areas due to ground water seepage.

7. Building Height

Establish all building pads and finish floor elevations so that the maximum allowable building height does not exceed the building height outline limit as specified in ESLO.

B. Terraces and Retaining Walls

The use of retaining walls is an effective means to minimize grading, reduce the height of cut or fill slopes and stabilize slopes. The heights and types of retaining walls may be subject to Development Review Board approval, as determined by a Project Coordination Manager. All retaining walls, regardless of height, shall comply with the city Building Code and also conform to the following requirements.

1. Terraces

a. Terracing may be employed where deemed necessary by the engineer or where desired in order to reduce the amount of area to be graded.

b. In order to minimize the impacts of the grading on a project, terracing may be required by Planning and Development Services staff.

c. In general, the minimum width of terraces shall be at least 4 feet wide or equal to the height of the lower retaining wall if it is taller than 4 feet, in order to allow for the future maintenance of the retaining wall and allow for landscaping materials that will screen the visibility of the walls.

2. Types of Walls

a. Acceptable types of retaining walls are stone or concrete gravity, structural masonry and reinforced concrete.

b. Other types such as metal cribbing walls or rock gabion walls are not permitted unless approved by Planning and Development Services General Manager or designee or the Development Review Board.

c. The finish material and color of retaining walls should match the surrounding natural desert stone, rock or soil color.

3. Alignments of Walls

a. Use undulating or angular alignments for all terrace walls greater than 50 feet in length.

4. Heights

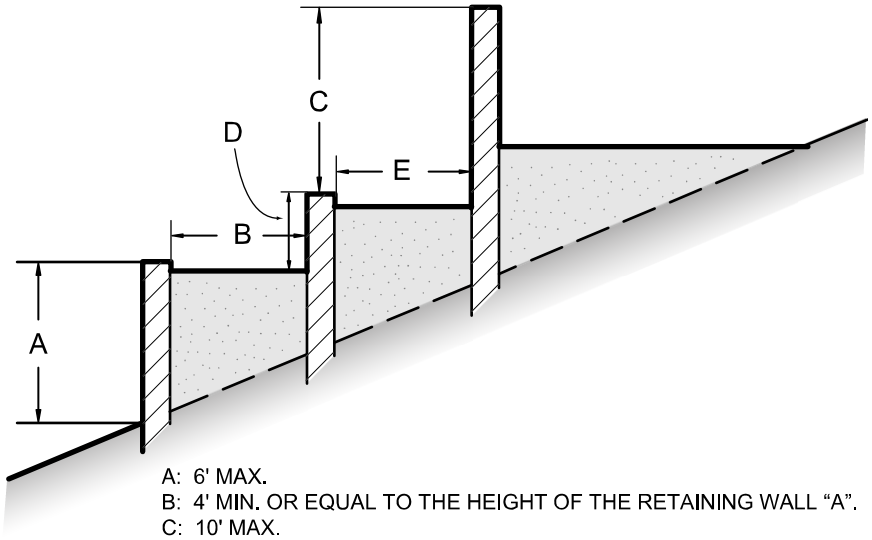
a. Do not exceed 6 feet for the exposed height of any single retaining wall in ESL areas, as measured vertically from the inside ground level to the outside ground level as shown in Figure 2.2-8.

b. Use terracing where the vertical height to be contained by the retaining wall exceeds 6 feet of fill material or 8 feet of cut, as shown in Figure 2.2-8.

c. Meet structural stability for overturning, slope sliding and drainage considerations for all walls, regardless of height.

d. The maximum face height of a wall that combines a retaining wall and a solid wall shall be 10 feet. The maximum height of the wall above the retaining wall structure as measured from the retained ground level shall meet the normal zoning wall height standard.

e. The maximum face height of a combination of retaining wall and view fence shall be 12 feet. The maximum height of the wall/view fence above the retaining wall shall meet the usual zoning wall height standard.



A: 6' MAX.
B: 4' MIN. OR EQUAL TO THE HEIGHT OF THE RETAINING WALL “A”.
C: 10' MAX.
D: 6' MAX.
E: 4' MIN OR EQUAL TO THE HEIGHT OF THE RETAINING WALL “D”.

FIGURE 2.2-8 RETAINING WALL DIMENSIONS

C. Site Restoration

1. Required Restoration

Revegetate all disturbed areas. All revegetation shall be done with native species in a comparable density and pattern to that which exists upon the undisturbed adjacent areas unless otherwise approved by staff.

2. Slope Protection

On slopes where erosion may be a problem or the slope materials and/or gradient will not readily support soil binding plants, hold the plant material in place by anchored straw mulch, erosion control fabric or an equivalent material.

3. Plant Materials for Slope Restoration

Where the slope restoration includes the use of revegetation of native desert plants, use those plants that occupy similar natural desert slopes in steepness and orientation in the area.

