# Design Review, Engineering and Administrative Manual

*City of Sedona Community Development*

*102 Roadrunner Drive, Sedona, AZ 86336* *(928) 282-1154* www.sedonaaz.gov/CD

*May 20, 2019*

## Amendments

May 20, 2019, revised: 1.2.C.1, 3.1.F, 3.2.C.4, 3.1.H.6.k

# Table of Contents


**Chapter 1: Administrative ..... 1**

**1.1. General Application Submittal Requirements ..... 1**
- A. Introduction ..... 1
- B. Submittal Requirements ..... 1
- C. Drawing Submittal Standards ..... 1
- D. Letter of Intent ..... 3
- E. Context Plan ..... 3
- F. Proposed Project Drawings ..... 3
- G. Citizen Participation Plan ..... 4
- H. Other Documentation ..... 5

**1.2. Specific Application Submittal Requirements ..... 6**
- A. Development Review ..... 6
- B. Conditional Uses ..... 7
- C. Single-Family Residential Review ..... 7
- D. Temporary Use Permit ..... 8
- E. Rezoning (Zoning Map Amendment) ..... 8
- F. Rezoning to Planned Development District ..... 9
- G. Historic Preservation ..... 11
- H. Variance ..... 12
- I. Minor Modification ..... 12

**1.2. Subdivision Requirements ..... 13**
- A. Conceptual Plat ..... 13
- B. Preliminary Plat ..... 14
- C. Final Plat ..... 17
- D. Condominiums and Condominium Conversions ..... 20
- E. Subdivision Improvement Agreements for Phased Developments ..... 21
- F. Submittal, Review and Approval of Improvement Plans ..... 22
- G. Assurance of Construction ..... 22

**Chapter 2: Design ..... 24**

**2.1. Introduction ..... 24**
- A. General Design Intent ..... 24
- B. Purpose ..... 24
- C. Community Plan Vision ..... 24

**2.2. Design Principles ..... 25**
- A. Sense of Place ..... 25
- B. Sense of Community ..... 25
- C. Community Context ..... 26
- D. Green Building and Site Design ..... 27

**2.3. Environmental Stewardship ..... 28**
- A. Integrating the Built and Natural Environment ..... 28
- B. Open Space and Natural Areas ..... 28
- C. Oak Creek ..... 29

**2.4. Landscaping ..... 30**
- A. Landscape Design ..... 30
- B. Plant List ..... 33

**2.5. Active Transportation ..... 36**

**2.6. Parking ..... 36**
A. Parking ..... 36
**2.7. Architectural Character and Building Form ..... 37**
A. Architectural Style ..... 37
B. Proportions and Scale ..... 37
C. Building Massing ..... 38
D. Architectural Details ..... 40
E. Building Materials ..... 41
F. Drive-Through Facilities ..... 41
**2.8. Exterior Lighting ..... 42**
A. General Standards ..... 42
B. Parking Area Lighting ..... 42
C. Exterior Wall and Building Lighting ..... 43
D. Examples of Good Light Fixtures ..... 44
E. Examples of Bad Light Fixtures that are Discouraged ..... 44
**2.9. Signage ..... 45**
A. General Design Criteria ..... 45
B. General Location Criteria ..... 45
C. General Design Recommendations ..... 46

**Chapter 3: Engineering ..... 48**

**3.1. Grading and Drainage Permits ..... 48**
A. Purpose ..... 48
B. Applicability ..... 48
C. Minor Modifications ..... 48
D. Permit Required ..... 48
E. Exemptions ..... 49
F. Grading Permit Submittal Requirements ..... 50
G. Bonds ..... 54
H. Grading Permit Limitations and Conditions ..... 55
I. Denial of Permit ..... 59
J. Grading Permit Fees ..... 59
K. Safety Precautions ..... 60
L. Responsibility of Permittee ..... 60
M. Modification of Approved Plans ..... 61
N. Completion of Work ..... 61
**3.2. Grading and Drainage Design Standards ..... 62**
A. General Requirements ..... 62
B. Drainage Design and Treatment ..... 65
C. Supplemental Design Standards ..... 74
D. Grading, Inspection, Cuts, Fills, and Supervision ..... 77
**3.3. Streets and Driveway Design ..... 85**
A. Street Design Generally ..... 85
B. Cul-de-Sacs and Dead-End Streets ..... 89
C. Driveways and Access ..... 89
**3.4. Off-Street Parking and Loading ..... 92**
A. Site Development Standards for Off-Street Parking Areas ..... 92
B. Parking Area Dimensional Standards ..... 92
C. Accessible Parking (ADA) Standards ..... 95

**Chapter 4: Appendices ..... 97**

**4.1. Appendix A: City of Sedona Approved Plant List ..... 97**

**4.2. Appendix B: Invasive Weed List ..... 102**

**4.3. Appendix C: Uptown 89A Character District ..... 104**

**4.4. Appendix D: Uptown Entertainment Overlay District ..... 105**

The Design Review, Engineering, and Administrative Manual includes supporting materials to the Land Development Code (LDC), including submittal requirements, design guidelines, and technical engineering standards. Prior to the adoption of the LDC in 2018, many of the provisions in this manual were found in the various articles of the City's previous LDC and have now been updated and consolidated in one place to create a more user-friendly document and to cover administrative details and guidelines that are not appropriate to include in the LDC. This manual is presented in three parts:

**Chapter 1 – Administration**:

Information related to the submittal of development applications.

**Chapter 2 – Design**:

Guidelines that highlight preferred design principles and the rationale behind various provisions, and additional details to supplement the requirements of the LDC.

**Chapter 3 – Engineering**:

Specific standards for grading and drainage, street and driveway design and parking areas.

The Land Development Code is available at the following website:

www.sedonaaz.gov/ldc

For more information, contact:

City of Sedona

Community Development Department

www.sedonaaz.gov/cd

102 Roadrunner Drive, Sedona, AZ 86336

(928) 284-1154

# Chapter 1: Administrative

## 1.1. General Application Submittal Requirements

### A. Introduction

The City of Sedona's development process has been established to ensure that new development projects comply with all applicable City codes while being sensitive to Sedona's unique setting.

### B. Submittal Requirements

***See LDC Article 8 (Administration and Procedures)***

General submittal requirements apply to all projects that require review and action by City Staff, Commissions, City Council, and/or the Board of Adjustment and may be modified at the discretion of the Director based on the size and scope of the project.

Review procedures are outlined in Article 8 of the Sedona Land Development Code.

A checklist of general submittal requirements that is updated and amended from time to time is available from the Community Development Department. Submittal requirements for each project may vary depending on the nature and complexity of the project. Specific requirements for a project will be reviewed with the applicant during the required pre-application meeting. Once submitted, all application materials become property of the City of Sedona.

At a minimum, the submittal should consist of the following. Each of these are described in more detail in the following pages.

**(1)** **Letter of intent**: Project narrative clearly describing the proposed project.

**(2)** **Context plan**: (See detailed description below).

**(3)** **Proposed project drawings**: Demonstrates how the City's code requirements and design standards have been addressed.

**(4)** **Citizen participation plan**, when required by the Land Development Code: Describes how the applicant intends to conduct their required outreach to the public.

**(5)** **Other documentation**: Includes, but is not limited to, completed application forms, proof of ownership, noticing requirements, legal description of the subject property, and applicable fees.

### C. Drawing Submittal Standards

The standards for application submittal will be strictly enforced by City staff to ensure that all drawings submitted meet the same standards, are easily legible and understood, and that they provide an accurate and clear representation of the proposed development.

The following minimum standards of presentation are required on all drawings submitted to the City for project review:

**(1) General Standards**

All drawings submitted must be drawn to scale and should include the following basic information and comply with the following general standards:

**a.** **Sheet size:** All sheets submitted should be of the same size and orientation. A horizontal (landscape) orientation is preferred, and sheets should not be larger than 24 inches high by 36 inches wide.

**b.** **Project and plan sheet title:** This should be shown on all plans and drawings submitted.

**c.** **North arrow:** Preferably this should point to the top of the plan, but if necessary, it can be oriented to the left of the sheet.

**d.** **Scale:** A graphic and written scale should always be included.

**e.** **Sheet number and sheet's place in drawing set.** For example, "Sheet X out of Y"

**f.** **Date of original drawing,** and any revisions, if applicable.

The information required above should be included in a Title Block, located either at the lower right-hand side of the sheet, or vertically along the right-hand edge of the sheet, so as to be visible when folded or rolled.

The number of copies of each plan to be submitted will be determined by the Director, based on established submittal checklists.

### (2) Site Plans, Landscape, Grading, and Drainage Plans

For most projects a scale of 1":10′ is recommended. For larger projects, a scale of 1":20" may be used. In order to maintain the necessary level of detail, plans should be submitted on multiple sheets rather than reducing the size of the drawings.

All site related plans and drawings submitted should maintain the same scale.

### (3) Building Elevations and Floor Plans

**a.** For most projects a scale of "1/4:1′0" is recommended. For larger projects, a scale of "1/8:1′0" may be used. In order to maintain the necessary level of detail, plans should be submitted on multiple sheets rather than reducing the size of the drawings.

**b.** All elevations and floor plans should be presented at the same scale and should show the same level of detail.

**c.** Elevations should be described by their compass orientation, (i.e. "north", "southwest", etc.), rather than by using the notation "front", "side", "rear".

### (4) Other Exhibits

The following additional exhibits may be required to more clearly explain the proposed development. These should always be drawn to the same scale as other drawings that they relate to; for example, a building section should be drawn to the same scale as building elevations:

**a.** Elevations of all courtyards and internal passages,

**b.** Sections through the site and buildings. This is especially important on steeply sloping terrain,

**c.** Perspective renderings and/or computer simulations showing views of the project from important viewing points as determined by the Director of Community Development,

**d.** Photographs of the site and examples of buildings similar to the proposed,

**e.** Scale model.

## D. Letter of Intent

The Letter of Intent (LOI) serves as the project narrative and should present the project in a comprehensive manner. The LOI should provide a sufficient overview of the project and how the project meets any applicable City requirements. The LOI should also address how the application meets the required findings for the type of application, as outlined in LDC Article 8.

## E. Context Plan

This shows the relationship between a proposed development and its surrounding environment or context area. A Context Plan shall include all areas within a minimum of 500 feet from the subject property. At a minimum the Context Plan shall include the following:

### (1) Vicinity Map and Aerial Photograph

The Vicinity Map and Aerial must be provided on a sheet large enough to show the required detail, but no larger than 24" x 36", and at a minimum should include the following information:

**a.** Subject property highlighted,

**b.** Adjoining parcels,

**c.** Zoning boundaries and designations,

**d.** Existing buildings,

**e.** Significant geographical features (such as Oak Creek, USFS boundary, or rock formations),

**f.** Streets and street names,

**g.** Established trails, sidewalks, urban pathways, and trailheads.

### (2) Written Narrative

A written narrative should also accompany the Context Plan.

This can either be provided as a separate document or may be included within the Letter of Intent. The following could be included in the narrative:

**a.** Height, intensity, use and character of existing development,

**b.** Mature vegetation and natural features,

**c.** Existing sign locations and design,

**d.** Historical structures,

**e.** Predominant building materials,

**f.** Viewshed analysis,

**g.** Primary pedestrian circulation,

**h.** Significant development features such as parking lots, courtyards, pedestrian walkways, and service areas.

## F. Proposed Project Drawings

In order to show the required detail, the plans may need to be submitted on multiple sheets. At a minimum, the drawings should include the following information.

**(1)** Existing conditions survey. For multi-family and non-residential projects, the survey must be prepared by a licensed surveyor.

- **a.** Existing contours, at 1 foot intervals.
- **b.** Existing structures,
- **c.** Trees and large shrub masses,
- **d.** Rock outcrops,
- **e.** Easements,
- **f.** Drainages.

**(2)** Preliminary site plan:

- **a.** Building placement,
- **b.** Project and building areas,
- **c.** Setback requirements,
- **d.** Driveways and walkways,
- **e.** Parking areas,
- **f.** Relationships to adjoining properties,
- **g.** Building coverage and total coverage calculations,
- **h.** Any other additional information requested by staff.

**(3)** Roof plan, showing the elevation heights of all ridges, eaves, and parapets, overlaid on a contour map with contours drawn at 1 foot intervals.

**(4)** Building elevations, showing significant features such as doors, windows, and columns as well as the location of wall signs.

**(5)** Preliminary landscape plan, including a complete plant schedule showing plant species, quantities and sizes. See LDC Section 5.6 (Landscaping, Buffering, and Screening)

**(6)** Preliminary lighting plan, including a complete inventory of proposed lighting fixtures and cut sheets, lumen count, and bulb types.

**(7)** Master Sign Plan, in compliance with LDC Article 6

**(8)** Preliminary grading and drainage plan and report

## G. Citizen Participation Plan

***See LDC Section 8.3.D (Citizen Review Process)***

**(1)** Details of methods and strategies the applicant intends to use to involve the public, including:

- **a.** Dates and locations of all meetings where citizens will be invited to discuss the applicant's proposal.
- **b.** Content of mailings to neighboring property owners
- **c.** Map depicting which residents, property owners, and interested parties will be notified

**(2)** Prior to scheduling a public hearing with the Planning and Zoning Commission, a Citizen Participation Report must be provided to City Staff that includes a summary of the applicant's public outreach efforts based on the Citizen Participation Plan along with a summary of concerns, issues, and problems expressed during the process including:

**a.** The concerns, issues, and problems raised by the public.

**b.** How the applicant has addressed or intends to address concerns, issues, and problems expressed during the process.

**c.** Concerns, issues and problems the applicant is unwilling or unable to address, and why.

## H. Other Documentation

The following documents shall also be submitted with an application for project review:

**(1)** Completed application forms

**(2)** Required fees

**(3)** Letter of authorization from the property owner, if different from the applicant.

**(4)** Mailing labels and a map showing all property owners within the required noticing radius, as required by the LDC.

**(5)** A material sample board showing materials and colors to be used in the proposed development. Colors and material samples shall be physical samples of the color/material proposed (not print outs or brochures). LRV (light reflectance value) and chroma shall be indicated for all samples of roof and exterior materials

The applicant should provide one sample board no larger than 8.5"x11" for the project file and one sample board no larger than 24"x36" for use in the public hearing.

In larger or highly visible projects where color selection is most critical, the Director of Community Development and/or Planning and Zoning Commission may require large-scale on-site color tests prior to the colors and/or finishes being applied to the entire building.

**(6)** For properties proposed to be developed in multiple phases, a phasing plan indicating the order of development and a time frame for each phase is required.

**(7)** Letters of serviceability from all proposed utility connections. The applicant is encouraged to discuss any improvements and line extensions that will be required by the utility company prior to application submittal.

**(8)** Legal description of the property

**(9)** ALTA Survey completed within the past two (2) years showing all easements on the subject property.

**(10)** A summary of any additional legal restrictions for development on the subject property (e.g. previous development agreements, deed restrictions, etc.).

**(11)** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code

**(12)** Application

# 1.2. Specific Application Submittal Requirements

In addition to the general requirements outlined above, the following section outlines specific requirements applicable to different types of projects. The information described is in addition to any other information required by the LDC. It is not, however, the intent to require the applicant to duplicate information otherwise required.

The Director may waive and/or modify those requirements based on the size and scope of the proposal. The information requested by this section, and as required by other applicable codes and ordinances, may be combined into one or more maps or plans; provided, that the combined maps or plans adequately depict the required information.

All submittals shall be presented on plan sheets at the size and scale as determined by the Director. After approval of a project application, any change to the approved plan shall be resubmitted for a new approval prior to proceeding with the changed portion of the project.

## A. Development Review

***See LDC Section 8.4.A (Development Review)***

### (1) Application Submittal Requirements

**a.** The LOI should discuss how the project addresses the requirements of the Land Development Code and any additional guidelines contained in this manual. All applicable sections must be addressed, please refer to specific sections of these documents in the LOI.

**b.** A topographic map prepared by a registered surveyor with a minimum 1-foot contour, or at such other intervals as approved by the Director;

**c.** A map (at a minimum scale of 1 inch to 10 feet identifying the following, as applicable:

**1.** All trees over 2 inches DBH, indicating canopy size and species and indicating those trees to be removed;

**2.** All natural topographic features such as watercourses, rock outcrops, native vegetation and trees; and

**3.** A map identifying areas of existing manmade scarring;

**d.** A development plan showing the proposed configuration, size in acres, number of residential units or nonresidential square footage of proposed buildings and underlying zoning categories for each use;

**e.** Floor plans for all proposed buildings;

**f.** Building elevations accurately depicting the proposed appearance of the property and all site improvements upon completion;

**g.** Drawings showing provisions for mechanical equipment screening;

**h.** Information relating to the application of alternate standards, if proposed, as discussed in the LDC Section 2.24.D(4);

**i.** A circulation plan map delineating the location and classification of all major public or private streets and rights-of-way, all required public parking areas, pedestrian ways, trails and bikeways within 500 feet from the property boundary;

**j.** In areas with a slope greater than 30 percent, a soil and geology report identifying areas of unstable slopes, but only if actual construction will occur in the 30+percent slope areas;

**k.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

## B. Conditional Uses

***See LDC Section 8.4.B (Conditional Use Permit)***

### (1) Application Submittal Requirements

**a.** The LOI should discuss the proposed business or use, days and hours of operation, number of employees, traffic impact on the surrounding area, and any anticipated impact to the surrounding area.

**b.** A plan identifying all existing structures and proposed structures;

**c.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

## C. Single-Family Residential Review

***See LDC Section 8.4.C (Single-Family Residential Review)***

**(1)** The application shall contain, at a minimum, the following documents:

**a.** A topographic map with a minimum 1-foot contours within the building footprint, or at such other intervals as approved by the Director. The Director may require this map to be prepared by a registered surveyor due to unique circumstances of the site or design of the building. For example, if alternate standards are being used for building height or if setback reductions due to steep slopes are being applied, the Director may require a registered surveyor to prepare the map.

**b.** A map (at a minimum scale of 1 inch to 10 feet) identifying the following, as applicable:

**1.** All trees over 2 inches DBH, indicating canopy size and species, and indicating those trees to be removed; and

**2.** All natural topographic features such as watercourses, rock outcrops, native vegetation and trees; and

**3.** A map identifying areas of existing manmade scarring.

**c.** A soils classification, prepared by an Arizona registered geotechnical engineer.

**1.** A soils classification is required for all residential structures, and accessory structures, including residential additions.

**i.** If the soils classification determines the soils have a plasticity index of 15 or greater, or otherwise proves conditions necessitate such a report, then a soil engineering and engineering geology report is required and shall meet the requirements of Chapter 3.1.F.(4) and 3.1.F.(5).

**2.** Non-habitable structures on residential properties (attached or detached) that are 400 square feet or less (such as sheds, garages, and decks) can submit a soils classification waiver in lieu of providing a soils classification.

**3.** A non-conversion agreement recorded with the applicable county is required for any enclosed structure for which a soils classification waiver is submitted.

**d.** In areas with a slope greater than 30 percent, a soil and geology report identifying areas of unstable slopes, but only if actual construction will occur in the 30+percent slope areas.

**e.** A plan identifying all existing structures and proposed structures.

**f.** A grading and drainage plan indicating all areas to be graded, including driveways and streets. Stormwater detention shall be indicated on the plan and the volume provided shall be 50 cubic feet for every 1,000 square feet of roof area or portion thereof. Example: A 900 square foot home will require 50 cubic feet of detention, and a 1,500 square foot home will require 100 cubic feet of detention.

**g.** Samples of all proposed exterior paints or stains with LRV (light reflectance value) indicated and samples of roof and exterior materials.

**h.** Drawings showing provisions for mechanical equipment screening.

**i.** Information relating to the application of alternate standards, if proposed, as discussed in LDC Section 2.24.D(4).

**j.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

## D. Temporary Use Permit

***See LDC Section 8.4.D (Temporary Use Permit)***

**(1)** The property owner(s) of record shall have authorized, in writing, the proposed use, dates, times and locations applicable to the request.

**(2)** Applicants shall submit a written explanation to the Director stating how the activity will meet the following requirements for issuance of a temporary use permit, and stating the following required information where applicable:

**a.** That the use is temporary and impermanent and the time(s) that the use will last;

**b.** That the use will not create a nuisance, hazard or interfere with neighbors' property and enjoyment thereof;

**c.** That the location will not create a traffic hazard or parking problem in the right-of-way and that improved parking is available on site or at satellite locations by separate permit;

**d.** That signs will conform to the LDC Article 6, Signs, and will be temporary and impermanent;

**e.** That the area will be kept clean and free from litter and debris at all times;

**f.** That landscape and natural vegetation areas shall be protected to the satisfaction of the Director of Community Development and will not be damaged or trampled. The liability for replacement of any damage which may occur shall be assumed by the applicant.

## E. Rezoning (Zoning Map Amendment)

***See LDC Section 8.6.B (Rezoning (Zoning Map Amendment))***

### (1) Application Submittal Requirements

In addition to general application requirements, applications for rezoning shall include the following materials:

**a.** The Letter of Intent (LOI) should discuss how the proposal meets identified community needs and what community benefits are provided to mitigate the impact of the zone change. Please refer to specific sections of the Community Plan

**b.** Map to include the following:

**1.** Parcel identification;

**2.** Existing zoning and uses on site and for adjacent property;

**3.** Intensity and/or density proposals;

**4.** Phasing schedule;

**c.** Site Plan and building elevations showing the following:

**1.** Building configuration locations and heights;

**2.** Setbacks;

**3.** Landscaped areas;

**4.** Appropriate calculations, such as parking lot coverage;

**5.** Vehicular access points and modifications to existing street improvement;

**6.** Street names, north point, date, right-of-way;

**d.** Additional information as may be required by the Director;

**e.** Traffic and parking study, if required by the Director and/or City Engineer;

**f.** Statement of conformance to the Sedona Community Plan, Community Focus Area Plans, and other adopted land use plans;

**g.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

## F. Rezoning to Planned Development District

***See LDC Section 8.6.B (Rezoning to Planned Development District)***

The submittal requirements and specifications for the PD plan shall include text and maps drawn to scale that include:

### (1) Statement of Ownership

A statement indicating the ownership of all interest in the property included in the PD, with the written consent of all owners and evidence of title.

### (2) Statement of Code Compliance and/or Deviations

A statement that all development on the site will meet applicable standards of this Code, or a statement specifying the standards of this Code to which modifications are proposed and the justification for such modifications.

### (3) Existing Area Description

**a.** The boundaries of the proposed PD district;

**b.** The existing topographic character of the land, including any natural and/or sensitive areas such as floodplains, steep slopes, and other natural features affecting development of the site;

**c.** Sufficient surrounding area to demonstrate the relationship of the PD district to adjoining uses, both existing and proposed.

**d.** Map showing the area proposed for rezoning and the location of any significant feature included in the description.

### (4) Land Uses and General Character

**a.** An explanation of the character and concepts of the proposed PD district, including all land uses proposed to be allowed by right and uses proposed to be allowed only with a conditional use permit;

**b.** A delineation of one or more proposed development areas and the specification of the size of each development area and the identification of the land uses proposed therein;

**c.** The intensity of proposed land uses, expressed in number of dwelling units for residential units and in gross floor area for nonresidential uses;

**d.** Location of existing and proposed buildings on the site, including the proposed maximum building heights and minimum building setbacks; and

**e.** The minimum acreage and location to be dedicated as open space, school sites, or other public uses, and the entity or entities responsible for ownership and maintenance of the same.

### (5) Dimensional Standards

Proposed dimensional standards for the planned development, including setbacks, building heights, and lot coverage, including specific identification of proposed deviations to these standards from this Code.

### (6) Development Standards

Proposed design standards that will govern the orientation and design of buildings and other improvements, including but not limited to the following:

**a.** Architecture, including design standards and building materials for buildings, fences, walls, and other structures, buffering, and fencing. The applicable regulations of this Code shall be specified, referencing both the existing regulations and the wording of each corresponding substitution, as proposed. The proposed PD district should represent a quality development when weighed overall against the standards in this Code or the alternative regulations proposed by the applicant;

**b.** Master Sign Plan;

**c.** Landscape plan and narrative description and/or graphic plan that details standards for parks, open space systems, and public-right-of-way. Include general information as to how buffering will be achieved;

**d.** Sustainability plan (narrative description that details the environmental, economic, and social sustainability elements of the project);

**e.** Street cross-section design, by classification, for all streets;

**f.** Parking facilities, parking lot layout, and parking lot landscaping;

**g.** Bicycle parking facilities, including specifications; and

**h.** The delineation and approximate location of proposed public and private streets and a statement of their functional classifications.

**i.** The delineation and approximate location of proposed sidewalks, trails, and other access points. The entity or entities responsible for ownership and maintenance of all streets, sidewalks, trails, and other amenities contemplated under this paragraph.

### (7) Utilities and Public Services

Existing or proposed utilities and public services, including drainage facilities. In addition, engineering studies relating to water and sewer, master plans, soil reports, traffic engineering reports, archaeological reports and any other reports as determined by the Director and/or City Engineer.

### (8) Phasing Plan

A description of any proposed phasing program of the development, including an estimated time schedule for commencement and completion dates of construction of each phase.

### (9) Community Benefits

A statement specifying the community benefit(s) to be contained in or associated with the proposed PD district.

### (10) Development Agreement

Any development agreement to be executed in connection with the PD.

## G. Historic Preservation

***See LDC Section 8.7 (Historic Preservation Procedures)***

### (1) Application Submittal Requirements

In addition to general application requirements, applications for rezoning shall include the following materials:

**a.** Letter of Intent, addressing the historic context of the project and how the proposed designation, exterior improvements or development, including alteration, restoration, renovation, reconstruction, new construction, demolition, or removal, in whole or in part, of any landmark meets the criteria for each specified request.

**b.** Historic Landmark and District Designation

**1.** A written description of the property/district proposed for designation. Description should include approximate construction date, special aesthetic features, cultural, architectural, archaeological or engineering interest or value of a historic nature, including information about the architecture, notable construction features and other information indicating the historical significance of the property. A description of the condition of property and/or structure(s) including any known threats.

**2.** A current ownership map of properties within 300 feet of the property proposed for designation as a landmark.

**3.** Mailing labels for all property owners within 300 feet of the property

4. Citizen participation plan.
5. Sketches, drawings, photographs, or other descriptive materials supporting the written description and criteria for designation consideration.

**c.** Certificate of Appropriateness and Certificate of No Effect

1. A written description of the proposed project scope including how the proposed work complies with the LDC.
2. Project plans demonstrating how the City's code requirements and design standards have been addressed. Includes, for example, a site plan, landscaping plan, comprehensive building elevations, and other pertinent data as required such as building sections, architectural renderings, photographs or other descriptive materials.

## H. Variance

***See LDC Section 8.8.A (Variance)***

In addition to the general application requirements, a variance application shall contain the following documents at a minimum:

**(1)** Cover letter or report describing the request and specifically addressing the need for the variance and why granting the request will not result in the granting of a special privilege to the applicant and/or property owners;

**(2)** Graphic materials drawn to scale, illustrating all existing and new site improvements and existing site conditions (topography), landscaping, signage and building elevations accurately depicting the appearance of the property and all site improvements upon completion. These will include a Context Plan which includes an existing conditions analysis and a Conceptual Site Plan. This item may be modified or waived by the Director if deemed inapplicable;

**(3)** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

## I. Minor Modification

***See LDC Section 8.8.B (Minor Modification)***

In addition to the general application requirements, an application for a minor modification shall contain the following documents at a minimum:

**(1)** Cover letter or report describing the request and specifically addressing the need for the minor modification and why granting the request will not result in the granting of a special privilege to the applicant and/or property owners;

**(2)** Graphic materials drawn to scale, illustrating all existing and new site improvements and existing site conditions (topography), landscaping, signage and building elevations accurately depicting the appearance of the property and all site improvements upon completion. These will include a Context Plan which includes an existing conditions analysis and a Conceptual Site Plan. This item may be modified or waived by the Director if deemed inapplicable;

**(3)** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

# 1.2. Subdivision Requirements

***See LDC Article 7 (Subdivision)***

In addition to the general application requirements and procedures, Subdivision applications shall comply with the additional application requirements and procedures as outlined in this section.

## A. Conceptual Plat

***See LDC Section 8.5.A(3).b.1 (Conceptual Plat for Subdivisions of More than 10 Units)***

### (1) Application Requirements

**a.** A written narrative describing the overall project. This narrative shall include information on the following:

**1.** Compliance with requirements for subdivision approval.

**2.** Proposed lot sizes;

**3.** Proposed land uses in addition to residential uses;

**4.** Primary access and interior circulation considerations relevant to the property, including vehicular, bicycle and pedestrian ways;

**5.** Major washes and drainage ways;

**6.** Tentative proposals regarding solid and liquid waste disposal, storm sewer and electric and gas utility services;

**7.** Generalized land uses in the vicinity (500 feet) of the site;

**8.** Pending legal issues which are associated with the property;

**9.** General location of existing vegetation on the site;

**10.** Slope analysis;

**11.** Existing site improvements;

**12.** Known historical or archaeological resources;

**13.** Proposed arrangement of lots or units;

**14.** Flood hazards;

**15.** Tentative proposals regarding traffic impacts; and

**16.** Preservation of viewsheds.

**b.** A conceptual plat showing the proposed configuration, size in acres, number of residential units and/or lots or the square footage of proposed nonresidential buildings, and underlying zoning categories for each use;

**c.** A topographic map prepared by a registered surveyor with a minimum 1-foot contour, or at such other intervals as approved by the Director;

**d.** A slope analysis with sufficient data to allow independent verification of the slope analysis. The slope analysis shall indicate by area the following slope categories:

**1.** less than 10 percent

2. less than 20 percent
3. less than 30 percent
4. less than 40 percent
5. 40+ percent

**e.** A plan identifying all existing structures and the conceptual location of proposed structures;

**f.** A document including all proposed modifications to basic ordinance requirements (such as lot size, setbacks, lot coverage and other criteria as indicated in the Land Development Code for that density);

**g.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

## B. Preliminary Plat

***See LDC Section 8.5.A (Preliminary Plat)***

### (1) Application Requirements

In addition to general application requirements and the conceptual plat application requirements, all preliminary plat submittals shall include the following:

**a.** A Letter of Intent (written report) shall accompany the submittal in which the applicant should describe the overall project and explain and discuss the intent of the development proposal with specific reference to the following general issues:

1. Description of the subdivision, its proposed name, and its location by section, township and range, as well as its reference by dimension and bearing to an acceptable government section or quarter section corner
2. Compliance with requirements for subdivision approval.
3. Overall design rationale and principles of the layout with specific reference to roads and internal circulation and lot layout;
4. Compatibility with surrounding land uses;
5. Anticipated environmental, visual, traffic, drainage or other impacts on the community; and
6. Any other specific area or issue requiring further explanation to assist the Director in the evaluation of the proposal;
7. A summary of all proposed modifications to basic ordinance requirements as indicated in the Land Development Code;

**b.** A preliminary plat showing the proposed configuration, size in acres, number of residential units and/or lots or the square footage of proposed nonresidential buildings, and underlying zoning categories for each use. In addition to this information, each preliminary plat shall include the following:

1. Name, address and telephone number of owner of record of the property and of the applicant if not the owner of record;
2. Name, address and telephone number of the individual preparing the plat;

3. Application number assigned by the City and assessor's parcel number(s). A placeholder may be used until an application number is assigned.
4. Scale (written and graphic), north point and date of preparation, including dates of any subsequent revision;
5. Total subdivision acreage and dimensions, and boundary lines;
6. Streets and rights-of-way providing legal access to the property. Forest Service roads are not considered adequate access, unless otherwise determined and approved by the Commission upon recommendation of the Director;
7. Typical lot dimensions (scaled); dimensions of all corner lots and lots on curvilinear sections of streets; each lot numbered individually; total number of lots or dwelling units; location and extent of construction envelopes on individual lots;
8. Designation of all land to be dedicated or reserved for public use, with use indicated;
9. The location of floodway and floodplain boundaries and base flood elevations, as determined by the Federal Emergency Management Agency (FEMA) Flood Maps, and the location of other watercourses and land subject to inundation or flood hazard. This information must be accompanied by a hydrologic/hydraulic analysis, which meets the criteria set forth in "Yavapai County Flood Control District Reference Stormwater Detention Criteria (1/9/89)," referenced as "Appendices A and B." These documents are on file with the City Engineer;
10. Location of all existing or proposed structures, walls, fences, irrigation ditches, water wells, pipelines and other physical features. The plat shall indicate which improvements are to remain, be altered or removed;
11. Proposed use of all lots or parcels to be created within the subdivision;
12. A location map showing the relationship of the proposed subdivision to main traffic arteries and any other facilities which locate the subdivision.
13. Every preliminary plat filed shall be clearly and legibly drawn on 24-by-36-inch sheet(s). The scale shall be at least 1 inch equals 100 feet.

**c.** Supplemental maps and plans with the following information. The following items may be combined where appropriate provided sufficient detail is shown to allow for review of the in information.

1. A topographic map with a minimum 1-foot contour or at such other intervals as approved by the Director;
2. A map identifying areas of existing manmade scarring and, if proposed, a restoration program;
3. A map identifying all existing structures and proposed structures;
4. A development phasing map and proposed timing schedule delineating the configuration, size in acres and general sequence of development and dedication;
5. A context map which clearly portrays any unusual visual features on or within 500 feet of the site. This presentation may include such materials, at the applicant's option, as slides, photographs, cross-sections, maps, computer simulations, perspectives or models;

**6.** A circulation map delineating the location, classification, names and widths of all major public or private streets and rights-of-way, pedestrian ways, trails and bikeways within 500 feet of the property boundary, as well as the names of adjacent subdivisions or tracts;

**d.** Preliminary construction drawings showing the following:

**1.** Location, names, areas, width, proposed grade curve, super elevations, sight distances, radii and actual field surveyed cross-sections at intervals as specified by the City Engineer for all streets and highways in the proposed subdivision. Connections to adjoining platted tracts and/or streets contained in these tracts shall also be shown;

**2.** The width and approximate locations of all existing or proposed easements or rights-of-way, whether public or private, for streets, drainage, sewers, public utilities, flood control, access to adjacent public lands or other community facilities;

**3.** Locations, elevations and sizes of culverts, storm drains and detention facilities. This information must be accompanied by a hydrologic/hydraulic analysis, which meets the criteria set forth in "Yavapai County Flood Control District Reference Stormwater Detention Criteria (1/9/89)," referenced as "Appendices A and B." These documents are on file with the City Engineer;

**4.** Proposed cut and/or fill areas showing original and proposed grade levels with elevations and contours;

**e.** Supporting documents and reports, including the following:

**1.** In areas with a slope greater than 30 percent, a soil and geology report identifying areas of unstable slopes, but only if actual construction will occur in the 30+percent slope areas;

**2.** A report by a licensed sanitary engineer describing proposed wastewater disposal;

**3.** Engineers' calculations and estimated values for each tributary storm runoff for 25-year and 100-year frequency storms, as specified in the Yavapai County Flood Control District Ordinance. The values are to be indicated along the boundary of the plat for all points of drainage entering and leaving the property;

**4.** Analysis of traffic impacts and proposed mitigation;

**5.** Sufficient data to enable the assessment of impact on scenic resources;

**6.** School or park sites which may be required;

**7.** Public safety (police and fire protection) considerations;

**8.** Estimated demand for and supply of water;

**9.** Other technical or physical data that may be required to accurately assess project impacts.

**f.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code.

### (2) Sanitary Sewage and Water Supply

**a.** As a prerequisite of preliminary plat review by the Department, the subdivider shall inform all appropriate regulatory agencies of his tentative plans and learn the general

requirements for sewage disposal, water supply and fire protection, as applied to his location.

### (3) Preliminary Plat Referral Agencies

**a.** Public Works Department and Flood Control Districts for approval of final construction drawings showing flood control, proposed street system, sewer or other approved alternate systems and water proposals;

**b.** Building Division and Parks and Recreation Department, when applicable;

**c.** County or State Health Departments, for approval of sewage disposal and water supply plans; and

**d.** State Highway Department and/or County Highway Department for approval where the plat abuts a state or county highway.

## C. Final Plat

***See LDC Section 8.5.B (Final Plat)***

### (1) Submittal Requirements

In addition to general application requirements, all final plat submittals shall include the following:

**a.** A final plat, in conformance with the approved Preliminary Plat and following the requirements of the listed below.

**b.** Any other materials and data as may be required by the Director, to ensure that the project can be accurately reviewed for compliance with the Land Development Code and the Preliminary Plat approval.

### (2) Form of the Final Plat

**a.** The final plat shall be legibly drawn, printed or reproduced by a process guaranteeing a permanent record in black ink on polyester base film that, when filed, produces good legible prints and negatives. Certificates, affidavits and acknowledgments shall be legibly stamped or printed on the plat with black opaque ink. All signatures shall be in black waterproof ink, the ink surface coated with a suitable substance when used on polyester base film to assure permanent legibility. Names and titles of signers shall be lettered legibly under their signatures.

**b.** A border line shall be drawn completely around each sheet leaving an entirely blank margin of 1/2 inch. The binding edge shall be 2 inches.

**c.** The bar scale of the map shall be a minimum of 1 inch equals 100 feet.

**d.** The exterior boundary of the subdivision shall be indicated by a heavy line.

**e.** Each sheet shall be numbered, the relation of 1 sheet to another clearly shown, and the total number of sheets shown on each sheet.

**f.** The application number, parcel number, scale, and north point shall be shown on each sheet.

**g.** The subdivider shall provide this information in digital form in a format suitable for the Director's use.

### (3) Title Sheet

Every final plat shall have a title sheet either as a separate page or on the same sheet as the final plat where the size of the subdivision permits. The title shall contain the following:

**a.** The subdivision name;

**b.** A subtitle consisting of a general description of all the property being subdivided, with reference to subdivisions or to sectional survey

**c.** s;

**d.** The basis of bearings;

**e.** References to adjacent subdivisions shall be worded identically to original records, with references to the books and pages of the subdivision;

**f.** Signature lines with date all entities whose certification is required by Section 1.1.A(7).

**g.** Name, address and registration number of the seal of the registered land surveyor preparing the plat;

**h.** Affidavits, certificates, acknowledgments, endorsements, acceptances of dedication, and notarial seals required by law and by these regulations shall appear on the title sheet;

**i.** A vicinity map showing the proposed subdivision and surrounding subdivisions, parcels and streets located within a 300-foot radius of the boundaries of the proposed subdivision shall appear on the title sheet.

### (4) Survey Data Required

The following survey data shall be required as a part of the final plat submittal:

**a.** The corners of the subdivision shall be located on the monument lines of abutting streets, boundaries of the tract to be subdivided fully balanced and closed, showing all bearings and distances determined by an accurate survey in the field. All dimensions shall be expressed in feet and decimals.

**b.** Any excepted parcels within or surrounded by the plat boundaries shall be noted "not a part of this subdivision," and shall show all bearings and distances of the excepted parcel as determined by an accurate survey in the field. All dimensions shall be expressed in feet and decimals.

**c.** Location and description of cardinal points to which all dimensions, angles, bearings and similar data on the plat shall be referenced. Each of 2 separate corners of the subdivision traverse shall be tied by course and distance to separate section corners or quarter section corners.

**d.** Location of all physical encroachments on the boundaries of the tract.

**e.** Ties to any city and county boundary lines, section corners and quarter corners involved.

**f.** The locations and names of streets; their centerlines, the lengths, tangents, radii and central angles and radial bearings of curves; the total widths of each street, the width on each side of the centerline, the width of the street being dedicated, and the width of existing dedications, if any.

**g.** All drainage ways and drainage easements shall be shown on the plat and must be accompanied by detailed construction drawings for all drainage related improvements.

**h.** Locations, dimensions, bearings, radii, arcs, central angles and net acreage of all areas to be dedicated to the public, with the use clearly indicated.

**i.** Locations and widths of utility rights-of-way.

**j.** The dimensions for, and statement of, net acreage of each lot to the nearest 1/100th of an acre. No ditto marks shall be used. Sufficient data shall be shown to determine readily the length and bearing of each lot line.

### (5) Descriptive Data Required

The following descriptive data shall be required as part of the final plat submittal:

**a.** All existing private easements within, on, or over the plat shall be indicated, dimensioned and noted as to their use.

**b.** All residential lots shall be numbered by consecutive numbers throughout the plat. "Tracts" and "parcels" shall be so designated, lettered, named, and clearly dimensioned. Parcels which are not a part of the subdivision shall be so designated.

**c.** The locations and dimensions of public areas and their net acreage.

**d.** Location of all adjoining subdivisions with recorded date, name, book and page number noted, or if unrecorded or undivided, so marked.

**e.** Any existing or proposed private deed restrictions to be imposed on the plat or any part or parts thereof pertaining to the intended use of the land to be recognized by the city shall be noted on the plat.

**f.** Limitations on rights-of-access to and from streets and lots and other parcels of land.

**g.** Locations and names of streets and pedestrian ways adjacent to the proposed subdivision.

**h.** Typical section of proposed roadways to indicate thickness and type of surfacing and thickness of base courses as determined by soil analysis. The design shall be by a qualified soils and testing consultant.

### (6) Dedication and Acknowledgment

**a.** There shall be required as part of the final plat submittal an irrevocable offer of dedication of any streets, crosswalks, drainage ways, pedestrian ways and other easements proposed for public use by any and all landowners or by parties holding titles as vendees under land contract. It may be necessary to dedicate drainage easements to the Flood Control District. If lands dedicated are mortgaged, the mortgagee shall also sign the plat. Dedication shall include a written location by section, township and range of the tract. If the plat contains private access ways, the public utilities shall be reserved the right to install and maintain utilities in the access ways, including refuse collection.

**b.** Acknowledgment of the offer of dedication shall be certified by a notary public. All parties having any record title or interest in the land being subdivided shall be included in such acknowledgments.

**c.** An offer of dedication to the city and/or Flood Control District of any streets, pedestrian ways, areas, drainage channels, easements and other rights-of-way for public use, either immediate or in the future, does not constitute public ownership or responsibility, until the Council formally accepts the offer of dedication by separate instrument.

**d.** It shall be the responsibility of the developer to contact the City Engineer within 90 days from the date of the completion of the public infrastructure to obtain the city's unconditional acceptance of required public improvements. Until the city unconditionally accepts the required improvements, these improvements shall remain the responsibility of the developer. The developer shall be responsible to contact the City Engineer in writing 10 days prior to the start of construction of public infrastructure, and monthly thereafter. The purpose of such contact shall be to advise the city of construction progress and anticipated progress during the next month. The city may, at its sole discretion, observe the construction. The developer shall remain responsible to provide inspection and testing services. Records of inspections and tests of public infrastructure shall be provided to the city upon request for a period of 3 years after written acceptance of the aforementioned infrastructure by the City Engineer.

**(7) Required Certification**

The following certifications shall be required as part of the final plat submittal:

**a.** Certification by the registered civil engineer and/or registered land surveyor that the plat is correct and accurate, and that the monuments described in it have either been set or located as described. All maps shall contain the seal of a registered civil engineer and/or land surveyor, whichever is applicable.

**b.** A certificate signed and acknowledged by any and all landowners having any interest in the land subdivided offering for dedication rights-of-access to and from prescribed streets, lots and parcels of land.

**c.** Certification by the Director that the final plat is in substantial compliance with the final plat approved by Council.

**d.** Certificate of Plat Approval by the City Engineer.

**e.** Certificate of Plat Approval by the Fire Marshal.

**f.** Certificate of Plat Approval by the Health Authority, if applicable.

**g.** Certificate of Plat Approval by the Flood Control District, if applicable.

**h.** Certificate of Plat Approval by the Mayor and Council shall be required before recording the final plat.

**i.** A Certificate of Recordation by the County Recorder shall be furnished to the city.

## D. Condominiums and Condominium Conversions

***See LDC Section 8.5.D (Condominiums and Condominium Conversions)***

**(1)** The processing of subdivision plats for condominium developments shall follow the procedures set forth for the processing of land subdivision plats.

**(2)** In addition to the general requirements for subdivisions, preliminary plats for condominiums or condominium conversions shall show:

**a.** Firewall construction, if required by the Department;

**b.** All required parking;

**c.** All required open space;

**d.** Location of individual utility lines and meters, if needed.

**(3)** In addition to the above, condominium plats shall show:

**a.** Location, height, gross floor area and proposed uses of each existing structure and each proposed structure;

**b.** Location and use of all open storage areas;

**c.** Location of all private access ways, driveways, pedestrian ways, vehicle parking areas and curb cuts;

**d.** Location of walls or fences;

**e.** Location of all landscaped areas;

**f.** Location of all recreational facilities;

**g.** Location of parking facilities to be used in conjunction with each dwelling unit;

**h.** Location of all signs;

**i.** Structural elevations shall be required at the discretion of the Director. Elevations shall indicate type of materials used in construction, as well as the method used to provide sound insulation/attenuation in all common walls;

**j.** Any other required information;

**k.** Designation of all commonly owned property, including that within buildings.

**(4)** For condominium conversions, in addition to the above, the applicant shall provide the following:

**a.** A report to the city setting forth all repairs and replacements necessary and their probable cost, to immediately place the building in substantial compliance with current Building and Safety Codes. This report shall include a report prepared by a licensed mechanical engineer verifying the condition of the mechanical elements in the project, including, but not limited to, furnaces, air conditioners, pumps, water heaters and plumbing fixtures.