4. Timing of Slope Restoration

Complete all site restoration for any type of development within 90 days of the completion of work or prior to the issuance of a certificate of occupancy, whichever occurs first.

D. Construction of Fills or Embankments

1. Fill Materials

Comply with the design engineer's recommendations for fill material and preparation of areas that are to receive fill. At a minimum, fill material should not contain any organic material, building materials, plastics, metals, hazardous wastes or refuse debris. Do not bury or place rocks, pieces of concrete or asphalt pavement or other irreducible material with a maximum dimension greater than 8 inches in any fill unless their placement has been specified and inspected by the engineer.

Place and compact all fills in accordance with the engineer's specifications.

2. Expansive Soils

The design engineer must insure that there will be no adverse impacts created by expansive soils. Should the engineer's investigation reveal the presence of expansive soils, the grading plans and specifications shall address how these soils will be handled.

3. Excess Material

Haul excess material to an appropriate off-site disposal area that has been approved by the Planning and Development Services Department. The disposal area must be outside of any Hillside landform area. An off-site hauling permit may be required from the city.

4. Dust Control

Apply approved dust control methods during all grading and until revegetation or site restoration is complete. Prior to the start of grading activities, a dust control permit must be obtained from the Maricopa County Health Department.

SITE DESIGN GUIDELINES 2-2.500

Consider the following key elements in site design for any proposed development for the protection of the unique visual quality and the native desert environment in the ESL area:

1. Preserve view corridors along significant public transportation routes.
2. Minimize scarring of the natural topography.
3. Preserve existing vegetation as much as is feasible.
4. Preserve drainage ways as view and wildlife corridors, thus providing open space connections throughout proposed development areas.
5. Protect significant visual features such as peaks, ridge lines, rock outcrops, boulder fields and significant stands of vegetation wherever feasible.

GENERAL DESIGN GUIDELINES 2-2.501

The following guidelines apply to all areas that are visible from public viewpoints or nearby development, which shall be designed and sited to blend into the landscape.

A. Site Development - Buildings, Structures, Walls and Fences

1. Blend all exterior finish surfaces with the color and texture of the surrounding stone, rock or soil color.
2. Do not use reflective building materials. Recessed window and entry openings and deeper roof overhangs are encouraged.
3. Preserve the ridge line silhouette of significant topographic features by locating all improvements below the ridge line and using a finished height that does not protrude into the silhouette as viewed from nearby public roads.
4. Match and blend buildings and surrounding improvements with the form of the landscape. Use stepped floor elevations to avoid massive building forms and wall surfaces that contrast with the surrounding terrain.
5. Use exterior lighting fixtures that are recessed or shielded so that the light source is not visible from a public viewpoint or other development in the immediate area. Direct building mounted lighting downward.
6. Screen all exterior mechanical equipment with material complementary to both the structure and the surrounding environment.

B. Walls and Fences

1. Perimeter Walls

a. In general, perimeter walls are not a preferred approach to providing privacy and minimizing the impacts of nearby roads. Consider using walls around individual building envelopes, mounding that blends into the terrain and other such treatments. If perimeter walls are used, set them back 25 feet from a perimeter street rights-of-way or a property line.

b. Use undulating, notched or similar non-linear alignments for perimeter walls. They should move around significant natural desert vegetation leaving substantial room for these plants to survive (3 feet out from the canopy of desert trees and at least half the height of saguaros).

c. Use designs and materials for perimeter walls that reflect the form, materials, texture and colors of the natural desert setting.

d. NAOS does not include the area within 5 feet on either side of a perimeter wall, although this area may be considered as revegetated NAOS.

e. Maintain continuity of Natural Area Open Space; do not separate adjacent NAOS areas with perimeter walls.

f. Do not cross minor or major watercourses with perimeter walls.

g. Install openings in perimeter walls at least 3 feet in width and height at intervals no greater than 200 feet to allow wildlife movement.

2. Individual On-Site Walls

a. For lots 30,000 square feet or greater, set back walls at least 15 feet from the property line.

b. Where on-site walls are placed adjacent to NAOS areas at least 50 percent of the wall surface shall be a view fence.

c. Do not cross or enclose minor or major watercourses with on-site walls.

3. Fences

a. Fences may cross drainage ways as long as they do not impede storm flows, collect debris in storm flows or block the passage of wildlife.

4. Walls Along Vista Corridors

a. Walls located immediately adjacent to a Vista Corridor easement are limited to a height of 3 feet. Set back taller walls parallel to Vista Corridor easements an additional 4 feet for each foot of wall height above 3 feet.

b. Where channel capacity is sufficient to contain the 100-year storm flow, place walls along the edge of Vista Corridor easements a minimum of 2 feet back of the grade break at the top of the natural channel of the wash.