**b.** A pest inspection and written report by a certified inspector.

**c.** A comprehensive building report that includes age, material, and condition, where applicable, of the following:

**1.** Type and age of construction;

**2.** Walls, interior and exterior;

**3.** Roof;

**4.** Garages;

**5.** Length of existing leases and average rents;

**6.** Average length of tenancy for existing tenants;

**7.** Estimated price range of converted units;

**8.** Estimate of available similar housing in area.

## E. Subdivision Improvement Agreements for Phased Developments

***See LDC Section 8.5.B (Final Plat)***

**(1)** Upon the approval by the Council of the final plat, the subdivider shall execute an agreement with the city that includes the following:

**a.** Provisions for satisfactory drainage, traffic movements, utilities and other services determined by the City Engineer in conjunction with required subdivision improvements for each development phase within the subdivision;

**b.** A schedule specifying the time period in which the improvements for each phase shall be completed. Circumstances under which a time extension would be granted, including a review of the adequacy of financial assurance, may be included in the agreement;

**c.** Provision of financial assurance for the construction of improvements within each phase of development:

**1.** The subdivider may apply to the City Engineer for an appropriate reduction in the amount of financial assurance retained by the city or refund of cash deposit upon completion of each phase;

**2.** Any work abandoned or not completed by the subdivider may be completed by the city, which shall recover the construction costs from the subdivider or surety;

**d.** No lots shall be released for sale from the approved development phase until either the agreement or an assurance of construction has been posted and accepted by the City Engineer.

**(2)** Notwithstanding the above provisions, a subdivider may, with the approval of the Director and the City Engineer, record a final plat for all of the proposed subdivision, yet only provide financial assurances for the construction of each phase proposed for immediate development.

## F. Submittal, Review and Approval of Improvement Plans

***See LDC Section 8.5.B (Final Plat)***

Before the recording of the plat, the following shall be filed with the City Clerk:

**(1)** A Certificate of Approval of improvement plans signed by the City Engineer;

**(2)** A copy of the executed agreement between the city and the subdivider;

**(3)** The letter of agreement with serving utilities;

**(4)** Financial assurance, cash or letter of credit in an amount specified by the City Engineer and in a form acceptable to the City Attorney.

## G. Assurance of Construction

***See LDC Section 8.5.B (Final Plat)***

**(1)** To ensure construction of the required improvements as set forth in this article, except those utility facilities defined in LDC Section 7.4.G.(4), the subdivider shall deposit with the City Engineer an amount in cash or financial assurance or other legal instrument equal to 100 percent of the cost of all work plus the fees established in the Sedona City Code to cover administrative costs, or of each approved phase (as determined by the City Engineer), guaranteeing that all work will be completed in accordance with city plans and specifications in a form acceptable to the City Attorney.

When the improvement of a street by a governmental agency is imminent, the subdivider shall deposit the current estimated costs for the improvement of such facilities commensurate with

estimated traffic impacts of the proposed subdivision, as approved by the Director, in an account to be disbursed to the city at the time the contract is awarded for the project.

**(2)** The financial assurance shall be executed by the subdivider, as principal, with a corporation authorized to transact surety business in the State of Arizona through an authorized agent with an office in Arizona. The financial assurance shall be in favor of the city and shall be continuous in form. The total aggregate liability of the surety for all claims shall be limited only to the face amount of the bond, regardless of the number of years the bond is in force. The bond or cash shall be released upon satisfactory performance of the work and its acceptance by the City Engineer. The bond may not be canceled, or the cash withdrawn by the subdivider until other security satisfactory to the city has been deposited which will cover the obligations remaining to be completed by the subdivider.

**(3)** Assurance of Construction through Loan Commitments

**a.** Instead of providing assurance of construction in the manner provided in LDC Section 7.4.D the subdivider may provide assurance of construction of required improvements (except those utility facilities defined in LDC Section 7.4.G.(4)) by delivering to the City Engineer, before recording of the plat, an appropriate agreement between an approved lending institution and the subdivider. Funds sufficient to cover the entire cost of installing the required improvements, including engineering and inspection costs and the cost of replacement or repairs of any existing streets or improvements damaged by the subdivider in the course of development of the subdivision, and approved by the City Engineer shall be deposited with such approved lending institution by the subdivider.

**b.** The agreement shall provide that the approved funds are specifically allocated and will be used by the subdivider, or on his behalf, only for the purpose of installing the subdivision improvements. The city shall be the beneficiary of such agreement, or the subdivider's rights thereunder shall be assigned to the city, and the City Engineer shall approve each disbursement from these funds. The agreement may also contain terms, conditions and provisions normally included by such lending institutions in loan commitments for construction funds or necessary to comply with statutes and regulations applicable to such lending institutions.

# Chapter 2: Design

## 2.1. Introduction

### A. General Design Intent

The general design intent of this manual is to ensure that the built environment is in harmony with the natural environment and to preserve and enhance Sedona's unique sense of place, one project at a time.

### B. Purpose

This Manual is a supplement to the City of Sedona Land Development Code (LDC). It serves as a reference for applicants when preparing development proposals and for the review and approval of all new construction, redevelopment, and renovation proposals by the City's Community Development Department and Planning and Zoning Commission. Applicants of proposed development projects must demonstrate "good faith intent" to comply with this Manual.

### C. Community Plan Vision

The Sedona Community Plan sets forth the community's vision and desired conditions for the future of the city. The Community Plan vision and vision elements (listed below) also serve as the basis for the design principles set forth in this Manual.

**Community Plan p. 7, 10-15**

***Vision:*** *"Sedona is a community that nurtures connections between people, encourages healthy and active lifestyles, and supports a diverse and prosperous economy, with priority given to the protection of the environment".*

- ***Environmental Stewardship****: Sedona is known for practices that respect and protect the natural environment, and as the responsible caretaker of one of the world's greatest treasures.*
- ***Community Connections****: We meet—at events and at random—to share experiences, help others, improve our community, enjoy the arts, and celebrate our heritage.*
- ***Improved Traffic Flow****: We travel efficiently throughout Sedona using safe roads, pedestrian and bicycle pathways, and convenient transit.*
- ***Walkability****: We enjoy the option of walking—for pleasure or purpose—from neighborhoods, shops, restaurants, transit, and trailheads, linked by safe, practical, and enjoyable routes.*
- ***Economic Diversity****: Sedona has a resilient economy, provides the highest quality of service to visitors, and offers rewarding and diverse employment opportunities.*
- ***Sense of Place****: We appreciate and respect our unique surroundings that reflect the natural beauty, arts, culture, heritage, and opportunities for physical and spiritual renewal.*

# 2.2. Design Principles

**Land Development Code Section 1.2E General Provisions, Purpose**

*The intent of this Section 5.7 is to establish site and building design standards that foster high-quality, attractive, and sustainable development that is compatible with the Sedona Community Plan principles and policies. The standards are further intended to:*

1. *Protect and enhance the character and quality of Sedona's neighborhoods;*
2. *Protect and enhance the long-term market value of property within Sedona;*
3. *Enhance the human and pedestrian scale of new developments and ensure compatibility between residential neighborhoods and adjacent nonresidential uses;*
4. *Mitigate negative visual impacts arising from the scale, bulk, and mass of large buildings and centers;*
5. *Promote building designs and construction practices that are sustainable and adaptable to multiple uses for extended building lifecycles;*
6. *Minimize negative impacts of on-site activities to adjacent uses; and*
7. *Balance the community's economic and aesthetic concerns".*

## A. Sense of Place

**Community Plan p. 15, 17, 97**

- *Sedona will have a unique and distinctive image and identity. (p. 15)*
- *Reflect a unique sense of place in architecture and design. (p. 17)*
- *Cultivate an appreciation and respect for Sedona's distinctive community character. (p. 97)*

Maintain and strengthen a recognizable identity and character that is unique to Sedona.

Foster the small-town atmosphere that emphasizes community relationships.

Designs are to be unique and distinctive to Sedona and not signature corporate, franchise, or artificial architectural stereotypes.

The scenic environment should be reflected in designs with materials, colors, textures, and plants that mirror the natural landscape.

Development should consider the surrounding context and incorporate as appropriate, the distinctive character of those qualities in its design, including the historic context.

Development layout and design should recognize, preserve, and highlight scenic vistas and viewsheds.

## B. Sense of Community

**Community Plan p. 11, 17, 97**

- *There will be people-oriented public gathering spaces throughout the City.*
- *Provide public gathering spaces that promote social interaction.*
- *Create increased opportunities for formal and informal social interactions.*

### (1) Public Spaces

**a.** Developments are encouraged to feature public spaces or common areas that will encourage gathering and social interaction.

**b.** Public spaces may be a courtyard, plaza, patio, garden, park, seating or outdoor dining area

**c.** The public space may serve as the focal point of a site or building and should be active and lively spaces that are attractive and inviting.

**d.** Commercial development should allow for and encourage pedestrian participation and interaction along its primary corridors.

### (2) Features of Public Spaces

According to the Project for Public Spaces (www.pps.org), a successful place must be 1) sociable and welcoming, 2) comfortable, safe, and clean; 3) active and engaging, and 4) accessible and convenient.

The following features should be considered in the design of public spaces.

**a.** Accessible by multiple pathways and passageways

**b.** Seating options, such as benches or tables and chairs, in either sunny or shaded areas

**c.** Public art, such as sculptures or murals

**d.** Scenic views, especially visible from seating areas

**e.** Landscaping, including shade trees and hardscape

**f.** Buffers and screening from parking and traffic

**g.** Flexible space for special events and activities

**h.** Adjacent to coffee shops, restaurants, or retail

## C. Community Context

To contribute to Sedona's sense of place, development projects must consider the surrounding area, with the goal of complementing neighboring sites and buildings and enhancing the built environment.

### (1) Alignment and Connectivity with Adjacent Developments

Projects should align with and connect to the following features of surrounding properties wherever possible.

**a.** Open space and natural areas

**b.** Drainages

**c.** Landscaping and streetscapes

**d.** Sidewalks and pathways

**e.** Driveways and parking lots

**f.** Public spaces

### (2) Corner Sites

**a.** Corner sites are visually important and site features, circulation, and appearance should be coordinated with adjacent sites on both streets.

**b.** Pedestrian and vehicle access should be provided from both streets.

**c.** Emphasize landscaping on the corner that invites pedestrian access from the intersection.

### (3) Historic Resources

**Community Plan p. 97**

- *"Preserve and celebrate the community's history."*

**a.** Historic sites, structures and features should be considered in the design of a project and retained as important reminders of our past.

**b.** Developments should consider incorporating historic structures and complementing the color, texture, form and scale of nearby historic resources.

**c.** Many historically significant buildings have been surveyed and are listed in the City of Sedona Historic Resource Survey, available from the Community Development Department.

## D. Green Building and Site Design

**Community Plan p. 71**

- *"Promote environmentally responsible building and design.*

*Under construction – to be added at a later date*

# 2.3. Environmental Stewardship

**Community Plan p. 10, 71, 86**

- *Sedona is known for practices that respect and protect the natural environment, and as the responsible caretaker of one of the world's greatest treasures.*
- *Preserve and protect the natural environment.*
- *Preserve natural open space, including areas with significant natural resource values, the riparian habitat of Oak Creek, and viewsheds such as ridgelines, scenic vistas, along highways, and gateways into the community.*

**Land Development Code Section 1.2E General Provisions, Purpose**

*Sensitively fit the built environment into the natural environment with minimal disturbance to Sedona's natural ecosystem by requiring planning, design, and development that:*

1) *Is compatible with, preserves, and enhances sensitive natural areas such as steep slopes, floodplains, watercourses, drainage ways, and ridge lines; and natural topographic features such as rock outcrops and trees;*
2) *Clusters dwellings and other structures to help save larger areas of open space and preserving natural terrain, minimizing public infrastructure costs, and preventing public safety hazards;*
3) *Minimizes adverse visual impacts on view corridors and take advantage of the natural terrain, as well as provide for public safety and human enjoyment*
4) *Minimizes construction of building pads in sensitive areas and steep slopes; and*
5) *Encourages the placement of roads and driveways so that they follow natural topography wherever possible and minimize cutting and grading.*

## A. Integrating the Built and Natural Environment

The built environment should not detract from the scenic beauty of the natural environment.

Development should minimize disturbances to the natural environment where possible, especially significant natural features such as drainages, hillsides, and native plant communities.

Disturbed areas should be restored to blend with the natural environment, matching original or adjacent topography and plant communities.

Where new development occurs adjacent to areas of open space, a soft transitional edge is recommended to create a gradual transition between the open space and the new development.

## B. Open Space and Natural Areas

**Community Plan p. 81**

- *Protect and preserve natural open space.*

Preserve natural areas that extend across property boundaries where possible, such as continuous corridors of undisturbed open space.

Drainageways should be preserved in their natural state to the maximum extent possible.

Preserve prominent hillsides and ridgelines as open space whenever possible.

## C. Oak Creek

**Community Plan p. 71, 86**

- *Protect Oak Creek and its riparian habitat.*
- *Improve and manage public access to Oak Creek within the City.*

***See LDC Section 5.7.D (Site Design)***

Oak Creek was the historic focal point of the community which was dependent on the creek's water for residences, businesses, and agriculture. The riparian habitat along the creek and tributary washes is important to accommodate flooding and to provide wildlife habitat. There is a higher diversity and density of plants found along the creek than seen in the surrounding arid uplands typical of Sedona.

Maintain the Oak Creek riparian corridor in a natural state, with only minor improvements such as trails and parks.

Preserve the Oak Creek corridor through land preservation measures, such as easements or dedications.

Drainages flowing into Oak Creek should also be retained in a natural state, as linear corridors of open space.

Provide pedestrian access along the creek where appropriate.

# 2.4. Landscaping

**Community Plan p. 15, 71**

- *The built environment will integrate the natural topography and vegetation.*
- *Sedona will have a unique and distinctive image and identity.*
- *Ensure a sufficient supply of quality water for the future.*
- *Promote environmentally responsible building and design.*

**Land Development Code Section 5.6 Landscaping, Buffering, and Screening**

*The City recognizes landscaping, buffering, and screening as important components that contribute to Sedona's sense of place by:*

1) *Blending the built and natural environments to ensure the natural landscape remains the dominant feature of the city;*
2) *Preserving the natural landscape and ensuring the use of native plants and trees to retain the unique character of Sedona's landscape;*
3) *Conserving water resources by using sustainable design and maintenance techniques and native and/or adapted plant species that are low water-use and regionally appropriate;*
4) *Realizing the environmental benefits of landscaping such as: storm water retention and infiltration, recharging groundwater, retaining soil moisture, preventing erosion, and mitigating air quality, water pollution, dust, noise, heat, and glare;*
5) *Improving the appearance of development to protect and enhance public and private investments and property values;*
6) *Establishing an attractive streetscape that contributes to the character and appearance of the city; and*
7) *Providing screening to minimize the visual impacts of some types of facilities, structures, and equipment.*

## A. Landscape Design

***See LDC Section 5.6 (Landscaping, Buffering, and Screening)***

Landscaping is an integral component of site design that can contribute to the overall appearance and function of the site. Landscaping should provide a sense of place, permanence, and continuity to a site. The following should be considered in the design of the site and in particular, the design of the landscaping.

### (1) Landscape Design Functions

**a.** Wildlife habitat

**b.** Storm water management and groundwater recharge

**c.** Soil stabilization and erosion control

**d.** Noise, dust, wind, and heat abatement

**e.** Aesthetics and enhanced property value

**f.** Extension of natural area on adjacent properties

**g.** Streetscape connection with neighboring streetscapes

### (2) Architectural Component

Landscape design can be used as an element and extension of a building's architectural design. The following are ways that landscape and architectural design can be mutually beneficial.

**a.** Scale down large buildings

**b.** Accent buildings and walls and break up flat surfaces

**c.** Delineate and accentuate entrances, pathways and pedestrian spaces

**d.** Provide shade and natural canopies for public spaces, parking lots, and pathways

**e.** Reduce glare from buildings and parking lots

**f.** Screening to conceal vehicles, utilities, and equipment

**g.** Buffering between different land uses

**h.** Frame scenic views

**i.** Highlight architectural features

**j.** Create an attractive composition of colors, textures, and forms

### (3) Xeriscape Principles

Xeriscape principles should be incorporated into the landscape design, which will ensure long-term water conservation and reduced maintenance needs. Xeriscape is far more than a landscape of rocks and cactus, it is a design approach utilizing best practices for landscaping in an arid environment.

**a.** Strategic planning and design

**b.** Select appropriate, low water use plants

**c.** Efficient and appropriate irrigation

**d.** Soil improvements

**e.** Utilize mulch to retain moisture

**f.** Alternatives to turf lawns

**g.** Plan for appropriate maintenance

### (4) Plant Selection and Placement

**a.** The selection and layout of plant materials should optimize the growth potential of each species, recognizing its special environmental and maintenance requirements.

**b.** At installation, the proposed landscape design should provide for a mix of plants of differing maturity throughout the site.

**c.** The planting of several mature trees is strongly encouraged to give a sense of permanence to a site and provide immediate impact.

**d.** Shade trees with canopies should be used throughout paved areas and in public spaces and along pathways to provide shade and to reduce heat build-up and glare.

**e.** For a more natural appearance, trees and shrubs should be grouped into informal clusters rather than symmetrical or evenly spaced rows.

### (5) Hardscape and Other Landscape Features

**a.** Grass lawns should be used sparingly as they do not reflect Sedona's natural sense of place or sustainability goals.

**b.** Large boulders can be placed in a natural and realistic manner to add a natural appearance to the landscape.

**c.** Earth mounds and berms can be used to create a more natural landscape, and serve to add relief to flat ground, provide screening, divert and collect water, and to reuse excess soil.

### (6) Drainages, Channels and Swales

The design and construction of drainage structures and improvements should blend with the landscape with minimal impacts and alterations to the natural environment while serving the needs of storm water management.

**a.** Existing native plants should be preserved wherever possible, and appropriate species should be planted along drainage edges for erosion control, emphasis and interest.

**b.** Where necessary, constructed drainage structures should be made to look as natural as possible and should be treated as a landscape element integrated with the overall design of the site.

**c.** The use of concrete channelization of drainages is strongly discouraged.

**d.** Where it may be necessary due to soil and hydraulic characteristics, drainage designs may use armoring with dry laid native or river-washed rock of a variety of shapes and sizes. This provides a more natural appearance, allows for vegetation to be planted between the rocks, and allows for infiltration.

**e.** Natural appearing check dams and gabion type structures faced with large natural rocks may be appropriate in some locations.

## B. Plant List

***See Appendix A (City of Sedona Approved Landscape Plant List); LDC Section 5.6 (Landscaping)***

### (1) Intent

**a.** The City of Sedona Approved Landscape Plant List (Appendix A) is intended for use by development projects that must comply with the LDC Section 5.6 (Landscaping).

**b.** Residents may use the list as a reference when choosing plants for their home.

### (2) Purpose

The purpose of the Plant List is to apply the Community Plan vision to the landscape component of the built environment, specifically the Sense of Place, Environmental Stewardship, and Sustainability goals.

**a.** Sense of Place

The built landscape can and should mirror Sedona's unique natural environment. Landscaping is an important and very visible component of the built environment, especially in commercial developments seen from the highway. The use of native plants is intended to blend the built landscape with the surrounding natural landscape by incorporating the same plants.

**b.** Sustainability and Water Conservation

Maintaining a sustainable environment is a fundamental goal of the community. How this relates to landscaping is the desire for a healthy, diverse, and productive ecosystem that can be sustained over time without depleting or impacting natural, cultural, or economic resources.

### (3) Listed Plants

***See Appendix A***

The Plant List (Appendix A) features plants that are considered water-wise or low water use plants, unless listed as riparian.

**a.** The plant list includes three categories: native, adaptive, and riparian plants. A separate list includes invasive weeds.

**b.** Given the LDC requirement regarding the minimum size of shrubs, the Plant List does not include shrubs or cacti that are typically less than 2' in height.

**c.** Cacti can be used in place of shrubs.

**d.** To propose plants not on the Plant List, at least two sources should confirm suitability (i.e. low water use and zone compatibility). See Resources list below for references.

### (4) Native Plants

***See LDC Section 5.6.C (Landscaping and Buffering)***

The LDC requires "a minimum of 50 percent of the plant species on a development site shall be native species".

**a.** Criteria

Plants are listed as "native" if they are known to meet the following criteria.

**1.** Naturally occur in the region surrounding Sedona

**2.** Occur at elevations between 3,500′ – 5,500′

**3.** Occur in the Verde Valley, below the Mogollon Rim.

Species from outside this area, but native to Arizona or the Four Corners region can be found under Adaptive Trees or Shrubs and are listed as regionally native.

**b.** Benefits of native plants:

**1.** Adapted and tolerant of local conditions (temperatures, rainfall, soils) and thus more resistant to drought, heat, and freezing.

**2.** Ecological benefits:

**i.** Wildlife habitat (food and shelter) that attracts and supports birds and other wildlife

**ii.** Key components of the local ecosystem and established food chain (i.e. plants/seed/pollen – insects/birds/bats)

**iii.** Pollinators such as hummingbirds, butterflies, bees, and bats have a mutually beneficial relationship with native plants

**3.** Low maintenance once established

**i.** No or less pruning, mowing or mulching

**ii.** No or less fertilizers and pesticides

**iii.** Use less water once established as native plants are adapted to Sedona's arid environment.

**4.** Compensates for the native plants lost to development.

**5.** Mirrors the natural vegetation that combined with the red rocks is the scenic landscape that attracts residents and visitors to Sedona's scenic beauty and sense of place.

### (5) Adaptive Plants

***See Appendix A and LDC Section 5.6.C (Landscaping and Buffering).***

The LDC requires "a minimum of 50 percent of the plant species on a development site shall be native species" and that adaptive plants are to be used for the balance of plant species on a development site.

**a.** Criteria

Plants listed as adaptive were selected based on the following criteria.

**1.** Low water use

**2.** Tolerance for Sedona's temperature extremes.

**b.** References

USDA zone 8a and 8b and the Sunset Western Garden Zone 10.

### (6) Riparian Plants:

Selected native plants that are found in riparian zones are included on the Plant List (Appendix A). These plants require more than average water and are only appropriate for use in the Oak Creek riparian corridor.

### (7) Resources

The following are resources that can provide details about many of the native and adaptive plants found on the plant list.

**a.** The New Western Garden Book: The Ultimate Gardening Guide. The Editors of Sunset. 2012.

**b.** Native Plants Database (www.wildflower.org/plants). The Lady Bird Johnson Wildflower Center at The University of Texas at Austin.

**c.** Missouri Botanical Garden Plant Finder (www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx)

**d.** SEINet plant database (www.swbiodiversity.org/seinet)

**e.** USDA-NRCS PLANTS Database (www.plants.usda.gov)

**f.** USDA Plant Hardiness Zones (http://planthardiness.ars.usda.gov)

**g.** Yavapai County Native and Naturalized Plants, Yavapai County Cooperative Extension (https://cals.arizona.edu/yavapaiplants/)

### (8) Invasive Weed List

***See Appendix B***

Plants on the "Invasive Weed List" (Appendix B) are prohibited. The plants on the list are non-native, invasive or potentially invasive species, focusing on those species of concern in Sedona. There may be additional, potentially invasive species not listed that are on county and state weed lists.

# 2.5. Active Transportation

**Community Plan p. 12, 57**

- *Create a more walkable and bike-able community.*
- *Walking and biking will be convenient alternatives to driving.*

***Under construction – to be addressed in future walk/bike plan***

# 2.6. Parking

**Community Plan p. 10, 12**

- *Parking will be convenient and accessible.*
- *The natural environment will be the dominant feature of the city.*

## A. Parking

The design of parking areas should provide for safe and convenient pedestrian circulation and minimize the adverse impacts of large areas of parking.

***See LDC Section 5.5 (Off-Street Parking and Loading)***

### (1) Parking Lot Design Considerations

**a.** Avoid uninterrupted pavement and large expanses of parking

**b.** Preserve large trees and natural vegetation

**c.** Landscape to provide shade, reduce glare of headlights, screen vehicles, and improve the appearance of parking areas

**d.** Alternative parking surfaces can provide delineation, permeability, and variety to the typical asphalt parking lot.

### (2) Parking Structure Design

Parking structure designs should blend with surrounding buildings and the site's topography to minimize their visual impact. Specific consideration should be given to the following:

**a.** Integration with the built and natural environment.

**b.** Activity space at ground level for a mixed-use facility

**c.** Lighting for pedestrian safety and security

**d.** On-site queuing to avoid blocking streets

**e.** Sightlines for safe entering and exiting of pedestrians and vehicles

# 2.7. Architectural Character and Building Form

**Community Plan p. 17**

- *Reflect a unique sense of place in architecture and design.*

## A. Architectural Style

***See LDC Section 5.7 (Site and Building Design)***

### (1) Purpose

The purpose of this section is to provide a general guidance for the design of buildings within the City of Sedona and to encourage development proposals that will fit within and contribute to the established or planned architectural character, form and context of a specific area.

### (2) Architectural Style

**a.** Sedona requires no specific architectural style or theme, unless identified in a CFA Plan. Inspiration should be drawn from the forms, colors and textures of our surrounding red rock setting as well as our historical heritage.

**b.** The primary criteria for determining the character and style of a building should be:

**1.** Sensitivity to the City's unique natural setting,

**2.** Sensitive to the land, rock, and vegetative forms in Sedona,

**3.** Harmonizes with the architectural styles of adjoining buildings that have demonstrated similar sensitivity.

**c.** Variety and individual expression within this framework are encouraged.

**d.** Building design should take into consideration the unique qualities and the dominant character of the surrounding area.

**e.** Transplant of architectural styles not indigenous or compatible to this area is not acceptable.

**f.** A building or structure that has been designed to be monumental in scale or unduly formal or symmetrical in character is not acceptable.

**g.** Corporate signature buildings or structures are not acceptable. Similarly, buildings that derive their image primarily from applied treatments that express corporate identity are discouraged.

**h.** Buildings that are stylized, in an attempt to use the building or portion of the building, to identify a particular user are discouraged.

## B. Proportions and Scale

***See LDC Section 5.7.F (Building Design)***

### (1) Proportion

All new development proposals should be designed so that they are in proportion to elements within the project site, adjacent and neighboring properties and the area within which they are located.

#### a. Vertical Elements

1. Vertical elements that are taller than the majority of a building, when used appropriately, can add visual interest and identity to a building or project without interfering with established view corridors or views to Sedona's surrounding red rocks.
2. Taller buildings or portions of a building should be located internally to a site or structure so that buildings step down in height as they reach the edges of the site or structure.

#### b. Sensitivity to Adjacent Buildings

1. New development should not overpower neighboring buildings. The perceived height and mass of a new project may be reduced through use of variations in building height, roofline, and grade definition, designing new buildings in proportion with the mass and floor area of existing developments, and using harmonious materials, colors and a complimentary landscape palette.
2. Where one building abuts another, the new development should attempt to show elements of "continuous connection" to neighboring buildings.

#### c. Varied Facades

1. The spacing of elements in facades should be varied rather than repetitive.
2. "Storefront" type glass walls should not be longer than 20 feet.
3. On hillsides, buildings should step down with the contours of the hillside.

### (2) Scale

#### a. Compatible Scale

Apparent scale of buildings should be compatible with the natural features of the landscape and the predominant scale of development in the surrounding area.

#### b. Human Scale

Building elements and facades, especially at the ground or pedestrian level, should be kept close to human size to achieve a sense of human scale and interest.

## C. Building Massing

***See LDC Section 5.7.F (Building Design)***

To maximize the integration of the built environment with the natural environment, and to minimize the distractions of the built environment, new development proposals should incorporate means of reducing the apparent size and bulk of buildings.

### (1) Massing

A building should reduce its apparent bulk by dividing the building into smaller masses.

### (2) Smaller Scale Components

The design of a building should reduce its perceived height by dividing the building mass into smaller scale components. One way to achieve this breakdown is to provide a well-defined base, middle and top to the building.

**a. Building Base**

The building base should establish a strong connection to the ground and site. This can be achieved by incorporating the following elements at the base of the building:

1. Low planters and walls,
2. Base planting with trees and shrubs,
3. Architectural veneer banding or a wainscot,
4. Treatments defined by different materials, textures or colors,
5. Base colors that are darker than upper level colors, or
6. Covered walkways, trellises or architectural awnings.

**b. Building Upper Levels**

The use of features such as distinct and multiple architectural roof forms, clearly pronounced eaves, and distinct parapet designs and cornice treatments may achieve a well-defined building top.

**(3) Visual Patterns**

**a. Shade and Shadow**

Clearly pronounced recesses and projections are encouraged to divide horizontal surfaces of buildings into smaller scale elements to produce strong shade and shadow.

**b. Recesses**

Recesses may be used to define courtyards, entryways, window openings, etc. along the exterior of the building.

**c. Projections**

Projections may be used to emphasize important architectural elements such as stair towers, balconies, entrances, bays, etc.

**d. Reduce Unrelieved Building Mass**

The use of covered walks, arcades, loggias, patios, trellises, recesses for plantings, wide roof overhangs, etc. are encouraged to produce interesting shadow effects and reduce unrelieved building mass.

**e. Wall Plane Offsets**

Wall plane offsets, or horizontal changes in the plane of otherwise unbroken long walls, should be incorporated into building frontages.

**f. Stepped Building Forms**

A building's mass can be reduced by "stepping" a structure down a slope and by offsetting building masses on the slope.

**g. Vertical Focal Points**

Vertical elements should be included as an integral design element to provide variety and interest to a building project and to break up its mass. Vertical elements can be used to shield elevator equipment or other roof mounted mechanical equipment.

### (4) Coherent Building Design

All sides of a building (including the roof) may impact their surroundings and should be coherently designed and treated.

**a. Coherent Design, Generally**

A facade not related to the rest of the building (such as a false front) is strongly discouraged. A consistent level of detailing, patterning and finish on all sides of a building is encouraged.

**b. Accessory Structures**

Accessory structures should take on the character of the main building, using the same colors, materials, textures, shape, and architectural style.

## D. Architectural Details

### (1) Intent

New buildings should incorporate surface detail, ornamentation, and other elements to enrich the architectural character of the new development.

### (2) Integrate Details

Building and site details shall be integrated into the design concept of the building and shall complement the building's architectural style and character.

### (3) Details of Massive Proportions

**a.** The thickness of walls should dominate, and thin elements should be used to provide detail.

**b.** Masonry elements (stucco, brick, block, rock) should "read" as thick, massive components of the development.

**c.** The proportions of exposed beams and rafters should be massive and substantial.

### (4) Desirable Details

The following architectural details are desirable and strongly encouraged:

**a. Stonework,**

**b.** Covered walkways and balconies,

**c.** Cornices, moldings, lamps, and artwork, and

**d.** Exposed beams and columns.

### (5) Undesirable Details

The following architectural details are strongly discouraged:

**a. Colored plastic and fiberglass,**

**b.** Shiny metal details,

**c.** False fronts or vigas,

**d.** Poorly proportioned "steps" in parapets, and

**e.** Other details as prohibited elsewhere in this manual.

#### (6) ATM's and Sales Kiosks

Walk-up ATM's, vending machines and similar uses should be integrated into existing or planned buildings. Access and security lighting should be carefully studied in the design and placement of ATM's. Freestanding sales kiosks are discouraged.

## E. Building Materials

***See LDC Section 5.7.F (Building Design)***

#### (1) Materials Compatible with Context Area

Building materials shall be similar to those in predominant use on the street or in the district of the new project. Where the project is adjacent to or on the site of a historic structure, the use of compatible materials is strongly encouraged.

#### (2) Building Highlights

Stone or decorative block veneers may be used to highlight significant building features and distinctive building masses.

#### (3) Limit Variety of Materials

Restraint should be used in the number of different building materials selected.

#### (4) Texture

Coarse and highly textured materials that create shadow patterns are preferred.

#### (5) Building Highlights

If stone or decorative block veneers should be used to highlight significant building features such as chimneys, columns or entrances, as well as distinctive building masses. The stone should be applied so that it does not appear to "float" on the wall or column surface, and should wrap around corners.

## F. Drive-Through Facilities

If drive-through facilities are proposed as part of a development, they should be designed as an integral component of the overall project so that they are architecturally integrated and minimize impacts to surrounding uses and on-site vehicle movements.

#### (1) Architectural Integration

Drive through elements should be architecturally integrated into the building, rather than appearing to be applied or "stuck on" to the building.

#### (2) Minimize Impacts

Drive-through windows, menu boards, equipment, and associated stacking lanes should be located to minimize impacts on adjacent residential areas and should be adequately screened from public view and the view from adjacent properties.

#### (3) Awnings and Covers

Consideration should be given to incorporating an architectural covering or awning over drive-through windows consistent with the design theme of the building. Coverings over drive-through facilities can help to achieve more variation to building mass, provide added comfort for users and help to establish more of a finished building appearance.

# 2.8. Exterior Lighting

***See LDC Section 5.8 (Exterior Lighting)***

While lighting quality is a critical aspect of the character and function of a project, it must be balanced with the City's desire to preserve the quality of our dark sky.

Just as each project should present a unique and distinct identity during the day, it should be equally well represented at night. Lighting should enhance the architecture of a project, be functional and not be offensive to its viewer or to adjacent properties.

The provisions of LDC Section 5.8 outline minimum standards for outdoor lighting. Although LDC Section 5.8 sets a maximum limit of 100,000 lumens per net acre for all developments except single-family residential uses, this cap is not intended to be achieved in all cases or as a design goal. Instead, design goals should be the lowest levels of lumens necessary to the meet the lighting requirements of the site.

## A. General Standards

### (1) Competing Light Levels

Competing light levels should be avoided. The exterior lighting design of a project must take into account background lighting levels, lighting from other sources, and the characteristics of the surrounding area.

### (2) Shielding

Light glare or excess brightness should be minimized. Mounting heights and the elevation of potential viewers must all be considered for effectively controlling glare by directing light below the horizontal. Accordingly, exterior lighting should be of low intensity and shielded so that light will not spill out onto surrounding properties.

### (3) Light Trespass

Light trespass beyond property lines should be controlled by shielding, with special consideration in areas where there is vehicle and pedestrian traffic and residential properties, or by aiming fixtures away from residential properties.

### (4) Light Spillage from Interior Fixtures

Light that spills to the building exterior from interior light sources is discouraged. If floor-to-ceiling windows are proposed, interior light fixtures should be fully shielded light fixtures.

## B. Parking Area Lighting

In addition to the general standards above, parking lot lighting should take into consideration the following:

### (1) Appropriate Location

Exterior lighting should be provided in all parking areas, with emphasis placed on appropriate lighting at the parking lot entrances, exits, and barriers. Illumination levels should be reasonably uniform throughout the parking area.

### (2) Integrate with Landscaping

Parking lot lighting should be integrated into landscape areas.

### (3) Multifamily Residential Lighting

Parking area and sidewalk light fixtures should be located to minimize interference with adjacent windows.

## C. Exterior Wall and Building Lighting

### (1) Location and Illumination Pattern

**a.** The bottom of wall mounted light fixtures should be mounted no higher than 7 feet above grade of the adjacent walking surface.

**b.** If shielded, ground mounted, or other upward directional lighting may be permitted to accent unique architectural features.

### (2) Decorative Architectural Lighting

**a.** Architectural lighting should be used to highlight special features only. Lighting of expansive wall planes or the use of architectural lighting that results in hot spots on walls or roofs should be avoided.

**b.** The use of indirect lighting techniques to create soft illumination patterns is strongly encouraged.

### (3) Surface Reflection of Light

Care should be taken in the design of exterior lighting to minimize the reflection of light from ground, wall or building surfaces that could be so visible as to appear to violate the prohibition of outward and upward lighting.

## D. Examples of Good Light Fixtures

### (1) Good Light Fixtures

The following are examples of dark sky compliant light fixtures.

## E. Examples of Bad Light Fixtures that are Discouraged

### (1) Bad Light Fixtures

Examples of unsuitable light fixtures include:

# 2.9. Signage

**Community Plan p. 10**

- *The natural environment will be the dominant feature of the city.*

***See LDC Section 6 (Signs)***

Attractively coordinated, well-designed signs enhance the image of businesses and the community. They provide clearly defined identification of individual businesses and services, stimulate the business economy, and can complement a pleasing environment for shoppers as well as the entire community.

The provisions of the LDC Article 6 outline minimum standards for signs. The standards in this manual reflect the community's desire for sign designs and placement to be sensitive to the special nature of Sedona.

## A. General Design Criteria

### (1) Integral Design Element

All signage should be an integral design element of a building's architecture, and be compatible with the project's overall character and building design in terms of size, shape, color, texture, and lighting. Signs should not visually compete with the architecture of the building and design of the site. Where appropriate, signs should conform to the character and style of existing developments within the context area of the new development.

### (2) Balance

Commercial sign plans should reflect a balance between allowing adequate signage for business identification while protecting the visual aesthetic of Sedona's streetscapes and natural environment.

### (3) Business Identity

Business identity, either by awnings, accent bands, paint or other applied color schemes, signage, parapet details, decorative roof details or materials should not be the dominant architectural feature of a building.

### (4) Logical Sign Areas

New building design should anticipate signage locations and provide power for the signs internal to the wall. Building elevations should provide logical areas for signs and allow flexibility for new users as the building is re-used over time.

## B. General Location Criteria

### (1) Integrate Sign Locations

Sign locations should be integrated with the overall design of the site and the adjacent streetscape. Integration with significant landscape elements is encouraged.

### (2) Multiple Tenant Signs

When more than one tenant shares a development site, signs should be integrated as one unit to create shared identity for the property or be located and/or designed as a unified package so that signs do not visually compete with each other.

### (3) Safe Location

Signs should be carefully located for safety, not blocking views of oncoming traffic at street intersections or driveways.

### (4) Landscaping

Signs should be placed so that they will not be obscured by landscaping when the growth reaches maturity.

### (5) Readability

Signs should be located to promote ease of readability and serve their intended function. The scale of the sign should relate to the intended viewer; signs for pedestrians would therefore be of a smaller scale than signs for moving vehicles.

## C. General Design Recommendations

### (1) Materials

Materials used in signs should be compatible with those used on the site and where appropriate, within the context area of the new development. The use of a stone base to anchor the sign to the ground is encouraged.

### (2) Color

**a.** On most signs, no more than three colors (excluding black and white) should be used.

**b.** When an illustration is incorporated into the sign, complementary colors should be used in harmony with the general tone of the building.

**c.** Light letters on dark backgrounds are preferred.

### (3) Simplicity

Design simplicity is the key factor in good design and readability.

### (4) Repetitious Signage

Repetitious signage information on the same building frontage should be avoided.

### (5) Individual Letter Signs

Signs made up of individual letters are encouraged. Back lit letters are preferred. Visible raceways and transformers for individual letters are discouraged.

### (6) Monument Signs

Where monument signs are permitted, the use of natural stone is encouraged.

### (7) Illumination

**a.** The recommended method of illumination is by either internally illuminated signs or letters (such as a reverse pan channel letter) or by light projected onto the sign from light sources mounted above the sign.

**b.** All ground mounted lights should be placed in such a manner that the angle of the lamp projects upwards at an angle no greater than 45 degrees measured from a horizontal plane to a line projected through the center of the lamp. Shields should be installed to direct the light on to the sign only.

### (8) "OPEN" Signs

The use of illuminated open signs is strongly discouraged as it detracts from the small-town quality and character of Sedona.

# Chapter 3: Engineering

## 3.1. Grading and Drainage Permits

*See LDC 5.3 Grading and Drainage*

### A. Purpose

**(1)** The purpose of this Section is to provide for the public health, safety, and general welfare; to protect the environment by regulating excavation and grading on property; to reduce siltation into the unique waters of Oak Creek; and to preserve and enhance the natural environment including, but not limited to, the natural land forms and vegetation of the city.

**(2)** All excavation and grading shall be performed in accordance with the provisions of this Manual but shall not be construed to prevent the enforcement of other laws which prescribe more restrictive limitations, nor shall the provisions of this article be presumed to waive any limitations imposed by other statutes or ordinances.

**(3)** The Section sets forth rules to regulate and control earthwork construction, including excavation embankments, grading and drainage on property located within the city; establishes the administrative procedure for issuance of permits; and provides for approval of plans, specifications and inspection of such construction.

### B. Applicability

No person shall do any grading, filling, excavating, cutting or other site earthwork without first submitting plans; drawings; engineering studies; supporting data, including the quantity of cut and the quantity of fill; and such other information as required by the City Engineer and Director.

### C. Minor Modifications

The City Engineer may grant minor modifications to the provisions of this Manual and amendments relating thereto when there exists an unnecessary hardship substantially limiting the preservation and enjoyment of property rights and resulting from a literal interpretation of this Manual and amendments relating thereto. Minor modifications shall not be authorized unless it is found that:

**(1)** Special circumstances or conditions apply to this permit application; and

**(2)** Authorizing of the minor modification is necessary for the preservation and enjoyment of substantial property rights; and

**(3)** Authorizing of the minor modification will not be materially detrimental to the persons residing or working in the vicinity, to adjacent property, to the neighborhood or to the public welfare in general; and

**(4)** Granting of the minor modification will be in harmony with the purposes stated above.

### D. Permit Required

Except as provided in Exemptions below, no person shall commence grading without first obtaining a building permit and a grading permit from the Community Development Department. A separate grading permit shall be required for each site, and may cover both excavation and fills.

A permit issued for grading, filling, excavating, cutting or other site earthwork shall comply with the requirements of this Manual.

Complete development and Site Plan approval on proposed projects in their entirety shall be required.

## E. Exemptions

### (1) Grading Permit Not Required

Construction of a single-family dwelling involving cumulatively less than 1,000 cubic yards of grading, as defined as the sum of cut and fill relative to original contours, shall be exempt from the provisions of this Section.

### (2) Activities Authorized by the City Engineer

The following activities may be authorized by the City Engineer without formal issuance of a grading permit but otherwise must be fully in accordance with this Chapter:

**a.** Compacted or contained fill less than one foot in depth and placed on natural terrain with a slope flatter than five horizontal to one vertical or less than three feet in depth, not intended to support structures and which, in either case, the fill shall not exceed 50 cubic yards on any one site and, in either case, shall not obstruct a drainage course.

**b.** An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from such excavation nor exempt such an excavation having an unsupported height greater than five feet after the completion of such structure.

**c.** Excavation or depositing of earth materials within a property which is dedicated or used, or to be used, for cemetery purposes not obstructing a watercourse, except where such grading is within 100 feet of the property line or intended to support structures.

**d.** Excavations performed in drilling a water supply well.

**e.** An excavation which:

**1.** Does not exceed 50 cubic yards; and

**2.** Does not obstruct a drainage course; and

**3.** Is less than two feet in depth; or

**4.** Which does not create a cut slope greater than five feet in height and steeper than two horizontal to one vertical.

**f.** Mining, quarrying, excavating, processing, stockpiling of rock, sand, gravel, aggregate or clay where established and provided for by law; provided, that such operations do not:

**1.** Affect the lateral support;

**2.** Unduly increase the stresses in or pressures upon any adjacent or contiguous property;

**3.** Do not physically infringe on adjacent property;

**4.** Include detrimental excavation or stockpiling;

**5.** Result in degradation of scenic views.

**g.** Grading in public rights-of-way and easements done under a permit issued by the office of the City Engineer.

**h.** Sanitary landfills and refuse disposal areas which are regulated by the Coconino and Yavapai County Health Departments.

**i.** At least 5 city working days prior to the placement of fill or excavated material from a grading project within the city on other properties located within the city, the City Public Works Department shall be notified in writing of the intent to place the material on other property. This requirement shall apply when the total amount of material placed on other properties within the city exceeds 40 cubic yards or if the other property on which the fill is to be placed is located within 0.75 miles of Oak Creek, or lies within a city-designated floodplain. Pursuant to the provisions of this Code and other city, state, or federal regulations, the City Engineer may approve or deny permission to place such material. This requirement shall apply to all grading within the city, whether a specific permit is issued or not.

## F. Grading Permit Submittal Requirements

### (1) Activities Authorized by the City Engineer

**a.** Each application for a grading permit shall be accompanied by plans and specifications, and may require supporting data consisting of a soils classification, soil engineering report, and engineering geology report as determined by the City Engineer.

**b.** A soils classification is required for all residential structures, and accessory structures, including residential additions.

**1.** If the soils classification determines the soils have a plasticity index of 15 or greater, or otherwise proves conditions necessitate such a report, then a soil engineering and engineering geology report is required and shall meet the requirements of Chapter 3.1.F.(4) and 3.1.F.(5).

**2.** Non-habitable structures on residential properties (attached or detached) that are 400 square feet or less (such as sheds, garages, and decks) can submit a soils classification waiver in lieu of providing a soils classification.

**i.** A non-conversion agreement recorded with the applicable county is required for any enclosed structure for which a soils classification waiver is submitted.

**c.** The information and documentation shall clearly indicate the extent and nature of the work proposed, and the location of temporary construction envelope fences required to be erected in conformance with the provisions of Section 3.1.L (Construction Envelope).

**d.** Plans and specifications shall be prepared and signed by a civil engineer, defined as a professional engineer registered in the State of Arizona to practice in the branch of civil engineering, when required by the City Engineer.