5. Sound-buffer Walls Along Roads

Sound walls are not allowed where there is a Scenic Corridor Easement along a roadway and are generally discouraged in other locations. Naturally contoured and landscaped berms may be permitted subject to the specific approval of the Development Review Board. Exceptions to this may be considered along roads with 4 or more lanes where the adjacent subdivision has no Scenic Corridor Easement. The design of any wall in such a case shall be subject to specific approval by the Development Review Board. The wall design shall incorporate rustic and dark materials, provide openings and breaks for washes and adjacent NAOS areas, and shall include variations in vertical and horizontal alignment.

C. Ancillary Improvements

1. Corral Areas

Do not place corral areas over or across minor or major watercourses, boulder clusters or rock formations. Also, do not place them on areas with slopes in excess of 15 percent.

2. Tennis Courts

Do not build tennis courts on terrain with slopes in excess of 15 percent. On slopes of 3 percent or more cut tennis courts into the slope rather than placing them upon fill material. The screen fencing should be a dark color, preferably black or dark brown.

3. Parking Areas

On slopes of 5 percent or more divide parking areas into sections generally with no more than 50 spaces. Use landscaped islands to transition the grade breaks across parking areas. Direct parking area run-off into detention basins, as applicable. The maximum height of light poles in parking areas is 16 feet.

D. Other Site Design Considerations

1. See Section 2-1.1100, Outdoor Lighting, for light standards within ESLO areas.

The maximum mounting heights for outdoor building, parking lot, landscaping and security lights is 16 feet in the Upper Desert and Hillside landforms.

2. Firebreaks

Maintain a Defensible Space firebreak within 30 feet of any occupied structure. A firebreak shall consist of a maintained area where the typical herbaceous and grass plant materials that grow annually are kept clear. This does not include the removal of any native perennial plant materials, except those that might overhang structures. In lieu of the removal of certain plants, fire-rated walls and/or exterior fire sprinklers may be considered. Cantilevered, bridged or similar types of structures may be allowed subject to the approval of the city's Fire Department. Native trees may be trimmed within this Defensible Space. In addition, gutters and eaves should be kept clear of debris; flammable materials should not be stored or stacked; and a hose connection should be provided near where building walls are adjacent to NAOS areas. Consult the city's Invasive Plants brochure, www.ScottsdaleAZ.gov/codes/nativeplant and wildland fire prevention information, www.ScottsdaleAZ.gov/codes/fireord.asp for assistance in identifying and eradicating these plants.

3. NAOS Setbacks

NAOS easement may be located adjacent to site walls, driveways, parking area or similar construction as long as the first 5 feet of NAOS out from the improvement is revegetated, as provided in the ordinance. The NAOS easement shall be placed at least 5 feet away from a roofed structure, with the next 5 feet out from the structure being revegetated area, see below.

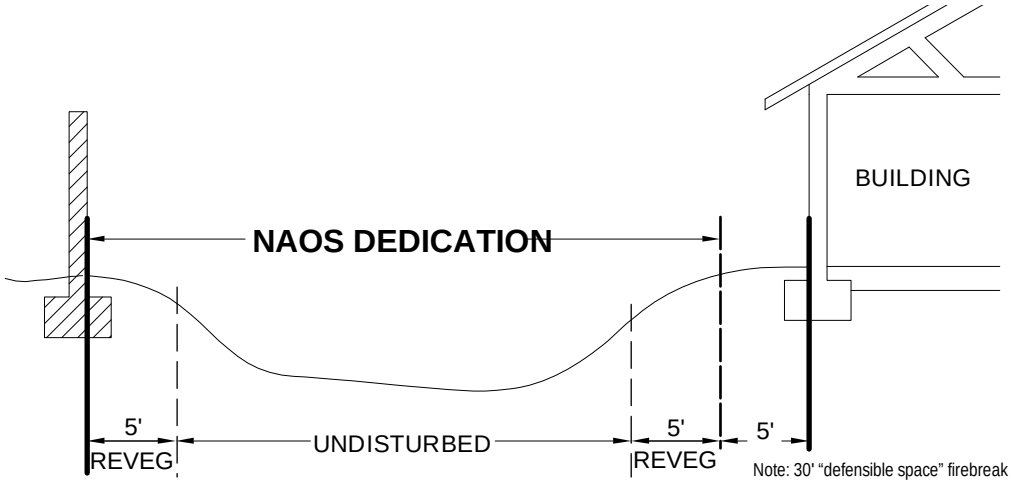


FIGURE 2.2-9 NAOS LOCATION GUIDE

4. Landscaping

a. The palette of plants that can be used for areas that are not enclosed or trees that exceed a mature height of 20 feet are listed on the city's Indigenous Plants for Environmentally Sensitive Lands publication. The use of any other plant materials in such situations shall be subject to the specific approval of the Zoning Administrator or designee, see www.ScottsdaleAZ.gov/codes/nativeplant.

b. Use hydro-seed applications in revegetated areas only as a supplement to the use of container or relocated plant specimens. The seed mix in terms of plant types and ratios shall be based upon the native mix and density that occurs on the site.

c. Design and install swimming poll filtration systems in such a manner that no flows shall enter any NAOS areas or drainage ways.

d. Landscape lighting is not allowed within NAOS areas.