**e.** Plans shall be drawn to scale and supplemented with a bar graph to preclude changes via enlargements or reductions upon substantial paper, and in addition may be stored on an acceptable electronic format as specified by the City Engineer, and shall be of sufficient clarity to indicate the nature and extent of the work proposed, and show in detail that they will conform to the provisions of this Manual and all relevant laws, codes, rules and regulations.

**f.** Plans that are excessively smudged or poorly printed or drawn shall not be accepted by the City Engineer.

**g.** All measurements must be in English units (i.e., feet).

**h.** Specifications shall contain information covering construction and materials requirements.

### (2) Required Information on Plans

**a.** The first sheet of each set of plans shall give the location of the work, the name and address of the property owner, and the person by whom they were prepared;

**b.** Specific location, assessor tax parcel number(s) and zoning district classification;

**c.** Property limits and accurate contours at two-foot intervals of existing ground and details of terrain and area drainage with a north indicating arrow. Where improvements are nearing proximity to property limits, a land boundary survey complying with the current Arizona boundary survey minimum standards shall be required at the discretion of the City Engineer.

**d.** Limiting dimensions, elevations of finish contours to be achieved by the grading and proposed drainage channels and related construction;

**e.** Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work together with a map showing the drainage area and the estimated runoff of the area served by any drains;

**f.** Location of any buildings or structures on the property where the work is to be performed and the location of any buildings or structures on land of adjacent property owners which are within 15 feet of the property or which may be affected by the proposed grading operation;

**g.** Proposed structure location, including its external dimensions and use;

**h.** Any existing structure location, including its external dimensions and use;

**i.** Location and specification of temporary traffic and parking surfaces complying with the dust control requirements of 3.1.H(5) (Dust Control Requirements)

**j.** All watercourses regulated by state or local agency on the subject lot or within 300 feet of existing or proposed buildings;

**k.** Adjacent alleys, roads, streets or means of access;

**l.** Location of driveway(s) and distance to nearest property line;

**m.** Building erosion hazard setback distances measured from nearest top of bank or floodway. The minimum distance must meet the standards outlined in State Standard SS5-96;

**n.** Distance(s) from existing and proposed buildings to property line;

**o.** Distance(s) between buildings (if applicable);

**p.** Location of entire septic system (if applicable);

**q.** Location of all on-site utility poles, meters (and elevations), lines, etc.;

**r.** Terrain slope – local drainage flow directions;

**s.** Slope information (may be given in units of feet per foot or percentage of slope);

**1.** Indicate high point and low point of subject lot if terrain slopes;

**2.** Indicate by arrow or contour the direction of terrain slope;

**3.** Indicate difference in elevation between high point and low point of lot; and

**4.** Field photographs with scale of watercourse;

**t.** All road cuts or fills within 50 feet of the subject parcel, roadside ditches and culverts (including size);

**u.** Location and type of walls and fences (and adjacent property), existing and proposed. Details of how the drainage is routed through or around these structures shall be provided when applicable;

**v.** Lowest floor elevation and elevation of lowest enclosed area;

**w.** A minimum of one cross-section of the parcel drawn to an appropriate scale. The cross-section should include the proposed development residential site. The cross-section should include the watercourse;

**x.** Grading limits, including the toe of fill slopes, and proposed changes to existing elevations;

**y.** The Site Plan must include floodplain boundaries. Indicate on which side of the floodplain boundary line the floodplain lies. It must be noted on the Site Plan if the entire property is located in the floodplain;

**z.** Administrative floodplain limits;

**aa.** All easements;

**bb.** Temporary benchmark;

**cc.** In addition to providing floodwater surface elevations, floodplain limits and floodway limits for use in fulfilling the requirements of Flood Insurance Studies, local community officials may require the information specified in State Standard Attachment 6-05 (SSA 6-05) or by an alternative procedure reviewed and accepted by the City Engineer; and

**dd.** A schedule of work, including:

**1.** When grading will begin;

**2.** When temporary erosion control and vegetation protection will occur;

**3.** When initial grading will be completed;

**4.** When all construction slash, debris and vegetation remains will be removed to a specified authorized site;

**5.** When permanent erosion control devices will be installed;

**6.** When revegetation will occur;

**7.** When construction of all grading is to be completed; and

**8.** Such additional information as the City Engineer may require for monitoring the schedule.

### (3) Supplemental Submittal Requirements

In addition to the information required above, occasionally supplemental information may be required. Such information may include but is not necessarily limited to:

#### a. Topography

1. If topography is included, the Site Plan must indicate the vertical datum used, the description of the elevation reference mark, the date of the topography, and the contour interval (in feet). If the topography is obtained from a public source, that source must be referenced.
2. Topographic contours must be labeled, and index contours must be included. Note the use of topography on a Site Plan may require the certification of an Arizona registered professional such as a registered land surveyor, civil engineer or architect. Local and state regulations must be reviewed to determine if certification is necessary.

#### b. Water Surface Elevations

1. If water surface elevations are included, the source of those elevations must be referenced. The vertical datum must be referenced.
2. If topography is on the Site Plan, both water surface elevations and the topography must be on the same vertical datum.

#### c. Bank Protection

Bank protection must be in conformance with State Standard SS7-98.

#### d. Location of Any Proposed Underground Utilities

If the utility crosses a watercourse the depth of the utility below the watercourse must be indicated.

#### e. Venting

1. Details of venting of fully enclosed, uninhabitable areas below the regulatory flood elevations designed to equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters in accordance with guidelines of the National Flood Insurance Program Regulations 44 CFR Section 60.3.
2. Uninhabitable areas below the regulatory flood elevation are to be solely for vehicle parking or storage. This does not include proposed basements, which are not allowed in a floodplain.

### (4) Soil Engineering Report

The soil engineering report, prepared by an Arizona registered geotechnical engineer, when required by this section shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures including buttress fills when necessary, and opinions and recommendations, covering adequacy of sites to be developed by the proposed grading, including stability of slopes

### (5) Engineering Geology Report

The engineering geology report, prepared by an Arizona registered geotechnical engineer, when required by this section shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed

development, and opinions and recommendations covering the adequacy of sites to be developed by the proposed grading.

**(6) Drainage Maintenance Schedule/Plan**

A Drainage Maintenance Schedule/Plan for stormwater retention and/or detention systems, general trash and debris control, stormwater conveyance structures, and post-construction stormwater quality controls shall be submitted to and approved by the City Engineer.

## G. Bonds

**(1) Bonds Required**

A permit shall not be issued for more than 5,000 cubic yards of grading or lesser amounts of grading if specified by the City Engineer unless the permittee shall first post with the Director a cash bond or a bond executed by the owner and a corporate surety authorized to do business in Arizona as a surety in an amount sufficient to cover the cost of the project, including corrective work necessary to remove and eliminate geological hazards, all as determined by the City Engineer.

**(2) Conditions**

Every bond shall include the conditions that the permittee shall:

**a.** Comply with all of the provisions of this article, applicable laws and ordinances;

**b.** Comply with all of the terms and conditions of the permit for excavation or fill to the satisfaction of the City Engineer and the Director;

**c.** Complete all of the work contemplated under the permit within the time limit specified in the permit or below, 3.1.H (Grading Permit Limitations and Conditions). If the Director extends the time specified in the permit, no such extension shall release the surety upon the bond.

**(3) Failure to Complete Work**

The term of each bond shall begin upon the date of filing and shall remain in effect until the completion of the work to the satisfaction of the City Engineer and the Director. In the event of failure to complete the work and failure to comply with all of the conditions and terms of the permit, the City Engineer may order the work required by the permit to be completed to his satisfaction.

The surety executing such bond or deposit shall continue to be firmly bound under a continuing obligation for the payment of all necessary costs and expenses that may be incurred or expended by the governing agency in causing any and all such required work to be done. In the case of a cash deposit, said deposit or any unused portion thereof shall be refunded to the permittee.

**(4) Assurance of Construction Through Loan Commitment**

In lieu of providing assurance of construction in the manner provided above in this section, the permittee may provide assurance of construction for grading improvements by delivering to the City Engineer, prior to the issuance of a permit, an appropriate agreement between an approved lending institution and the permittee, stating that funds sufficient to cover the entire cost of performing the proposed work, including engineering and inspection costs, in an

amount approved by the City Engineer, have been deposited with such approved lending institution, or have been committed to be loaned by such lending institution to the permittee.

Such agreement shall provide that such funds in the stated amount are specifically allocated and will be used by the permittee, or on his behalf, only for the purpose of performing the grading improvements. The city shall be the beneficiary of such agreement or the permittee's rights thereunder shall be assigned to the city, and the City Engineer shall approve each disbursement of any such funds. The agreement may also contain terms, conditions and provisions normally included by such lending institutions in loan commitments for construction funds, or as may be necessary to comply with statutes, codes and rules applicable to such lending institutions. In the event a bond or approved assurance for the proposed work is provided through some other ordinance or stipulation, a second assurance to fulfill this article shall not be required.

## H. Grading Permit Limitations and Conditions

### (1) General

**a.** The issuance of a grading permit shall constitute an authorization to do only that work which is described or illustrated on the application for the permit or on the Site Plans and specifications approved by the City Engineer.

**b.** The issuance of a permit or the approval of drawings and specifications shall not be construed to be a permit for, nor the approval of, any violation of or deviation from the provisions of this article or any other ordinance, code, law, rule or regulation. A permit issued shall be invalid if, in the work completed, a violation of this article or deviation therefrom ensued. When such violation occurs, the permit shall be deemed to be canceled and the ground shall be restored to the condition it was in prior to start of the grading work.

**c.** The issuance of a permit, based upon drawings and specifications, shall not prevent the City Engineer or the Director from thereafter requiring the correction of errors in said drawings and specifications or from stopping unlawful construction operations being carried on thereunder.

### (2) Jurisdiction of Other Agencies

Permits issued under the requirements of this article shall not relieve the owner of responsibility for securing required permits for work to be done which is regulated by any other ordinance, department or division of the city or other governing agency including but not limited to the Army Corps of Engineers. A grading permit shall not be issued until all required permits are obtained from the Arizona Department of Environmental Quality, the County Health Departments, the County Flood Control District and other agencies of jurisdiction.

For commercial projects, a city right-of-way permit shall be required for all work performed within city rights-of-way. For detached single-family residential permits, the grading permit shall be sufficient for all work confined within the property lines, and typical driveway connections to the street, and associated landscaping and drainage devices.

Every attempt shall be made to do no work or store no materials within city rights-of-way (i.e., porta-potties, dumpsters, construction materials, etc.). In the event that this is not possible, a

right-of-way permit shall be secured prior to working within, or placing anything within, the right-of-way. In the event that unloading of materials or equipment onto the site from the right-of-way takes place, proper traffic control methods, including flagmen, shall be provided at all times. Extensive street blockages require a right-of-way permit.

**(3) Time Limits**

The permittee shall fully perform and complete all of the work required to be done pursuant to the grading permit within the time limit specified. If no time limit is specified, the permittee shall complete the work within 180 days after the date of the issuance of the grading permit. If the permittee is unable to complete the work within the specified time, he shall, prior to the expiration of the permit, present in writing to the Director a request for an extension of time, setting forth the reasons for the requested extension. If, in the opinion of the Director, such an extension is warranted, he may grant additional time for the completion of the work.

**(4) Storm Drainage Precautions**

All persons performing any grading operations shall put into effect all safety precautions which are necessary in the opinion of the City Engineer and provide adequate anti-erosion and/or drainage devices, debris basins or other safety devices to protect the life, limb, health, property and welfare and private and public property of others from damage of any kind, and to be fully in accord with all ordinances, policies and procedures of the Yavapai County Flood Control District, pursuant to LDC 5.3

**(5) Dust Control Requirements**

All persons performing any grading, site clearing, grubbing, trenching, drilling, blasting or soil screening shall put into effect dust prevention measures deemed necessary by the City Engineer to mitigate the generation of excessive airborne dust by such operations and/or related construction activity. The required dust prevention measures shall be maintained during the entire period of construction and until the project is completed and receives final inspection approval of the City Engineer. The minimum requirements for dust control on each site, whether a formal grading permit is issued, are as follows:

**a.** All vehicular traffic and parking shall be restricted to existing paved driveways and parking areas where available or to temporary driveways and parking areas surfaced with clean rock, gravel or other pre-approved materials in a manner acceptable to the City Engineer. Temporary surfacing shall be adequately compacted to support the anticipated wheel loads and resurfaced or retreated as necessary to maintain a dust-free area to the satisfaction of the City Engineer. For projects other than a detached dwelling on a single site, when plans are required to be submitted pursuant to this Section, plans indicating the location, material, installation and maintenance of temporary driveways and parking areas shall accompany each permit application. The traffic surfacing must be applied prior to putting the traffic surface into service. For a single detached dwelling on a site, temporary traffic surfacing must be applied prior to putting the traffic surface into service. The type of temporary traffic surfacing shall be specified on the grading plans, and may include no less than 2-inch thickness of 3/4-inch aggregate, 1-inch asphalt pavement, or other approved surfacing. The surface shall be adequate to reduce tracking and blowing dust. At no time shall vehicles or construction equipment be allowed to park on or travel across adjacent lots or parcels without first obtaining written permission of the appropriate property owner. Approved use of adjacent properties for parking of vehicles, construction equipment and storage of materials shall comply with the requirements of this section and shall be

revegetated after the completion of construction pursuant to 3.2.D (Grading, Inspection, Cuts, Fills, and Supervision).

**b.** When weather and soil conditions are such that excessive airborne dust may be generated by construction equipment, loading or unloading of construction materials, grading, site clearing, grubbing, trenching or soil screening operations on any site, water sprinkling, or other suitable methods shall be employed to limit the amount of airborne dust and dirt to the lowest practicable level as determined by the City Engineer;

**c.** All exposed excavations, fill material, stockpiled soil and rock, and trench soil on all sites shall be treated with water, a dust palliative or other pre-approved materials and methods that will act as a binder for soil particles and reduce the amount of free, loose dust on the exposed surfaces. Treatment shall be initiated as soon as possible after excavations are exposed and fill or spoil materials are deposited. Treatment shall be continued and maintained through all phases of construction to the satisfaction of the City Engineer;

**d.** When conditions are such that vehicles or equipment leaving any construction site may track or deposit mud, dirt, or other debris on public rights-of-way within the city, the contractor shall take all reasonable practicable steps to prevent such tracking or deposit of said materials. In the event such materials are tracked or deposited on public or private rights-of-way as a result of vehicles or equipment leaving any construction site, it is the responsibility of the contractor to remove these materials from such rights-of-way with all reasonable speed and diligence. Methods used to achieve this will be such that no mud, dirt, silt, or debris shall enter the storm drain system. If mechanical sweepers are utilized, sweepers shall be of the vacuum type. The bulk of the material shall be removed by other methods prior to sweeping. Safety precautions and traffic control shall be provided at all times.

### (6) Conditions of Approval

In granting any permit under this article, the Director or City Engineer may attach such conditions as may be reasonably necessary to prevent creation of a nuisance or hazard to public or private property. Such conditions may include, but shall not be limited to:

**a.** Best management practices (BMPs), the criteria for which shall be determined by the City Engineer, shall be incorporated at all times for all dust control, runoff water quality, and erosion control measures. These measures shall be incorporated into both the temporary and finished aspects of the project. Schedules and criteria for maintenance of both the temporary and permanent BMPs incorporated into the project shall be identified on the grading plans.

**b.** Compliance with Dust Control Requirements of This Code, Other City Ordinances, the Coconino and Yavapai County Health Departments and the State Department of Environmental Quality. Vehicles carrying loads shall have them covered with a secure tarpaulin or other covering to prevent the load from spilling or blowing from the vehicle. All loads and loose material subject to dropping from vehicles, being sifted from vehicles or otherwise escaping from vehicles shall be covered when traveling on a public street or highway within the City of Sedona. Water sprinkling, dust palliatives, or other suitable methods shall be employed at all times to limit the amount of airborne dust and dirt to the lowest practicable level as determined by the City Engineer, and to prevent airborne dust particles from migrating off site. Excavation and grading shall be halted when conditions render mitigation methods ineffective. Methods to prevent tracking of dirt and other

materials from the construction site onto public streets or highways within the City of Sedona shall be incorporated at all times. Removal of tracked, dropped, sifted or otherwise deposited material on public streets and highways within the City of Sedona shall occur daily, or as deemed necessary by the City Engineer, to avoid the occurrence of dust, excessive mud, hazard, or nuisance to the public using the roadway. "Public using the roadway" includes vehicles and pedestrians. Water or other substances may be sprinkled on the roadway for the purpose of cleaning or maintaining the roadway.

**c.** Every attempt shall be made to do no work, or store no materials within city rights-of-way (i.e., porta-potties, dumpsters, construction materials, etc.). In the event that this is not possible, a right-of-way permit shall be secured prior to working within, or placing anything within, the right-of-way. In the event that unloading of materials or equipment onto the site from the right-of-way takes place, proper traffic control methods, including flagmen, shall be provided at all times. Extensive street blockages require a right-of-way permit.

**d.** Requirements for fencing of excavations or fills which would otherwise be hazardous.

**e.** Improvement of any existing site condition to bring it up to standards of this article.

**f.** All tree material and other vegetation cut or grubbed from the site shall immediately be placed in a dumpster or dump truck, then removed from the site and properly disposed of, outside the city limits, within 48 hours.

**g.** Measures shall be employed at all times to prevent erosion and the entrance of material into the storm drainage system. Provisions shall be made to trap and remove material entering the storm drainage system. The storm drainage system includes all gutters, ditches, pipes and channels. Flushing and cleaning of concrete trucks, mixers, etc., shall not be done in such a manner as to allow the migration of water or material off site.

**h.** All portions of the sewer system, including main lines, laterals, and cleanouts, shall be capped or otherwise protected at all times to prevent foreign objects and debris from entering the City of Sedona sewer system. Active lines should be protected at all times from breakage and disturbance in order to prevent spills.

**i.** For projects involving grading of more than 5,000 cubic yards, a haul plan, a dust control plan, a topsoil reutilization plan, a stormwater pollution prevention plan, and a traffic control plan shall be required. Each must be acceptable to and approved by the City Engineer.

**j.** Hours of work shall be 7:00 a.m. to 6:00 p.m., Monday through Friday. Work hours are 9:00 a.m. to 5:00 p.m. on Saturday. No work shall occur on Sunday.

**k.** A lowest floor elevation verification, confirming the elevation of the nearest upstream manhole and the new structure's lowest floor elevation, shall be provided by an Arizona registered Land Surveyor, and submitted to the City Engineer at the time of completion.

### (7) Liability

Neither the issuance of a permit under the provisions of this article nor the compliance with the provisions hereof, or with any conditions imposed in the permit issued hereunder, shall relieve any person from responsibility for damage to other persons or property, nor impose any liability upon the city for damage to other persons or property.

### (8) Revocation

Should the City Engineer or the Director find the work under any permit issued under these provisions is not proceeding in accordance with the drawings, specifications and details of the application upon which such permit was issued, or is proceeding in violation of this article or any other ordinance of the city, or should he find that there has been any false statement or misrepresentation as to a material fact in the application or payment for said permit or plans on which the permit was based, the Director shall notify the person obtaining the permit and the owner that such work fails to conform to said permit, or that the permit was obtained by false representations and that such failure in obtaining the permit be corrected without delay. If the owner or person obtaining the permit fails or refuses to make such correction within the time specified in said notice, the Director shall revoke such permit and serve notice of such revocation upon such person to whom the permit was issued. Such notice shall be in writing and signed by the Director. It is unlawful for any person to proceed with any part of such work after such notice is served. When necessary, law enforcement personnel shall be employed to ensure compliance.

## I. Denial of Permit

### (1) Geological or Flood Hazard

If, in the opinion of the City Engineer, the land area for which grading is proposed is subject to geological or flood hazard to the extent that the proposed corrective work will not eliminate or sufficiently reduce the hazard to human life or property, the grading permit and the building permits for habitable structures shall be denied.

### (2) Unlawful Grading

The Director shall not issue a permit in any case where he finds that the work as proposed by the applicant will endanger any private property or result in the depositing of debris or soils on any public way or seriously interfere with any existing drainage course. However, if it can be shown to the satisfaction of the City Engineer that the hazard would be essentially eliminated by the construction of retaining structures, buttress fills, drainage devices or by other means, the Director may issue the permit.

## J. Grading Permit Fees

Before issuance of a permit, the Director shall collect the fees set forth in the Consolidated Fee Schedule. Such fees shall be paid in lawful money of the United States or by collectible draft or check. Should such draft or check be uncollectible within 15 days, the permit shall be null and void.

### (1) Plan Checking Fee

For excavation and fill on the same site, the fee shall be based on the volume of the excavation or fill, whichever is greater. Before accepting a set of plans and specifications for checking, the Director shall collect the plan-checking fee. Separate permits and fees shall apply to retaining walls or major drainage structures as stated elsewhere in this article. There shall be no separate fee for standard terrace drains and similar facilities as determined by the Director. The amount of the plan-checking fee for grading plans shall be set forth in the Consolidated Fee Schedule.

### (2) Grading Permit Fee

A fee for each grading permit shall be paid to the Director as set forth in the Consolidated Fee Schedule. For excavation and fill on the same site, the fee shall be based on the volume of the excavation or fill, whichever is greater.

## K. Safety Precautions

**(1)** If at any stage of the work the City Engineer determines by inspection that further grading as authorized will endanger any property or result in the depositing of debris on any public way or interfere with any existing drainage course, the City Engineer shall require, as a condition to allowing the work to be completed, that such reasonable safety precautions be taken as he considers advisable to avoid such likelihood of damage.

**(2)** Notice to comply shall be submitted to the permittee and owner in writing by the City Engineer. After a notice to comply is written, a period of 10 days shall be allowed for the contractor to begin to make the corrections unless an imminent hazard exists, in which case the corrective work shall begin immediately.

**(3)** If the City Engineer finds any existing conditions not as stated in the grading permit or approved plans, he may refuse to approve further work until approval is obtained for a revised grading plan which will conform to the existing conditions.

**(4)** The City Engineer may specify methods of dust control, including but not limited to mechanical and vacuum sweeping, and flushing of road surfaces.

**(5)** All drainage facilities impacted by site runoff or flushing activities shall be cleaned of accumulated debris, soil and rock.

**(6)** The City Engineer may specify temporary erosion control measures, including but not limited to silt fences and keyed straw bales.

## L. Responsibility of Permittee

### (1) Compliance with Plans and Requirements

All permits issued hereunder shall be presumed to include the provision that the applicant, his agent, contractor or employees shall carry out the proposed work in accordance with the approved plans and specifications and in compliance with all the requirements of this article.

### (2) Protection of Utilities

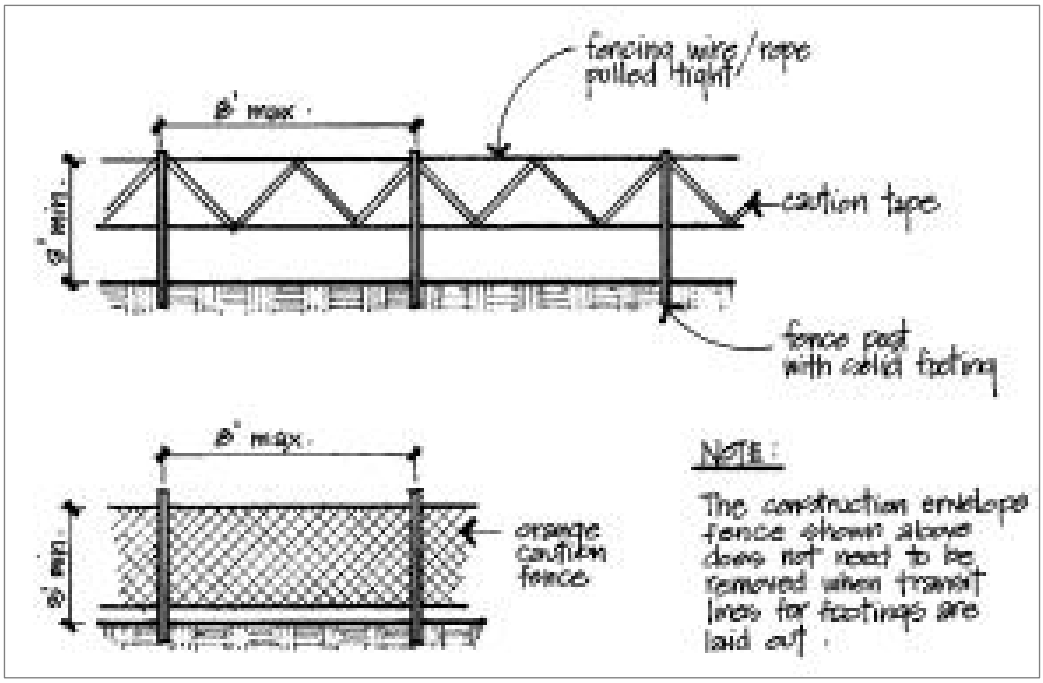
During the grading operations, the permittee shall be responsible for the prevention of damage to any street or drainage facilities or to any public utilities or services. This responsibility applies within the limits of grading and along any routes of travel of equipment.

### (3) Protection of Adjacent Property

The permittee is responsible for the prevention of damage to adjacent property, and no person shall excavate on land sufficiently close to the property line to endanger any adjoining public street, sidewalk, alley or other public or private property prior to supporting and protecting such property from settling, cracking or other damage which might result.

### (4) Construction Envelope

Prior to the issuance of a building permit, and during construction activities, the construction envelope shall be clearly designated on the property by a fence a minimum of 3 feet high and staked at 8 feet on center to protect all natural vegetation outside of the construction envelope. See illustration below.




### (5) Surplus Material

All surplus excavated material shall be removed from the lot or parcel.

## M. Modification of Approved Plans

No modification of the approved grading plans may be made without the approval of the City Engineer. All necessary revisions to soils and geological reports shall be submitted with the revised plans.

## N. Completion of Work

### (1) Final Reports

Upon completion of the rough grading work, and at the final completion of the work, the City Engineer or the Director, or both, may require the following reports, drawings and supplements thereto covering the following subjects:

**a.** An as-graded grading plan prepared by the civil engineer, including original ground surface elevations, as-graded ground surface elevations, lot and parcel drainage patterns, and locations and elevations of all surface and subsurface drainage facilities. The civil engineer shall provide certification that the work was accomplished in accordance with the approved final grading plan;

**b.** A soil engineering report prepared by the soil engineer, including locations and elevations of field density tests, summaries of field and laboratory tests, and other substantiating data

and comments on any changes made during grading and their effect on the recommendations made in the soil engineering investigative report. The soil engineer shall provide certification as to the adequacy of the site for the intended use;

**c.** An engineering geology report prepared by the engineering geologist, including a final description of the geology of the site, any new information disclosed during the grading, and the effect of these facts on the recommendations incorporated in the approved grading plan. The engineering geologist shall provide certification as to the adequacy of the site for the intended use as affected by geological factors.

**(2) Notification of Completion**

The permittee or his agent shall notify the City Engineer when the grading operation is ready for final inspection. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices and all erosion control measures, has been completed and the final reports have been submitted and accepted by the City Engineer.

# 3.2. Grading and Drainage Design Standards

***See LDC 5.3 Grading and Drainage***

## A. General Requirements

### (1) Dust Control Requirements

#### a. Generally

**1.** All persons performing any grading, site clearing, grubbing, trenching, drilling, blasting or soil screening shall put into effect dust prevention measures deemed necessary by the City Engineer to mitigate the generation of excessive airborne dust by such operations and/or related construction activity.

**2.** The required dust prevention measures shall be maintained during the entire period of construction and until such time as the project is completed and receives final inspection approval of the City Engineer.

**3.** The following are the minimum requirements for dust control on each site, whether a formal grading permit is issued.

#### b. Surface Material

**1.** All vehicular traffic and parking shall be restricted to existing paved driveways and parking areas where available or to temporary driveways and parking areas surfaced with clean rock, gravel or other pre-approved materials in a manner acceptable to the City Engineer.

**2.** Temporary surfacing shall be adequately compacted to support the anticipated wheel loads and resurfaced or retreated as necessary to maintain a dust-free area to the satisfaction of the City Engineer.

**3.** For projects other than a detached dwelling on a single site, when plans are required to be submitted pursuant to this Section, plans indicating the location, material, installation and maintenance of temporary driveways and parking areas shall accompany each permit application.

**4.** The traffic surfacing must be applied prior to putting the traffic surface into service.

5. For a single detached dwelling on a site, temporary traffic surfacing must be applied prior to putting the traffic surface into service. The type of temporary traffic surfacing shall be specified on the grading plans, and may include no less than two-inch thickness of 3/4-inch aggregate, one-inch asphalt pavement, or other approved surfacing.
6. The surface shall be adequate to reduce tracking and blowing dust.
7. At no time shall vehicles or construction equipment be allowed to park on or travel across adjacent lots or parcels without first obtaining written permission of the appropriate property owner.
8. Approved use of adjacent properties for parking of vehicles, construction equipment and storage of materials shall comply with the requirements of this section and shall be revegetated after the completion of construction pursuant to 3.2.D(8) (Revegetation).

### c. Airborne Debris

1. When weather and soil conditions are such that excessive airborne dust may be generated by construction equipment, loading or unloading of construction materials, grading, site clearing, grubbing, trenching or soil screening operations on any site, water sprinkling, or other suitable methods shall be employed to limit the amount of airborne dust and dirt to the lowest practicable level as determined by the City Engineer;
2. All exposed excavations, fill material, stockpiled soil and rock, and trench soil on all sites shall be treated with water, a dust palliative or other pre-approved materials and methods that will act as a binder for soil particles and reduce the amount of free, loose dust on the exposed surfaces.
3. Treatment shall be initiated as soon as possible after excavations are exposed and fill or spoil materials are deposited.
4. Treatment shall be continued and maintained through all phases of construction to the satisfaction of the City Engineer;

### d. Tracking or Depositing of Debris in Public Rights-of-Way

1. When conditions are such that vehicles or equipment leaving any construction site may track or deposit mud, dirt, or other debris on public rights-of-way within the city, the contractor shall take all reasonable practicable steps to prevent such tracking or deposit of said materials.
2. In the event such materials are tracked or deposited on public or private rights-of-way as a result of vehicles or equipment leaving any construction site, it is the responsibility of the contractor to remove these materials from such rights-of-way with all reasonable speed and diligence.
3. Methods used to achieve this will be such that no mud, dirt, silt, or debris shall enter the storm drain system.
4. If mechanical sweepers are utilized, sweepers shall be of the vacuum type.
5. The bulk of the material shall be removed by other methods prior to sweeping. Safety precautions and traffic control shall be provided at all times.

### (2) Grubbing and Tree Removal Requirements

All tree material and other vegetation cut or grubbed from the site shall immediately be placed in a dumpster or dump truck, then removed from the site and properly disposed of, outside the city limits, within 48 hours.

### (3) Requirements for Silt and Erosion Control

**a.** Measures shall be employed at all times to prevent erosion and the entrance of material into the storm drainage system. Provisions shall be made to trap and remove material entering the storm drainage system.

**b.** The storm drainage system includes all gutters, ditches, pipes and channels. Flushing and cleaning of concrete trucks, mixers, etc., shall not be done in such a manner as to allow the migration of water or material off site.

### (4) Requirements to Protect the Sewer System

**a.** All portions of the sewer system, including main lines, laterals, and cleanouts, shall be capped or otherwise protected at all times to prevent foreign objects and debris from entering the City of Sedona sewer system.

**b.** Active lines should be protected at all times from breakage and disturbance in order to prevent spills.

### (5) Grading in Accordance with ITE Guidelines

All grading for streets and driveways shall be in accordance with the recommendations and guidelines specified by the Institute of Transportation Engineers (ITE) in the following documents: Guidelines for Driveway Location and Design, ITE Publication No. RP-006B (1987); Guidelines for Urban Major Street Design – A Recommended Practice, ITE Publication No. RP-010A (1984); Recommended Guidelines for Subdivision Streets – A Recommended Practice, ITE Publication No. RP-011C (1993).

### (6) Compliance

Compliance with dust control requirements of this manual, the LDC, other city ordinances, the Coconino and Yavapai County Health Departments and the State Department of Environmental Quality shall be required.

**a.** Vehicles carrying loads shall have them covered with a secure tarpaulin or other covering to prevent the load from spilling or blowing from the vehicle. All loads and loose material subject to dropping from vehicles, being sifted from vehicles or otherwise escaping from vehicles shall be covered when traveling on a public street or highway within the City of Sedona.

**b.** Water sprinkling, dust palliatives, or other suitable methods shall be employed at all times to limit the amount of airborne dust and dirt to the lowest practicable level as determined by the City Engineer, and to prevent airborne dust particles from migrating off site.

**c.** Excavation and grading shall be halted when conditions render mitigation methods ineffective.

**d.** Methods to prevent tracking of dirt and other materials from the construction site onto public streets or highways within the City of Sedona shall be incorporated at all times.

**e.** Removal of tracked, dropped, sifted or otherwise deposited material on public streets and highways within the City of Sedona shall occur daily, or as deemed necessary by the City Engineer, to avoid the occurrence of dust, excessive mud, hazard, or nuisance to the public using the roadway. "Public using the roadway" includes vehicles and pedestrians.

**f.** Water or other substances may be sprinkled on the roadway for the purpose of cleaning or maintaining the roadway.

### (7) Right-of-Way Permit Requirements

**a.** Every attempt shall be made to do no work, or store no materials within city rights-of-way (i.e., porta-potties, dumpsters, construction materials, etc.). In the event that this is not possible, a right-of-way permit shall be secured prior to working within, or placing anything within, the right-of-way.

**b.** In the event that unloading of materials or equipment onto the site from the right-of-way takes place, proper traffic control methods, including flagmen, shall be provided at all times.

**c.** Extensive street blockages require a right-of-way permit.

## B. Drainage Design and Treatment

All developments shall be designed with considerations for existing, temporary, and post-development drainage impacts and flows. These considerations shall include quantity, quality, and method of delivery of drainage flows. Owners and/or operators of new development and redevelopment sites discharging to the City of Sedona's Municipal Separate Storm Sewer System (MS4), shall design, install, and maintain post-construction stormwater controls that reduce or eliminate the discharge of pollutants from the site after construction activities are completed. Owners and/or operators shall also abide by the requirements of City of Sedona Code Chapter 13.50 "Storm Water Discharge." Since some portion of the city lies within the Yavapai County Flood Control District or the Coconino County Flood Control District these agencies shall be consulted when altering natural drainages or constructing within 100-year floodplains and floodways.

### (1) General

**a.** Drainage design within the City of Sedona shall comply with the Drainage Criteria for the City of Sedona as shown in Table 3.1 Drainage Criteria.

**b.** The method of design of drainage facilities shall be as provided in the latest adopted City of Sedona Storm Drainage Master Plan. Flows used in design shall be similar to the flows identified in that document.

**c.** Exceptions must have the written approval of the City Engineer.

### (2) Natural Drainage System Alteration

**a.** In addition to complying with above, improvements of existing natural drainage systems shall meet the requirements of the Yavapai County Flood Control District Flood Damage Prevention Ordinance, as applicable.

**b.** The applicant must submit a copy of Yavapai County Flood Control District or Coconino County Flood Control District's development permit to the City Engineer prior to issuance of a grading permit for projects located within the appropriate county.

**c.** The City Engineer may determine it is necessary to reinforce the stability of such drainage where there are signs of erosion or where the proposed development may add water runoff greater than current levels.

### (3) Replacement of Existing Facilities

**a.** When replacing an existing storm drainage facility, the design flow may be used for analysis per Table 3.1; however, the 100-year flow must be checked to ensure the floodplain has not been increased in width or elevation.

**b.** The replacement shall not result in increased flood for the design or 100-year storm.

### (4) Pollution Control

**a.** Project designs shall include best management practices to prevent stormwater pollution during and after construction of the project.

**b.** The practices shall be subject to the approval of the City Engineer and may include procedures, as well as installation of facilities, or a combination.

**c.** Proper state and federal permits shall be obtained prior to starting grading.

**d.** The applicant shall state on the grading permit or building permit application whether or not the project requires or is subject to a state stormwater pollution prevention permit.

### (5) Shape

**a.** New drainage or relocated drainage shall be designed with slope rounding to blend with natural contours.

**b.** New or relocated drainage shall be designed to comport with the natural terrain. In most cases, this shall mean a curvilinear watercourse. New or relocated drainage shall be designed to vary in width or depth similar to natural drainages.

### (6) Runoff Control

**a.** Project designs shall to the extent practicable provide drainage measures on the project site so that off-site storm drainage flows do not increase, are not more polluted, or differently delivered than existing flows, unless adequate provisions are made to accommodate the flow off site.

**b.** Measures shall be designed to preclude non-storm drainage flows from flowing between or off of properties.

### (7) Easements

**a.** Adequate easements shall be provided for storm drainage facilities.

**b.** Easement sizes shall be as per the Drainage Criteria in Table 3.1.

**c.** If a facility is to be located within a public right-of-way the edge of the facility shall be located at least 6 feet from the edge of the right-of-way.

**d.** The City Engineer may approve exceptions to this requirement, if adequate area for city maintenance of the drainage facility will exist, in the City Engineer's judgment.

### (8) Vehicular and Pedestrian Crossings

**a.** Design of low water crossings for vehicles and pedestrians shall not be allowed, unless a non-low water crossing route approved by the Fire Department as an acceptable access is provided from the development.

**b.** Exceptions to this requirement must be approved by the City Engineer and the Fire Chief for the area in which the development is located.

### (9) Precipitation Data

**a.** The mean precipitation frequency estimates provided in Table 3.2 may be used for design storm frequencies up to the 10-year storm.

**b.** The upper limit precipitation frequency estimates provided in Table 3.3 shall be used for design storm frequencies greater than the 10-year storm.

**c.** These precipitation frequency estimates were obtained from the NOAA Atlas 14. Data was retrieved for the Sedona Ranger Station in Sedona, Arizona (longitude (dd) -111.7667, latitude (dd) 34.8667, elevation (feet) 4,220).

**d.** Precipitation data shall be per Table 3.2 and Table 3.3.

**Table 3.1**
## Drainage Criteria

| No. | Stormwater Components | Design Items | City of Sedona | |
|---|---|---|---|---|
| 1.0 | Street and Pavement Drainage | Storm Frequency: | 2-yr. | 100-yr. |
| | | Allowable Spread: | | |
| | | Local Streets | 1 12-foot lane clear | within ROW |
| | | Collector Streets | 1 12-foot lane clear | within ROW |
| | | Arterial Streets | open each way | within ROW |
| | | Minimum Street Slopes: | | |
| | | Longitudinal | 0.50 percent (curbed and rural streets) with 1 percent minimum transverse slope | |
| 2.0 | Storm Drains | Storm Frequency: | 2-yr. | DA < 160 acres |
| | | | 10-yr. | DA > 160 acres |
| | | Minimum Pipe Size: | | |
| | | Main Line | 24 in. | |
| | | Other | 18 in. | |
| | | Minimum Velocity: | | |
| | | Desirable | 5 fps. | |
| | | Absolute | 3 fps. | |
| | | Maximum Manhole Spacing: | | |
| | | Small Pipe | D < 30 in. | 300 ft. |
| | | Medium Pipe | 30 in. ≤ D ≤ 45 in. | 400 ft. |
| | | Large Pipe | D ≥ 45 in. | 500 ft. |
| | | Drainage Easement: | | |
| | | Small Pipe | D ≤ 36 in. | 16 ft. |
| | | Large Pipe | D > 36 in. | D + 16 ft. |
| 3.0 | Culverts | Storm Frequency: | 25-yr. (roadway cross.) | 100-yr. (roadway cross.) |
| | | | 2-yr. (roadside ditches) | ≤ 160 acres |
| | | | 10-yr. (roadside ditches) | ≥ 160 acres |
| | | Overtopping Limit: | no overtopping (25-yr.) | 12-in. max. (100-yr.) |
| | | Secondary Access | | |
| | | D.A. > 1/4 sq. mi. | | |
| | | Maximum HW/D Ratio: | 1.5 | |
| | | Minimum Pipe Size: | | |

**Table 3.1**
## Drainage Criteria

| No. | Stormwater Components | Design Items | City of Sedona | |
|---|---|---|---|---|
| | | Roadways | 24 in. | |
| | | Driveways | 15 in. | |
| | | Velocity Limits: | | |
| | | Minimum | 3.0 fps. | |
| | | Maximum | | |
| 4.0 | Open Channels | Storm Frequency: | 25-yr. | 100-yr. (check) |
| | | Froude No.: | FN ≤ 0.86; 1.13 ≤ FN ≤ 2.0 | |
| | | Freeboard (Minimum): | | |
| | | Subcritical Flow | FB = 0.25*[y+(v2/2g)] (1-ft. min.) | |
| | | Supercritical Flow | FB = 0.25*[y+(v2/2g)] (2-ft. min.) | |
| | | Maintenance Road: | 12 ft. wide, 1 side of channel | |
| | | Maximum Velocity: | per channel lining material | |
| | | Maximum Side Slope: | (ss = from slope stability analysis) | |
| | | Vegetal/Earth | 3:1 or ss | |
| | | Loose Riprap | 3:1 or ss | |
| | | Rigid Lining | ss | |
| | | Shotcrete | 1:1 | |
| | | Soil Cement | 1:1 | |
| | | Building Setback from Channel Bank and Floodway: | 1.5 x the channel depth, unless otherwise approved by the City Engineer for engineering reasons. However, in any case, the more restrictive requirements within this article shall apply. | |
| 5.0 | Stormwater Storage | Storm Frequency: | 2-, 10-, 25-, and 100-yr. storms | |
| | | Criteria: | post-proj. Q ≤ pre-proj. Q | |
| | | When Required: | 1 acre or larger development or when post-development flow will exceed pre-development flow by ≥ 1 cfs. | |
| | | Maintenance Road: | 12-ft. access road | |
| | | Maximum Depth: | | |
| | | Parking Areas | | |
| | | Emergency Spillway: | pass post-developed 100-yr. Q | |
| | | Maximum Drain Time: | 12 hrs. upstream watershed areas ≤ 10 ac. and 24 hrs. for an upstream watershed area > 10 ac. | |

**Table 3.1**
## Drainage Criteria

| No. | Stormwater Components | Design Items | City of Sedona |
|---|---|---|---|
| | | Freeboard (Minimum): | 1 ft. (post developed 100-yr. event) |
| | | Min. Principal Outlet: | 12 inch |
| | | Maximum Side Slopes: | |
| | | Depth < 3 ft. | 2:1, protected; 3:1, unprotected |
| | | Depth ≥ 3 ft. | 4:1 |

**Table 3.2**
## Mean Precipitation Frequency Estimates

| Freq (yr) | 5-min | 10-min | 15-min | 30-min | 60-min | 120-min | 3-hr | 6-hr | 12-hr | 24-hr | 2-day | 4-day | 7-day | 10-day | 20-day |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.21 | 0.33 | 0.40 | 0.54 | 0.67 | 0.80 | 0.86 | 1.05 | 1.34 | 1.72 | 2.02 | 2.33 | 2.74 | 3.13 | 4.06 |
| 2 | 0.28 | 0.42 | 0.52 | 0.70 | 0.86 | 1.01 | 1.08 | 1.30 | 1.66 | 2.14 | 2.52 | 2.91 | 3.41 | 3.88 | 5.03 |
| 5 | 0.37 | 0.56 | 0.70 | 0.94 | 1.16 | 1.33 | 1.39 | 1.61 | 2.03 | 2.66 | 3.14 | 3.65 | 4.23 | 4.79 | 6.11 |
| 10 | 0.45 | 0.68 | 0.85 | 1.14 | 1.41 | 1.60 | 1.65 | 1.89 | 2.33 | 3.08 | 3.64 | 4.25 | 4.91 | 5.51 | 6.92 |
| 25 | 0.56 | 0.85 | 1.06 | 1.43 | 1.77 | 1.99 | 2.03 | 2.28 | 2.75 | 3.67 | 4.33 | 5.10 | 5.86 | 6.48 | 7.97 |
| 50 | 0.66 | 1.00 | 1.24 | 1.67 | 2.06 | 2.31 | 2.35 | 2.60 | 3.07 | 4.13 | 4.87 | 5.78 | 6.62 | 7.23 | 8.75 |
| 100 | 0.76 | 1.15 | 1.43 | 1.93 | 2.38 | 2.67 | 2.71 | 2.96 | 3.41 | 4.61 | 5.44 | 6.50 | 7.41 | 8.00 | 9.51 |
| 200 | 0.87 | 1.32 | 1.64 | 2.20 | 2.73 | 3.06 | 3.10 | 3.32 | 3.75 | 5.10 | 6.03 | 7.25 | 8.24 | 8.78 | 10.24 |
| 500 | 1.03 | 1.56 | 1.94 | 2.61 | 3.23 | 3.63 | 3.66 | 3.87 | 4.22 | 5.76 | 6.83 | 8.30 | 9.38 | 9.82 | 11.18 |
| 1,000 | 1.16 | 1.77 | 2.19 | 2.95 | 3.65 | 4.10 | 4.13 | 4.31 | 4.60 | 6.30 | 7.46 | 9.13 | 10.29 | 10.61 | 11.86 |

**Table 3.3**
**Upper Limit Precipitation Frequency Estimates**

| Freq (yr) | 5-min | 10-min | 15-min | 30-min | 60-min | 120-min | 3-hr | 6-hr | 12-hr | 24-hr | 2-day | 4-day | 7-day | 10-day | 20-day |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.26 | 0.39 | 0.48 | 0.65 | 0.80 | 0.93 | 0.99 | 1.16 | 1.49 | 1.88 | 2.23 | 2.57 | 3.00 | 3.43 | 4.43 |
| 2 | 0.33 | 0.50 | 0.62 | 0.83 | 1.03 | 1.18 | 1.26 | 1.44 | 1.84 | 2.36 | 2.79 | 3.21 | 3.75 | 4.27 | 5.50 |
| 5 | 0.44 | 0.67 | 0.83 | 1.12 | 1.39 | 1.55 | 1.60 | 1.79 | 2.24 | 2.94 | 3.47 | 4.02 | 4.64 | 5.26 | 6.68 |
| 10 | 0.54 | 0.82 | 1.01 | 1.36 | 1.69 | 1.87 | 1.91 | 2.10 | 2.57 | 3.41 | 4.01 | 4.68 | 5.39 | 6.05 | 7.56 |
| 25 | 0.67 | 1.02 | 1.26 | 1.70 | 2.10 | 2.31 | 2.34 | 2.54 | 3.03 | 4.05 | 4.77 | 5.60 | 6.43 | 7.10 | 8.70 |
| 50 | 0.78 | 1.19 | 1.47 | 1.98 | 2.46 | 2.69 | 2.71 | 2.89 | 3.38 | 4.55 | 5.36 | 6.34 | 7.27 | 7.94 | 9.56 |
| 100 | 0.90 | 1.37 | 1.70 | 2.29 | 2.84 | 3.12 | 3.14 | 3.29 | 3.76 | 5.08 | 5.99 | 7.14 | 8.16 | 8.80 | 10.40 |
| 200 | 1.03 | 1.57 | 1.95 | 2.63 | 3.25 | 3.57 | 3.59 | 3.72 | 4.14 | 5.63 | 6.66 | 7.97 | 9.06 | 9.66 | 11.21 |
| 500 | 1.23 | 1.88 | 2.33 | 3.12 | 3.88 | 4.24 | 4.27 | 4.37 | 4.70 | 6.40 | 7.56 | 9.18 | 10.37 | 10.84 | 12.26 |
| 1,000 | 1.40 | 2.13 | 2.65 | 3.56 | 4.41 | 4.79 | 4.85 | 4.90 | 5.15 | 7.02 | 8.28 | 10.15 | 11.39 | 11.74 | 13.05 |

### (10) Storm Drainage Precautions

All persons performing any grading operations shall put into effect all safety precautions which are necessary in the opinion of the City Engineer and provide adequate anti-erosion and/or drainage devices, debris basins or other safety devices to protect the life, limb, health, property and welfare and private and public property of others from damage of any kind, and to be fully in accord with all ordinances, policies and procedures of the Yavapai County Flood Control District, pursuant to this Section.