Section 2-3

FIRE

2-3

This section (now located in Chapter 11-1, Fire) provides an overview of fire protection concerns and Fire Plan Review's role in plan review and permitting. It lists links to other chapters for specific information about emergency access and fire lanes, water supply, fire protection, signage, wildland boundary issues and high rise building considerations.

DEPARTMENT RESOURCE INFORMATION

Aviation/Airport	15000 N. Airport Dr.	480-312-2321
Advance Planning Services	7506 E. Indian School Rd.	480-312-7990
Capital Project Management	7447 E. Indian School Rd., Suite 205	480-312-7250
Current Planning	7447 E. Indian School Rd., Suite 105	480-312-7000
Customer Service	7447 E. Indian School Rd., Suite 100	480-312-7800
Downtown Group	4248 N. Craftsman Ct.	480-312-7750
Facilities Management	9191 E. San Salvador Dr.	480-312-5999
Fire & Life Safety/ Inspections	8401 E. Indian School Rd.	480-312-1855
Fire Plan Review	7447 E. Indian School Rd., Suite 125	480-312-7080
Inspections & Land Survey	9191 N. San Salvador Dr.	480-312-5750
Parks Department	7340 Scottsdale Mall	480-312-2915
One Stop Shop/Permit Services	7447 E. Indian School Rd., Suite 100	480-312-2500
Plan Review	7447 E. Indian School Rd., Suite 125	480-312-7080
Records Division	7447 E. Indian School Rd., Suite 100	480-312-2356
Solid Wastewater Management	9191 N. San Salvador Dr.	480-312-5600
Stormwater Management	7447 E. Indian School Rd., Suite 205	480-312-7250
Street Operations	9191 N. San Salvador Dr.	480-312-5626
Transportation	7447 E. Indian School Rd., Suite 205	480-312-7696
Water Resources	9388 E. San Salvador Dr.	480-312-5685
City of Scottsdale	www.scottsdaleaz.gov	

FIRE

MOVED

This section has been moved to Chapter 11, FIRE.

Section 2-4

DISABILITY ACCESS

2-4

This new section provides general information and assistance for designing and constructing facilities within the city that provide access to people with various disabilities. It also provides links to specific accessibility guidelines and best practices and guidance for planning and construction, site access and signage and ROW considerations.

DEPARTMENT RESOURCE INFORMATION

Aviation/Airport	15000 N. Airport Dr.	480-312-2321
Advance Planning Services	7506 E. Indian School Rd.	480-312-7990
Capital Project Management	7447 E. Indian School Rd., Suite 205	480-312-7250
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Water Resources	9388 E. San Salvador Dr.	480-312-5685
City of Scottsdale	www.scottsdaleaz.gov	

DISABILITY ACCESS

GENERAL INFORMATION 2-4.000

This section provides general information and assistance in the design and construction of facilities within the City of Scottsdale (COS) to provide access to people with various disabilities. References to more specific information and details are provided. This section is under development.

Search for other information about disability access on the city web pages www.ScottsdaleAZ.gov, or call the COS ADA Coordinator at 480-312-2246 for updated information.

OVERVIEW OF ACCESSIBILITY GUIDELINES 2-4.100

The following standards and best practices should be used when designing and constructing accessible facilities. In most instances, adhering to federal accessibility standards assures conformance with City of Scottsdale codes (contact the ADA Coordinator at 480-3122-2246 for parking space requirements and other exceptions).

A. Americans with Disabilities (ADA) Accessibility Guidelines (ADAAG) (1991)

Any place of “public accommodation” (open to the public) or commercial facility where new construction or a significant remodeling commenced after January 26, 1992, shall be built in accordance with ADAAG standards. www.access-board.gov/adaag/html/adaag.htm

B. HUD Fair Housing Accessibility (FHA) Guidelines (FHAG) (1991)

All “covered multifamily dwellings” designed and constructed for first occupancy after March 13, 1991 must be accessible to and usable by people with disabilities. www.fairhousingfirst.org/index.asp

C. International Building Code (IBC) (2006)

Chapter 11, Accessibility controls the design and construction of facilities for access by physically disabled persons. Accessibility requirements for the ADA and FHA are incorporated into the International Codes as the codes are updated. The City of Scottsdale has amended Chapter 11 as follows:

1. 1101.2 Design:
   Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and ICC A117.1, and Arizona Revised Statutes (ARS) Section 41-1492.03 (the Arizonans with Disabilities Act), R 10-3-403 and R 10-3-404, which includes 28 CFR Part 35, and 28 CFR 36, and the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG).