### (11) Development of Individual Residential Lots Within Flood-prone Areas

Under authority of A.R.S. Section 48-3605(A), the Director of the Arizona Department of Water Resources establishes the following standard for Development of Individual Residential Lots Within Flood-prone Areas in Arizona.

#### a. Applicability

1. These guidelines shall apply to individual residential lots located in all flood hazard areas identified either by the Federal Emergency Management Agency as part of the National Flood Insurance Program or by the local Floodplain Administrator.
2. Application of these guidelines will not be necessary if the local community or county has in effect a drainage, grading, or stormwater ordinance which, in the opinion of the Department, results in the same or greater level of flood protection as application of these guidelines would ensure.

#### b. Generally

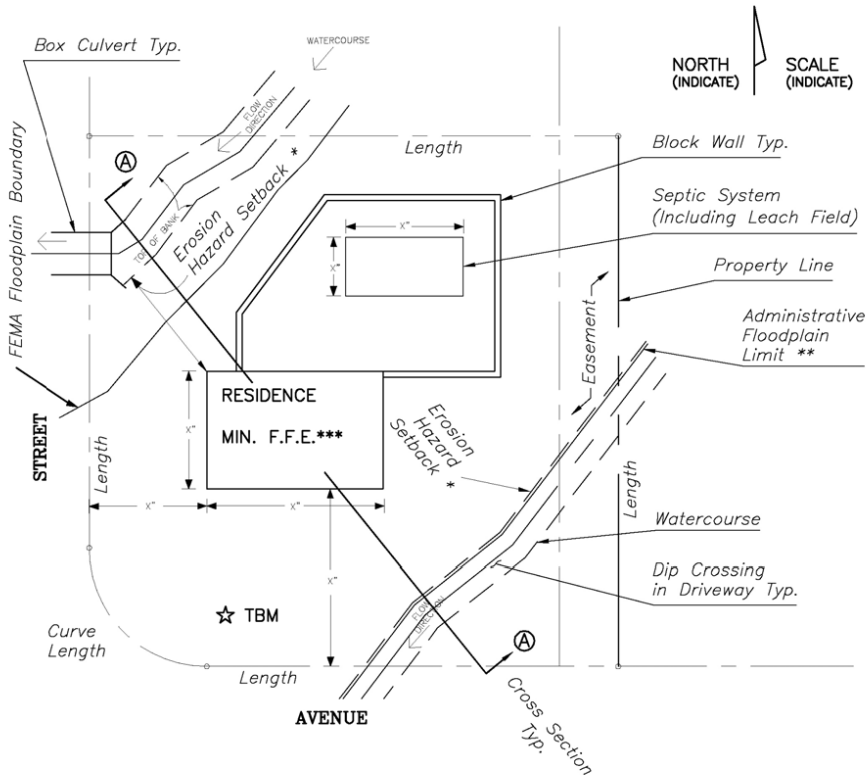
1. In no case shall alteration of any drainage way identified on a USGS topographic map as a permanent or intermittent watercourse be permitted, except as allowed in subsection 3.1.E Exemptions.

2. Submittals for lots within flood-prone areas shall follow, at a minimum, the requirements of the Arizona Department of Water Resources State Standard 6-05 and associated attachments (see Figures 1 and 2), as they currently exist or may be amended in the future.
3. This requirement is effective May 15, 2005. State Standard 6-05 and State Standard Attachment 6-05 replaces State Standard 6-96 and State Standard Attachment 6-96, adopted in November 1996.

# STATE STANDARD 6-05 ATTACHMENT 1

## MINIMUM REQUIRED PLOT PLAN FOR DRAINAGE AND FLOODPLAIN INFORMATION

**May 2005**




* Established by Local Jurisdiction or State Standard 5–96
** If Applicable
*** Finished Floor Elevation Established by Local Jurisdiction
☆ Temporary Benchmark (If Required by Local Jurisdiction)

If Supplemental Information is Required by the Local Jurisdiction it Shall be Shown on the Submitted Plot Plan

**LEGEND**

- THALWEG
- FLOODPLAIN LIMIT / BOUNDARY
- TOP OF BANK
- PROPERTY LINE (PL)
- ← FLOW — FLOW ARROW

*STATE STANDARD ATTACHMENT 6-05* *3* *MAY 2005*

**Figure 1. State Standard 6-05, Attachment 1**

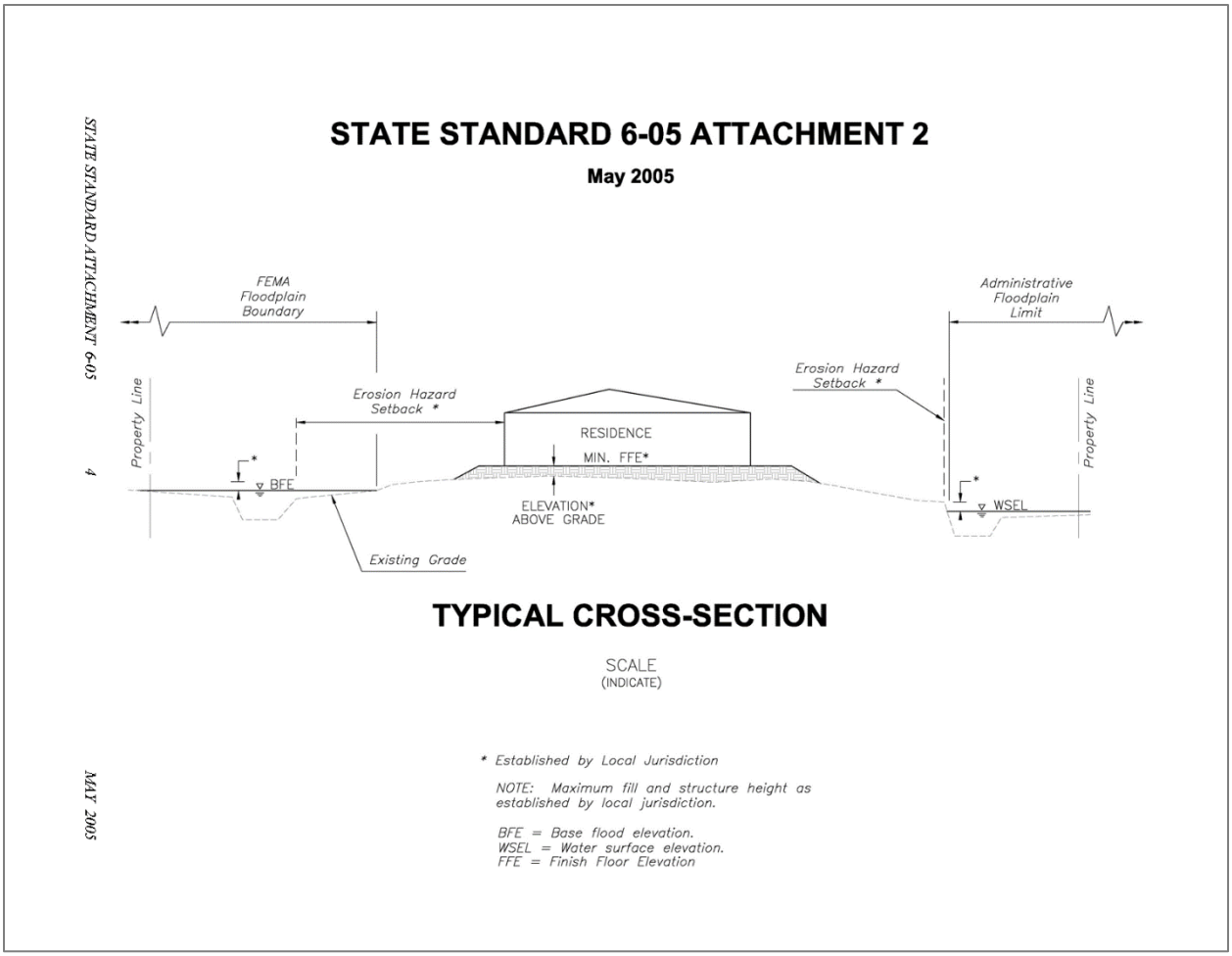



**Figure 2. State Standard 6-05, Attachment 2**

## C. Supplemental Design Standards

The provisions of Section 5.3 of the LDC outline minimum standards for grading and drainage. The sometimes more restrictive standards presented in this manual reflect the community's desire for development sensitive to the special nature of Sedona. Specific consideration should be given to the following:

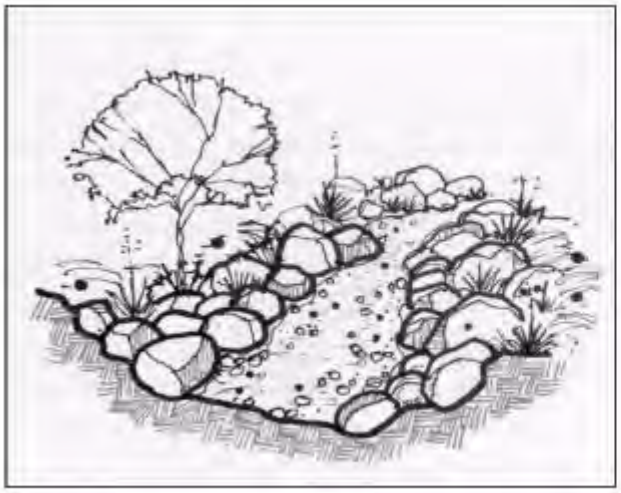
### (1) Channels and Swales

**a.** The use of concrete channelization (utilizing, for example, preformed concrete channels or sprayed-on concrete such as Gunnite or Shotcrete), for drainages requiring mechanical stabilization is strongly discouraged. However, it is acknowledged that this material may be necessary depending on soil and hydraulic characteristics.

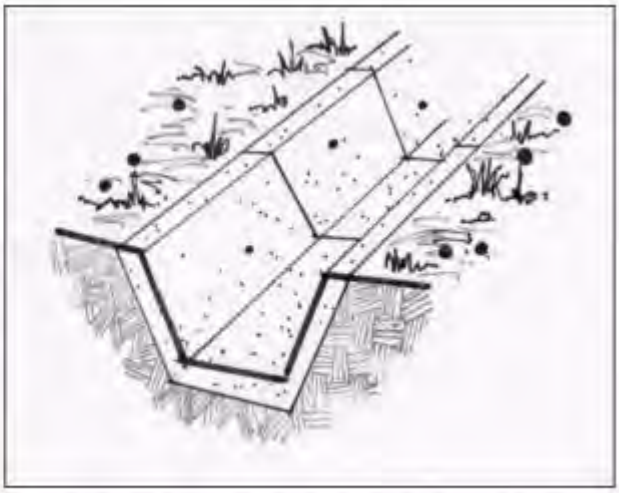
**b.** A preferred method is armoring with dry laid native or river-washed rock of a variety of shapes and sizes. This provides a more natural appearance that is more visually appealing, allows for vegetation to be planted within and between the rocks to soften their appearance, and encourages the groundwater recharge process.

**c.** The uniform and even placement of rocks and boulders is discouraged. Instead, emphasis should be placed on laying rocks in naturally shaped areas where the drainages are most prone to erosion, such as on the outside of curves.

**d.** Riparian tree species should also be planted along drainage edges for emphasis and interest.



Encouraged



Discouraged

### (2) Check Dams

Natural appearing check dams and gabion type structures faced with large natural rocks may be appropriate in some locations.

### (3) Stable Drainage Systems

The design of permanent, effective and stable drainage systems by preserving vegetative cover is encouraged, and permanent landscaping should be installed in a timely manner to prevent rapid runoff, erosion, and downstream siltation.

### (4) Storm Water Detention Basins

Where site design precludes the use of alternative methods of storm water management, storm water detention basins (used to remove sediment from storm water runoff and to temper runoff quantity and rate of flow) should be designed as pleasing, natural looking and usable resources. The following standards apply:

**a.** The slopes of detention areas should be gentle and rounded, but they may incorporate the use of rocks and boulders to increase interest. Spillways of natural rock are preferred.

**b.** Where appropriate, riparian vegetation species are most suitable. A perimeter of heavier landscaping often creates a defined space within the development, along with a sense of variety that is visually appealing.

**c.** In some cases, detention areas may include a small artificially maintained pool to serve as a point of interest.

**d.** Controlled access and signage can provide for safe public use of such sites.

**e.** Where feasible, detention areas should be used for the collection, storage, and reuse of water for onsite irrigation.

**f.** Note that standard engineering details for drainage channels and detention areas that can be considered as a typical design, should have natural appearance standards as described above applied to them. This can be accomplished by covering the ends of a culvert pipe with red rock, placing red rock on bridges and box culverts and integrating landscaping into drainage way and swale design, where possible.

**g.** Stormwater detention shall be provided for single-family dwellings. The volume of stormwater detention to be provided shall be 50 cubic feet for every 1,000 square feet of roof area or portion thereof. Example: A home with a 900 square foot roof will require 50 cubic feet of detention, and a 1,500 square foot roof will require 100 cubic feet of detention.

### (5) Soil Erosion and Sedimentation Control

The proper control of sedimentation and management of soil erosion on construction sites is very important in Sedona, particularly regarding the preservation of Oak Creek, a federally designated Scenic and Impaired Waterway. As most drainages within the City eventually discharge into Oak Creek, soil erosion and sedimentation control are important throughout the City and not only on construction sites immediately adjacent to the creek.

#### a. Reasons for Sedimentation Control

Sedimentation control is important for the following reasons:

1. Eroded soils and sediments can get deposited onto streets by vehicles leaving the site or by storm water runoff. This can be hazardous to drivers and bicycle riders.
2. Eroded soils can block culverts and cause localized flooding.
3. Eroded soils can enter water bodies and channels. Deposited sediments can, for example, cover the eggs of fish and other organisms preventing them from reproducing.
4. Suspended sediments can clog the gills of fish and reduce light penetration, therefore inhibiting photosynthesis of water plants.
5. Clear water is more desirable for swimming, fishing and other recreational activities than muddy or cloudy water.

#### b. Recommended Erosion and Sedimentation Control Practices

The following techniques and practices are recommended to manage soil erosion and control sedimentation:

1. Detention/retention/sedimentation ponds should be constructed and stabilized prior to other earth moving activities to collect sediments caused by erosion.
2. Preservation of existing trees and natural vegetation on the site where feasible.
3. Installation of perimeter fencing using for example, silt fences that are trenched in and back filled.
4. Rock dams or straw bales are suggested in concentrated flow locations such as ditches or swales.
5. Erosion control blankets

6. Straw mulch
7. Temporary or permanent seeding with native grasses or wild flowers
8. Rip rap on steep slopes
9. Placement of crushed rock or gravel on job site access driveways to control mud and dirt on public roads.

### (6) Relationship to Topography and Vegetation

All development proposals should show evidence of design strategies to minimize changes to existing topography and the loss of existing vegetation.

The provisions of LDC Article 5.3 outline minimum standards for grading and drainage. The sometimes more restrictive standards in this manual reflect the community's desire for development to be sensitive to the special nature of Sedona.

Drawings, models, and other graphic communication presented to the City for Development Review should illustrate the proposed project's integration with its site topography and vegetation.

Specific consideration should be given to the following:

**a. Avoid Level Grading**

Projects that require large level areas are discouraged on property with steep slopes. New projects are encouraged to step with landforms and offset around existing vegetation and trees. Level grading of entire lots without respect for existing landforms or neighboring development is to be avoided.

**b. "Stair Stepping" With the Terrain Plus Offsets**

Building placement on slopes should not only develop stepped vertical massing, but should also create plan view offsets to save existing vegetation and landforms.

**c. Topographic Transitions**

Transitions at property edges should seem natural for the surrounding terrain. Where the existing terrain is generally level, avoid slopes greater than 1:3 at property lines.

**d. Blend Cut and Fill Slopes**

Cut and fill slopes should be rounded where they meet natural grade so that they blend with the natural slope.

**e. Reduce Visual Impacts of Cut and Fill Slopes**

Natural contouring and revegetation with native plant materials is encouraged. Where retaining walls are required, they should be faced with indigenous rock and/or constructed to blend with adjacent surroundings. If retaining walls are constructed of block and finished with stucco, they should be painted a dark earth-tone color. The use of dry stack rock walls where structurally appropriate, is strongly encouraged.

## D. Grading, Inspection, Cuts, Fills, and Supervision

### (1) General

All grading operations for which a grading permit is required shall be subject to inspection by the City Engineer. When required by the City Engineer, special inspection of grading operations and special testing shall be performed in accordance with the provisions of this section.

### (2) Grading Designation

Engineered grading and regular grading as defined in LDC 5.3 shall apply to this section.

### (3) Engineered Grading Requirements

**a.** For engineered grading, it shall be the responsibility of the civil engineer who has prepared the approved grading plan to incorporate all recommendations from the soil engineering report and engineering geology report into the grading plan. This engineer shall also be responsible for the professional inspection and certification of the grading within his area of technical specialty. This responsibility shall include, but need not be limited to, inspection and certification as to the establishment of line, grade and drainage of the development area.

**b.** The civil engineer shall act as the coordinating agent in the event the need arises for liaison between other professionals, the contractor, the Director and the City Engineer. The civil engineer shall also be responsible for the preparation of revised plans and the submission to the City Engineer of as-graded grading plans upon completion of the work.

**c.** Soil engineering and engineering geology reports are required for all new construction. During grading, all engineering geology recommendations shall be submitted to the civil engineer and to the City Engineer by the soil engineer and the engineering geologist.

**1.** The soil engineering report shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures including buttress fills when necessary, and opinions and recommendations, covering adequacy of sites to be developed by the proposed grading, including stability of slopes.

**2.** The engineering geology report shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinions and recommendations covering the adequacy of sites to be developed by the proposed grading.

**d.** The soil engineer's area of responsibility shall include, but need not be limited to, the professional inspection and certification concerning the preparation of ground to receive fills, testing for required compaction, stability of all finish slopes and the design of buttress fills, as required, incorporating data supplied by the engineering geologist.

**e.** The engineering geologist's area of responsibility shall include, but need not be limited to, professional inspection and certification of the adequacy of natural ground for receiving fills and the stability of cut slopes with respect to geological matters, and the need for sub-drains or other groundwater drainage devices. The engineering geologist shall report all findings to the soil engineer and the civil engineer for engineering analyses.

**f.** The City Engineer shall inspect the project at the various stages of the work requiring certification and at any more frequent intervals, as he determines to be necessary, to assure that adequate control is being exercised by the professional consultants.

### (4) Regular Grading Requirements

The City Engineer may inspect the work and may require adequate inspection and compaction control by an approved soils testing agency. The testing agency's responsibility shall include, but need not be limited to, certification concerning the inspection of cleared areas and benches to receive fill, and the compaction of fills. When the City Engineer has cause to believe that

geologic factors may be involved, the grading operation shall be required to conform to engineered grading requirements.

### (5) Notification of Noncompliance

If, in the course of fulfilling their responsibilities under this article, the civil engineer, the soil engineer, the engineering geologist, or the testing agency finds that the work is not being performed in conformance with this article or with the plans approved by the City Engineer, the discrepancies shall be reported in writing immediately to the Director and to the City Engineer, and they shall stop-order all work until corrective measures are completed. Recommendations for corrective measures, if deemed necessary by the City Engineer, shall be submitted.

### (6) Transfer of Responsibility for Certification

If the civil engineer, the soil engineer, the engineering geologist, or the testing agency of record are changed or replaced during the course of the work, the work shall be stopped fully until the replacement has agreed in writing to accept the responsibility, within the area of their technical competence, for certification upon completion of the work.

### (7) Setbacks

#### a. General

Cut and fill slopes shall be set back from site boundaries in accordance with this section. Setback dimensions shall be horizontal distances measured perpendicular to the site boundary.

#### b. Top of Cut Slope

The top of cut slopes shall be made not nearer to a site boundary line than 1/5 of the vertical height of cut with a minimum of two feet and a maximum of ten feet. The setback may need to be increased for any required interceptor drains.