Section 1107 is amended to read as shown:

2. 1107.7 General Exceptions:
   Where specifically permitted by Section 1107.5 or 1107.6, the required number of Type A and Type B units is permitted to be reduced in accordance with Sections 1107.7.1 through 1107.7.6.
3. 1107.7.6 Condominium Projects:
   Type A units are required to be designed but not required to be constructed unless requested. When no Type A units are requested units shall be constructed as a Type B unit. www.iccsafe.org/safety/accessibility/ and http://www.iccsafe.org/e/prodshow.html?prodid=3000S03

D. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities (2003)

This is a nationally recognized standard of technical requirements for making buildings accessible. Published since 1961, it is referenced by federal documents and state accessibility laws. The IBC also references the ICC/ANSI A117.1.
www.iccsafe.org/safety/accessibility/ and www.iccsafe.org/e/prodshow.html?prodid=9033S03

E. Arizonans with Disabilities Act (AzDA) (ARS Section 41-1492.03)

Arizona adopted the ADAAG as the State building standard with an effective date of January 26, 1993. www.azada.gov/RightsInfo/PubAccom.asp

F. City of Scottsdale Revised Codes and Ordinances

Chapter 31, Article III Building Code – adopts the AzDA, ADAAG, and IBC as the Scottsdale building code. www.ScottsdaleAZ.gov/codes

Zoning Ordinance Article IX, 9.105. Mobility impaired accessible spaces – Stipulates slightly different accessible parking space requirements than federal requirements.
www.ScottsdaleAZ.gov/codes

G. U.S. Access Board Revised Draft Guidelines for Accessible Public Rights-of-Way

This document provides guidance for public rights-of-way, such as public sidewalks, curb ramps, accessible routes, ground and floor surfaces, and bus stops and shelters. These guidelines are considered “best practices” in this field and recommended for use.
www.access-board.gov/prowac/draft.htm#Text

2-4.200 PLANNING & CONSTRUCTION

Design professionals are encouraged to use the accessibility information in this manual and the links to resource documents in Section 2-4.000. Should specialized situations occur, contact the ADA Coordinator, 480-312-2246, for compliance recommendations. Consultations regarding disability access can be provided at any stage of the process from design to inspections.

2-4.201 ONGOING BARRIER-REMOVAL

The Attorney General and Department of Justice offices expect existing public facilities to engage in ongoing “readily achievable” barrier-removal whether making any other alterations. For a discussion of “readily achievable”, see www.ada.gov/adata1.pdf.

The ADA prioritizes barrier-removal in the following manner:

1. Enabling individuals with disabilities to enter the facility.
2. Providing access to those areas where goods and services are made available to the public.
3. Providing access to restrooms, if restrooms are provided for use by customers or clients.
4. Removing any remaining barriers, such as lowering telephones.

ALTERATIONS 2-4.202

When alterations are made to improve the function of a business, accommodate a change or growth in services, or as part of a general renovation, the requirements for barrier-removal at that time are greater because the alteration is part of a larger construction or replacement effort. Any changes made to a facility shall include improved access within that element and may cause need for further accessibility improvements.

Up to 20% of the total cost of an alteration project shall be used towards barrier-removal as long as barriers still exist.

NEW CONSTRUCTION 2-4.203

Use IBC www.iccsafe.org/e/prodshow.html?prodid=3000S03, or ADAAG www.access-board.gov/adaag/html/adaag.htm to guide design of new construction. Universal access for people with any ability level is easily accomplished when planned for from the inception of the project.

PLAN REVIEW 2-4.204

A. References

Identify on the plan cover sheet which accessibility standards were followed. For example: ADAAG 1991, IBC 2006.

B. Accessibility Notes

The preferred method for identifying accessible elements in a plan is to provide a note as shown below in Figure 2.4-1. Summarizing accessibility notes at the beginning of the plan document assists staff in identifying all of the accessible accessibility elements in the plan.

ACCESSIBILITY NOTES

1. Accessible entrances to the building shall be identified by the international symbol of accessibility.
2. Exterior exits which are located adjacent to accessible areas and within 6 ft. of adjacent ground level shall be accessible.
3. Accessible ramps required by ANSI shall not have slopes exceed 1 ft. in 12 ft.
4. The surface of ramps and ground surfaces shall be roughened or shall be of slip resistant materials.
5. An accessible route of travel 3 ft. wide min. must be provided to all portions of the building, between the building and the public way. Accessible routes shall have a maximum slope of 1:20 and a maximum cross slope of 1:50.
6. Threshold must be 6 inches in height or less.
7. The primary entrance to the building must be accessible. All other required entrances must be accessible.
8. All accessible parking spaces shall have a slope not exceeding 1:50.
9. All accessible parking spaces shall be outlined on all four sides, have a contrasting color and the international wheelchair symbol on the ground within the space.
10. All accessible parking spaces shall have a sign (minimum 5 ft. above finish grade in front of the space) which includes the international symbol of accessibility.
11. Signs designating permanent rooms and spaces shall meet accessibility requirements.
12. All electrical receptacles and controls shall be 18 inches minimum and 48 inches maximum above finished floor.
13. All alarms shall be audible and visual, meeting accessibility requirements.
14. Accessible route shall be without steps or changes in level greater than 6 inches without an approved ramp.
15. Accessible routes shall serve as exits or connect to areas of rescue assistance.

FIGURE 2.4-1 ACCESSIBILITY NOTES EXAMPLE

C. Site Plans

Site plans must include access symbols, such as a circle representing a 5 foot turning radius. The improvement plans shall include profiles at all driveways, sidewalks, curb ramps and parking lots. Sufficient elevations shall be provided on the plans of all parking areas, driveways and private property for review of proper ADA slopes and cross slopes, see Section 9-1.404.

D. Equivalent Facilitation

Nothing in these requirements prevents the use of designs, products, or technologies as alternatives to those prescribed, provided they result in substantially equivalent or greater accessibility and usability. When applying for a building variances which include an accessibility component, the variance must reviewed with the ADA Coordinator for equivalent facilitation.

CONSTRUCTION ACTIVITY 2-4.205

Pedestrian access must be provided during construction, and in accordance with the Barricade Plan, see Section 5-2.306. Specifically, pedestrian paths through work zones should replicate as close as possible the elements of the existing path and be accessible to people in wheelchairs.

When providing community notification of construction activity, consider including methods to alert residents with possible sensory impairments. Such methods include additional signage, door hangers, community newsletters, and press releases. Important methods for auditory/ electronic delivery include community meetings, phone message lines, and web site information, see Section 5-2.308.

If the project affects an existing bus stop, the permittee must create a temporary bus stop, with comparable amenities, if feasible. The temporary bus stop should be as close as possible to the affected stop, be in a safe location, and be easily accessible, see Section 5-2.312. The location of the temporary bus stop is subject to the Transportation Department General Manager or designee's approval.

SITE ACCESS 2-4.300

ACCESSIBLE ROUTE 2-4.301

At least one accessible route must be provided from the public right-of-way to, and throughout the site, that connects all facilities within the site. For specific ADA requirements for accessible routes, refer to www.access-board.gov/adaag/html/adaag.htm#4.3.

GROUND SURFACES 2-4.302

A. Surface Materials

ADA requires ground surfaces to be "firm, stable and slip resistant", and less than 1/4 inch level change or gap. Many pavers and stamped asphalt or concrete, particularly those that are domed-topped, do not meet these requirements.

Pavers should be used only as a decorative element on the outside edges of a pedestrian walkway, to maintain at least a 48 inch smooth, vibration-free concrete or asphalt walking surface.

Where concrete or asphalt is not used, walkways must be surfaced with stabilized decomposed granite, or approved equivalent.

B. Color & Contrast

High-contrast colors and differing textures, and the adjacent placement of these surface materials can be used to enhance way-finding. Contact the ADA Coordinator at 480-312-2246 for specific considerations.

SIDEWALK, WALKWAY & MULTIUSE PATH WIDTHS 2-4.303

The preferred widths of sidewalks, walkways and multiuse paths are describedin Section 2-1.708.

CURB RAMPS 2-4.304

All curb returns causing level changes within an accessible route shall have curb ramps conforming to ADA standards. To guide from overuse, thereby diminishing their effectiveness, detectable warnings, in the form of truncated domes, shall only be used at curb ramps at vehicular intersections, or at signalized commercial driveways acting as vehicular way. Intersection curb ramps shall designate the ramp control point as indicated on the COS

Standard Detail Nos. 2232 to 2235, www.ScottsdaleAZ.gov/design/COSMAGSupp/, and shall be installed per Section 5-8.400.

2-4.305 DETECTABLE WARNINGS

Detectable warnings (truncated domes) shall be provided at street intersections in accordance with COS Standard Detail No. 2231, see www.ScottsdaleAZ.gov/design/COSMAGSupp/. Product substitutions may be discussed with the Street Operations Manager, 480-312-5626. Detectable warnings in ESLO areas shall be “Western Reserve” in color, or approved equal. Detectable warning in the Environmentally Sensitive Land areas shall be a color equivalent to Dunn Edward Western Reserve

2-4.306 DRIVEWAYS

Driveway design shall use COS Standard Detail Nos. 2250 to 2258, to allow access for people with mobility disabilities, see www.ScottsdaleAZ.gov/design/COSMAGSupp/.

2-4.307 ACCESSIBLE (HANDICAPPED) PARKING SPACES

1. Accessible parking spaces shall be provided and designed in accordance with City Zoning Ordinance, Appendix B, Sec. 9.105, www.ScottsdaleAZ.gov/codes.asp.
2. Universal size spaces (11 feet wide) may be used for all accessible spaces (PREFERRED).
3. Distribute accessible parking through each type of parking available.
4. An accessible access aisle for van spaces is preferably located on passenger side.
5. Provide a 5 foot wide access aisle with cross-hatching (no parking area) adjacent to the accessible stall.
6. Any necessary ramps shall not encroach into access aisle.
7. Accessible parking shall be located on an accessible route to an accessible entrance.
8. Each individual accessible parking space shall be signed as per COS Standard Detail No. 2124.
9. Each accessible parking space shall be clearly marked with the accessibility symbol on the ground at the rear of the space. The preferred marking is a white symbol with a blue background.

See the following Figure 2.4-2 for an example of a preferred accessible parking space.

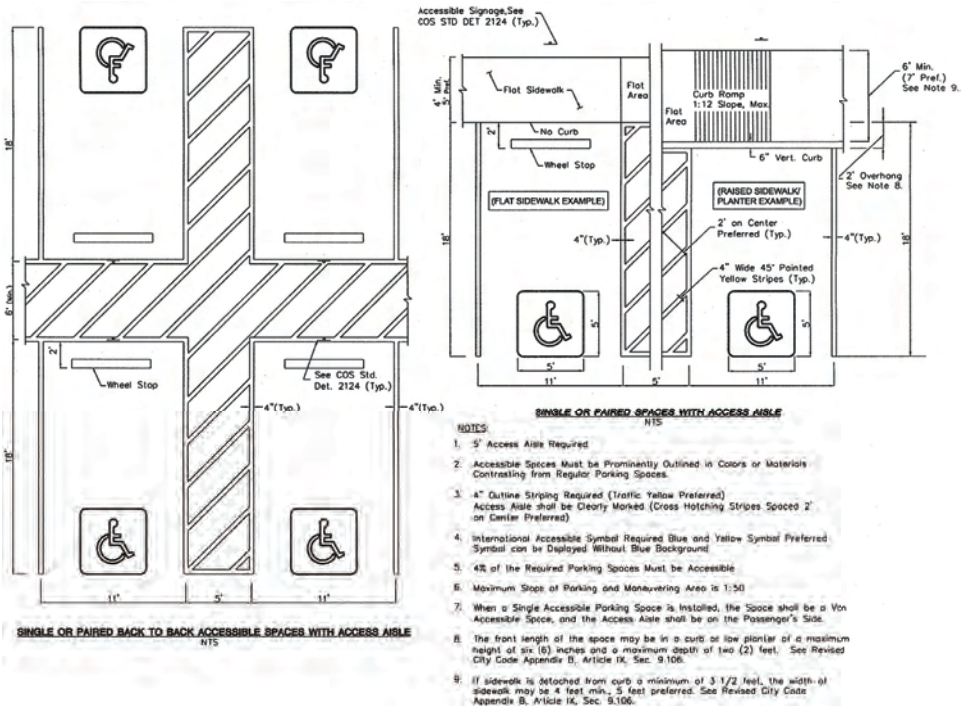

FIGURE 2.4-2 PREFERRED ACCESSIBLE PARKING SPACE

DRIVE-THROUGH FACILITIES 2-4.308

Vertical clearance must be a minimum of 98 inches for drive-through facilities. Drive-through facilities that include a passenger loading zone must have a vertical clearance of 114 inches, see Section 2-1.703.

BUILDING CONSTRUCTION 2-4.400

COMMERCIAL FACILITIES 2-4.401

A. General Information

The City of Scottsdale requires commercial developers to comply with the Americans with Disabilities (ADA) Accessibility Guidelines (ADAAG) (1991), and the International Building Code (IBC) (2006) through the adoption of SRC Chapter 31, Article III Building Code.

B. Drinking Fountains

Ensure that drinking fountains installed meet ADA guidelines by having a wheelchair accessible fountain installed at 34 inches above finish floor (AFF), (measured to the deck), and a standard height drinking fountain installed at 40 inches AFF.

For facilities requesting a building code variance from the drinking fountain requirements, equal access must be provided for persons with disabilities via “equivalent facilitation”, as required by the ICB 2006, Sec. 2901. Contact the ADA Coordinator for more information.

C. Product Standards

Refer to the following sections for specifications for selecting and installing accessible features:

1. Plumbing Systems, Section 9-3.100

2. Doors & Hardware Systems, Section 9-3.200
3. Building Components, Section 9-3.300

Alternate products for consideration shall meet the ADAAG requirements for Controls and Operating Mechanisms and Space Allowance and Reach Ranges, see http://www.access-board.gov/adaag/html/adaag.htm#4.2.

2-4.402 MULTIFAMILY RESIDENTIAL FACILITIES

The City of Scottsdale requires multifamily residential developers to comply with the HUD Fair Housing Accessibility (FHA) Guidelines (FHAG) (1991), by requiring compliance with the International Building Code (IBC) (2006), which is a “safe harbor” FHA building standards.

2-4.500 RIGHTS-OF-WAY

2-4.501 TRANSPORTATION PLANNING

Disability access is expected in all transportation, rights-of-way and transit elements within any development or redevelopment, see Section 5-1.1002.

References

1. United States Access Board Revised Draft Guidelines for Accessible Public Rights-of-Way www.access-board.gov/prowac/draft.htm
2. United States Access Board Interfacing Accessible Pedestrian Signals (APS) with Traffic Signal Control Equipment www.access-board.gov/research/APS/report.htm#_Toc38768660
3. NCHRP Accessible Pedestrian Signals: Synthesis and Guide to Best Practice, www.walkinginfo.org/aps/pdf/APS-Synthesis.pdf
4. Pedestrian and Bicycle Information Center, www.walkinginfo.org

2-4.502 GENERAL INFORMATION

1. All major thoroughfares shall be accessible in accordance with the “best practices” listed above.
2. Accommodate direct disability access through drainage channels, dead ends, walls, cul-de-sacs, open space, and other barriers to reach neighborhood destinations such as homes, schools, parks, libraries, retail centers, civic spaces, and trip generators, see Section 5-9.100.

2-4.503 SITE ACCESS

See the following sections of Section 2-4.300 for requirements for rights-of-way development:

a. Accessible Route, Section 2-4.301
b. Ground Surfaces, Section 2-4.302
c. Sidewalk, Walkway & Multi-use Path Widths, Section 2-4.303
d. Curb Ramps, Section 2-4.304
e. Detectable Warnings , Section 2-4.305
f. Driveways, Section 2-4.306
g. Accessible (Handicapped) Parking Space, Section 2-4.307
h. Drive-Through Facilities, Section 2-4.308

2-4.504 INTERSECTIONS AND CROSSWALKS

Section 5-3.119 discusses factors related to intersection design. These factors also impact the ease of street crossing for people with visual impairments.

Crosswalk surfaces should follow the guidelines in Section 2-4.302.

MEDIANS 2-4.505

Medians constructed to act as a Pedestrian Refuge shall have detectable warnings on both sides of the median at the point of entry into the crosswalk. See COS Standard Detail No. 2295, www.ScottsdaleAZ.gov/design/COSMAGSupp/.

SIGNALS 2-4.506

Information on accessible pedestrian signals is available in the Manual on Uniform Traffic Control Devices (MUTCD) http://mutcd.fhwa.dot.gov/index.htm.

1. Audible Pedestrian Signals

Audible pedestrian signals must be available to citizens upon request.

2. Pedestrian Push Buttons (See Section 5-4.104)

a. Provide a minimum 48 inch by 48 inch concrete slab immediately adjacent to the pole, and directly under the pedestrian signal button.
b. The slab shall have no more than a 2% slope in any direction.
c. Provide a minimum 36 inch accessible route to the pole slab, if necessary.
d. Mount pedestrian signal button at 36 inches from ground to center of button.
e. Pedestrian signal buttons shall be the large slap buttons.

TRANSIT STOPS 2-4.507

All developed or redeveloped transit stops must comply with applicable provisions of the ADA, and other “best practice” reference documents noted in Section 2-4.100. All transit stop locations where an accessible pedestrian route is available or where major improvements have been made to an existing inaccessible stop shall incorporate the following elements referenced in Section 5-6.000:

a. Accessibility (Surface, Dimensions, Connection, Grade and Bus Shelters), Section 5-6.002
b. Benches, Section 5-6.201
c. Shelters, Section 5-6.202
d. Bus Stop Signs, Section 5-6.401
e. Sign Clearance, Section 5-6.403

Also see MAG Standard Detail No. 230 and COS Standard Detail No. 2232 for related information, www.ScottsdaleAZ.gov/design/COSMAGSupp/.

PARKS & TRAILS 2-4.508

All walkways leading to, into and throughout sporting and recreation areas must be ADA compliant unless to do so would fundamentally alter the nature of the facility/activity. In addition to those elements discussed in this chapter, see Park Design, Section 8-2.200 for information concerning:

a. Walkways, Section 8-2.201
b. Drinking Fountains, Section 8-2.202
c. Playgrounds, Section 8-2.203
d. Signage, Section 8-2.209
e. Parking, Section 8-2.210