#### c. Toe of Fill Slope

The toe of fill slope shall be made not nearer to the site boundary line than 1/2 the height of the slope with a minimum of two feet and a maximum of 20 feet. Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated into the work as the City Engineer deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include, but are not limited to:

1. Additional setbacks;
2. Provision for retaining or slough walls;
3. Mechanical or chemical treatment of the fill slope surface to minimize erosion;
4. Provisions for the control of surface waters.

#### d. Modification of Slope Location

The City Engineer may approve alternate setbacks. The City Engineer may require an investigation and recommendation by a civil engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

### (8) Cuts

#### a. Substructure Protection

The permittee shall determine any utilities or other substructures that exist in the location to be excavated no less than two working days prior to the commencement of any work by a Blue Stake pursuant to Arizona Revised Statutes. Excavation shall be undertaken with sufficient care not to interrupt the utility service function or to disturb the utility or other substructure physical supports.

#### b. Drainage Design and Treatment

Any alterations to existing natural drainage systems shall meet requirements pursuant to 3.2.B (Drainage Design and Treatment).

#### c. Safety

Cuts shall be adequately fenced to preclude unauthorized access, as determined by the Director.

#### d. Natural Contours

All buildings, structures, driveways and roads shall, to the greatest extent practicable, utilize the natural contours of the land to minimize disturbed area.

#### e. Revegetation

1. Cut slopes shall be seeded or otherwise vegetated within one month of completion or as soon as the planting season allows as determined by the Director.
2. Revegetation of cut slopes shall include a mix of plant types indigenous to the area and similar to surrounding plant life, with size and species to provide for variation in color, texture and mass. This may range from trees to low wildflower ground covers.
3. Irrigation and maintenance adequate for the survival of the plant species, as determined by the Director, shall be provided until mature enough to survive without programmed care by the legal owners of the cut slope.
4. For cuts greater than 5,000 cubic yards, the revegetation plan shall be submitted by a landscape architect.

#### f. Slope Face

Construction shall avoid creating a smooth face on cut slopes and shall leave small rock outcrops and boulders where possible. Such natural features shall be retained to add interest and stability to the cut slope.

#### g. Blending

1. Cut slopes shall be blended into the natural terrain by rounding the tops, bottoms and lateral faces of the slopes.
2. The radius of rounding shall be equal to 1/2 the distance between the toe and top of cut slope as measured along the slope face.

#### h. Cut Slopes

Cut and fill slopes shall meet the following requirements:

1. The slope shall be finished and revegetated with natural rock and plant material in quantities consistent with the area and in a manner that substantially reduces the potential for erosion;
2. The vertical height of the cut shall not exceed eight feet and when used together with a fill slope (see subsection 3.2.D(9) (Fill Height) shall not exceed 16 feet in total height;
3. The slope of a cut surface shall be no steeper than is safe for intended use, as determined by the City Engineer. It shall be no steeper than two horizontal to one vertical unless the owner provides a soil engineering or an engineering geology report, or both, stating that the site has been investigated and stating that a cut at a steeper slope will remain stable and not create a hazard to life or property;
4. No slope shall be considered stable by the City Engineer if rill erosion may result;
5. All slopes 1-1/2 horizontal to one vertical or flatter, and all slopes able to be revegetated as specified in the soil engineering or engineering geology report, or both, shall be fully revegetated in accordance with 3.2.D.4.e (Revegetation);
6. Concrete and masonry decorative walls, and retaining walls used in association with cut slopes, shall be color treated or veneered to blend in with the surrounding natural colors of the native rock and soils at the site. The surfaces shall be rough textured with heavy shadow patterns.

**i. Driveways**

1. The maximum height of any cut used to establish a driveway shall not exceed eight feet. Overall heights may exceed eight feet, zero inches where justified by topographic conditions. In these cases, an overall maximum height of 14 feet may be achieved by use of more than one cut; provided, that a minimum planting area of five feet, zero inches is constructed between the two cuts.
2. In Hillside Development Areas, where justified by topographic conditions, the maximum slope of a driveway may exceed 15 percent; provided, that minimum standards for break-overs are maintained, as determined and applied by the City Engineer based on ITE Guidelines for Driveway Location and Design (ITE Publication No. RP-006B). Driveways shall conform as closely as possible to natural topography, but no portion shall exceed 24 percent.

**j. Slopes Greater than 30 percent**

For slopes greater than 30 percent that are determined to be unstable in the soil and geology report submitted in accordance with the requirements of 3.1.D (Permit Required) construction shall only be permitted if an engineering solution acceptable to the City Engineer is found.

**(9) Fills**

**a. Fill Location**

Fill slopes shall not be constructed on natural slopes steeper than two to one.

**b. Preparation of Ground**

The ground surface shall be cleared and grubbed to receive fill by removing vegetation, roots 1-1/2 inches in diameter and larger, noncomplying fill, topsoil and other unsuitable materials; by scarifying to provide a bond with the new fill and, where the slope is steeper

than five to one and the height is greater than five feet, by benching into sound bedrock or other competent material. This shall be determined by the soil engineering or engineering geology report or both. The bench under the toe of a fill, on a slope steeper than five to one, shall be no less than ten feet wide. The area beyond the toe of fill shall be sloped for sheet overflow or a paved drain shall be provided. When fill is to be placed over a cut, the bench under the toe of fill shall be no less than ten feet wide. The cut shall be made before placing the fill and accepted as a suitable foundation for the fill by a soil engineer or engineering geologist, or both.

**c. Fill Material – Exception**

**1.** Organic materials shall not be authorized. No rock or similar irreducible material with a maximum dimension greater than eight inches shall be buried or placed in fills.

**2.** Rocks greater than eight inches in maximum dimension may be authorized by the City Engineer only when a soil engineer devises a proper method of placement, continuously inspects their placement and approves the fill stability. When so authorized, the following three conditions shall also apply:

**i.** Prior to issuance of the grading permit, potential rock disposal areas shall be delineated in the grading plan;

**ii.** Rock sizes greater than eight inches in maximum dimension shall be no less than ten feet below grade as measured vertically;

**iii.** Rocks shall be placed so as to fill all voids with fines.

**d. Layering and Rock Use and Reuse**

**1.** Fill material shall be placed in horizontal layers at depth compatible with the material being placed and with the types of compaction equipment being used, as specified by the soil engineering or engineering geology report or both.

**2.** Each layer shall be spread evenly and moistened or aerated. Each layer spread for compaction shall not exceed eight inches of compacted thickness unless excepted by the City Engineer as specified above, 3.2.D.10.c (Fill Material – Exception). End-dumping or pushing of fill material over banks shall not be authorized.

**3.** The top surface of each fill layer shall have a crown or cross fall of not less than one in 50 but not greater than one in 20, at all times during construction.

**4.** Rocks excavated under grading permit from sites within the city may be used as fill under grading permit at other sites and shall be placed in accordance with the provisions of this subsection.

**5.** If such rocks are used under grading permit and there is insufficient fine material to fill the interstices between particles, such fractured rock may be used when specified in a soil engineering or engineering geology report or both only under the following conditions:

**i.** It shall be spread uniformly on a previously compacted lift;

**ii.** It shall be covered with a sufficient amount of fine earth materials;

**iii.** It shall be scarified or drift-bladed to mix the loose materials;

**iv.** It shall be compacted to the required density, as required in MAG Standards1.1.A(9)e, using a tamper foot or vibrating roller.

**6.** All rock for fill shall be reduced to a size of four inches in maximum dimension or less when taken from an excavation borrow within or without the city where a volume greater than 5,000 cubic yards of fractured rock will be produced. The reduction shall be performed by a rock crusher. The processing of such rock from an excavation shall occur at the borrow pit.

**e. Compaction**

All fills shall be compacted to MAG Standards.

**f. Slope**

The slope of fill surfaces shall be no steeper than is safe for the intended use. In no cases shall fill slopes be steeper than two horizontal to one vertical. Slopes shall be designed to blend with the natural terrain. Slopes shall be rounded at tops and bottoms and laterally to blend with natural contour configurations. Drainage resulting from such blending shall conform to 3.2.B.

**g. Drainage and Terracing**

Drainage and terracing shall be provided. The area above fill slopes and the surfaces of terraces shall be graded as required by 3.2.B.

**h. Fill Height**

**1.** No fill shall be greater than eight feet in vertical height, as measured vertically from the toe to the top of the fill slope.

**2.** The total height of a cut and fill slope shall not exceed 16 feet total.

**3.** A decorative retaining wall designed to retain pre-fill native vegetation, as delineated in section 3.2.D.8.h (Cut Slopes), shall be provided, when incorporation into the fill design will result in significant retainage of the pre-fill native vegetation as determined by the City Engineer.

**4.** The design of the decorative retaining wall shall be from among those on the list of wall designs authorized by both the City Engineer and the Director.

**i. Revegetation**

All fill slopes and surfaces shall be fully revegetated in accordance with 3.2.D.4.e (Revegetation).

**j. Blending**

**1.** Fill slopes shall be blended into the natural terrain by rounding the tops and bottoms of the slopes.

**2.** The radius of rounding shall be equal to 1/2 the distance between the toe and top of fill slope as measured along the slope face.

**k. Walls**

**1.** Concrete and masonry decorative walls and retaining walls used in association with fill slopes shall be color treated or veneered to blend in with the surrounding natural colors of the native rock and soils at the site.

**2.** The surfaces shall be rough textured with heavy shadow patterns.

### (10) Placement of Fill or Excavated Material

**a.** This requirement shall apply to all grading within the city, whether a specific permit is issued or not.

**b.** This requirement shall apply when the total amount of material placed on other properties within the city exceeds 40 cubic yards or if the other property on which the fill is to be placed is located within 0.75 miles of Oak Creek, or lies within a city-designated floodplain.

**c.** Pursuant to the provisions of this Code and other city, state, or federal regulations, the City Engineer may approve or deny permission to place such material.

**d.** At least five city working days prior to the placement of fill or excavated material from a grading project within the city on other properties located within the city, the City Public Works Department shall be notified in writing of the intent to place the material on other property.

.

# 3.3. Streets and Driveway Design

*See LDC 5.4 Access, Connectivity, and Circulation*

## A. Street Design Generally

**(1)** All streets shall be designed in accordance with the standards provided in Table 3.4 and as illustrated in Figures 1 through 3. These street design requirements apply to subdivisions and land divisions of metes and bounds parcels.

**a.** Streets less than 20 feet in width shall not have medians or other obstructions that divide the road width.

**b.** Shoulder cross-slope grades shall not exceed five percent unless authorized by the City Engineer. The City Engineer may reduce the shoulder requirement if minimum eight-foot-wide parking bays are provided at acceptable frequencies along the roadway.

**c.** The minimum right-of-way width for streets shall be as follows:

**1.** Streets with an anticipated average daily traffic (ADT) of 2,500 or less shall have a minimum right-of-way width of 50 feet. The City Engineer may allow a minimum right-of-way width less than 50 feet based on unique site and design characteristics inherent to the subdivision design and layout.

**2.** Above 2,500 ADT, the minimum width of a right-of-way shall be 60 feet.

**3.** Above 2,500 ADT, the pavement width and right-of-way shall be based on a traffic study that shall consider traffic, pedestrian (nonmotorized vehicles), bicycle, and public utility needs.

**d.** All street designs shall meet the street width standards provided in Table 3.4. For situations not meeting the above criteria the design shall be established after review of a traffic study for the proposed development.

**e.** For proposed streets less than 20 feet in width, paved turnouts shall be provided at fire hydrant locations as approved by the Sedona Fire District. These turnouts shall be designated as "No Parking" areas.

**f.** A minimum two-way street width of 16 feet may be used for a distance not exceeding 130 feet; provided, that a turnaround area, approved by the City Engineer and the Sedona Fire District, is provided at one end. The 16-foot width shall have no parking along either side. No more than five single-family dwellings shall be served. This width shall not be used except as the last segment of a street.

**g.** The City Engineer shall require installation of "No Parking" and "No Parking on Pavement" signing along roadways constructed per this section when parking is restricted per the requirements of Table 3.4. In cases of private roads, the owner shall be required to maintain such signing. The City Engineer may also designate and post "No Across Parking" zones on two-way streets less than 28 feet in width. Posted signs shall contain graphics sufficient to clarify the acceptable parking.

**h.** Each property fronting on roads with widths less than 20 feet in width per Table 3.4 and Figures 1 through 3 shall require one additional parking space per parcel beyond that designated for properties similarly zoned. Exceptions to this requirement shall require approval by the City Planning and Zoning Commission and City Council subject to the

findings that the parking on the road is not likely to create a safety problem and that it is not practical to provide additional parking on the fronting parcel.

**(2)** Specific street design problems not addressed in these standards shall be resolved by referring to Institute of Transportation Engineers (ITE) Publication No. RP-011C, "Guidelines for Residential Subdivision Streets – A Recommended Practice," (1993). An additional reference source is the 2001 American Association of State Highway and Transportation Officials (AASHTO) publication, "A Policy on Geometric Design of Highways and Streets, 4th Edition." In the event of a conflict between these publications, the most stringent standard shall apply.

**(3)** In addition to ITE guidelines, the following criteria shall apply to access ways, streets, and drives serving one to three parcels:

**a.** Provide a stopping sight distance greater than or equal to 110 feet;

**b.** The centerline radius of horizontal curves shall be not less than 110 feet;

**c.** The tangent length between reverse curves shall not be less than 50 feet.

**(4)** The city promotes a walkable community. Review LDC Article 5.4.H for requirements. The City Engineer and Director of Community Development may grant an exception for this requirement. All sidewalks shall meet current ADA requirements and will be covered by the warranty, for ADA compliance.

**(5)** Curb shall comply with the LDC Section 7.4.G.(2).

**(6)** For 0 percent to 12 percent longitudinal street grade, street surface shall be asphalt concrete. For greater than 12 percent to 15 percent (maximum) longitudinal street grade, street surface shall be gray concrete for drivable surface.

**(7)** The minimum overhead clearance shall be 13.5 feet.

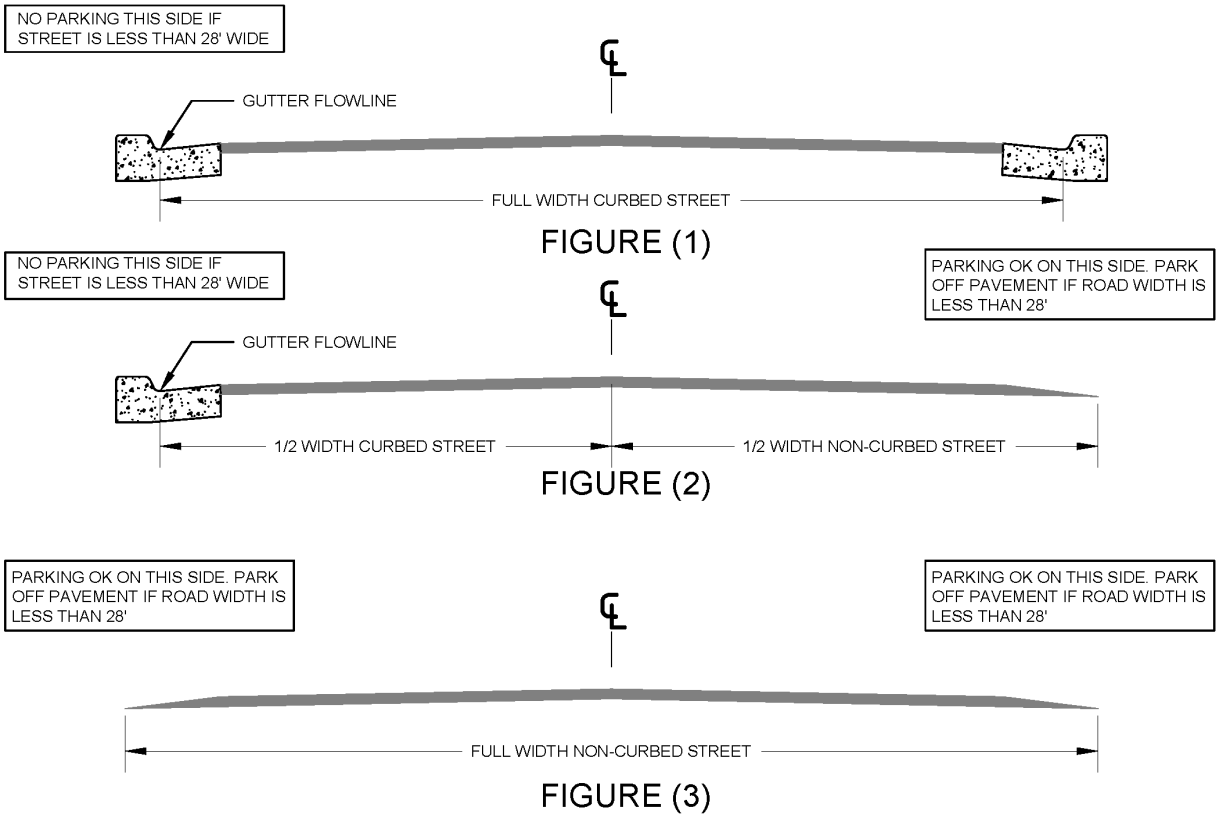
**(8)** The City promotes connectivity. For specific pedestrian, bicycle, and vehicular connections desired see the current Transportation Master Plan and Community Focus Areas.

**(9)** All public curb and sidewalk shall be Sedona red.

**Table 3.4**
## Standards for the Design of Public and Private Streets

| Minimum road width (measured per drawing) | Curb and gutter | On-street parking allowable? | Land use | Maximum speed limit (MPH) | Maximum design average daily traffic (ADT) | Maximum no. of units served |
|---|---|---|---|---|---|---|
| 18 feet with 5-foot shoulders | Yes (rolled curb) | No | Residential | 25 | 250 | 15 single-family units |
| 22 feet with 5-foot shoulders | No | Yes, off pavement, sidewalks, paths | Residential | 25 | 250 | 15 single-family units |
| 26 feet with 5-foot shoulders | Yes | Yes, off pavement, sidewalks, paths | Residential Commercial | 25 | 2,500 | 200 |
| 28 feet with 5-foot shoulders | No | Yes | Residential Commercial | 25 | 2,500 | 200 |
| 16 feet 1-way with 5-foot shoulder on 1 side | Yes | Yes, off pavement, sidewalks, paths | Residential | 25 | 2,000 | 200 |
| 16 feet 2-way with approved turnaround (Max Length 130') | No | No | Residential | 25 | 30 | 3 |

## Road Width Measurement Illustrations



#### (11) Alternative Designs and Materials

[*placeholder for alternatives approved by Engineering*]

## B. Cul-de-Sacs and Dead-End Streets

**(1)** Turnarounds shall be provided at the ends of cul-de-sacs and at elbows on one-way streets. Turnarounds shall meet the minimum requirements of the Sedona Fire District.

**(2)** A cul-de-sac shall have a minimum outside paved radius of 40 feet as measured to the lip of gutter or edge of pavement.

**(3)** A cul-de-sac may have an island no greater than 16 feet in radius centered on the center of the cul-de-sac.

## C. Driveways and Access

Driveways shall be designed in accordance with the ITE Publication No. RP-006B, "Guidelines for Driveway Location and Design.

### (1) Non-Residential

All non-residential development shall be subject to the following:

#### a. General Driveway Standards

Each driveway providing access to a public right-of-way shall comply with the following:

**1.** For radiused driveway entrances, minimum curb radii shall be 25 feet.

**2.** Driveways intersecting with city streets shall have a minimum width of 28 feet and shall not exceed 40 feet in width, unless ingress/egress lanes are separated by a median island a minimum of four feet in width. Any reduction in width below 28 feet shall be at the discretion of the City Engineer.

**3.** The total number of access connections from parking lots to adjacent roadways shall be subject to the approval of the agency having jurisdiction over the right-of-way being accessed.

**4.** Where sidewalks are installed across driveways, such sidewalks and driveways shall comply with the relevant Maricopa Association of Governments Standard Drawings and Specifications (MAG specs).

#### b. Minimum Driveway Clearances to Street Corners

**1.** Driveways located near intersections shall maintain the corner clearances as indicated in the LDC 5.4.F.

**2.** At locations where the recommended corner clearances are not attainable because property frontages are narrow, a minimum corner clearance of 50 feet shall be maintained. At such locations, left turns into and out of the driveway shall be prohibited, if in the opinion of the City Engineer, a potential traffic safety concern is present.

**Figure 4: Minimum Driveway Clearances to Street Corners at Signalized Intersections**

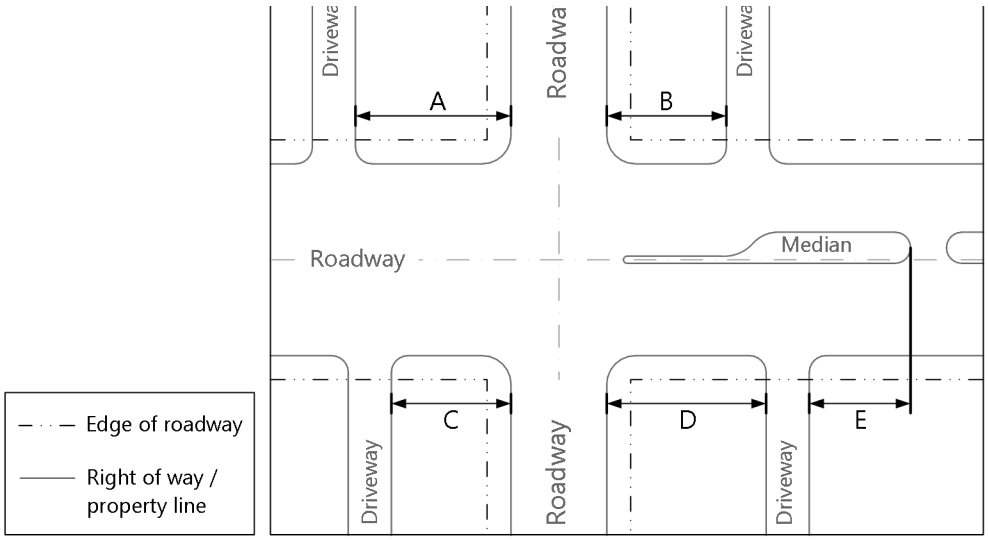



**Table 3.5**
## Signalized Intersections: Required Driveway Clearance (in feet)

| Item | Functional Classification of Road | | |
|---|---|---|---|
| | Arterial | Collector | Local |
| A | 230 | 175 | 50 |
| B | 115 | 85 | 50 |
| C | 230 | 175 | 50 |
| D | 230 | 175 | 50 |
| E | 75 | 0 | 0 |

**Figure 5: Minimum Driveway Clearances to Street Corners at Stop Sign Intersections**

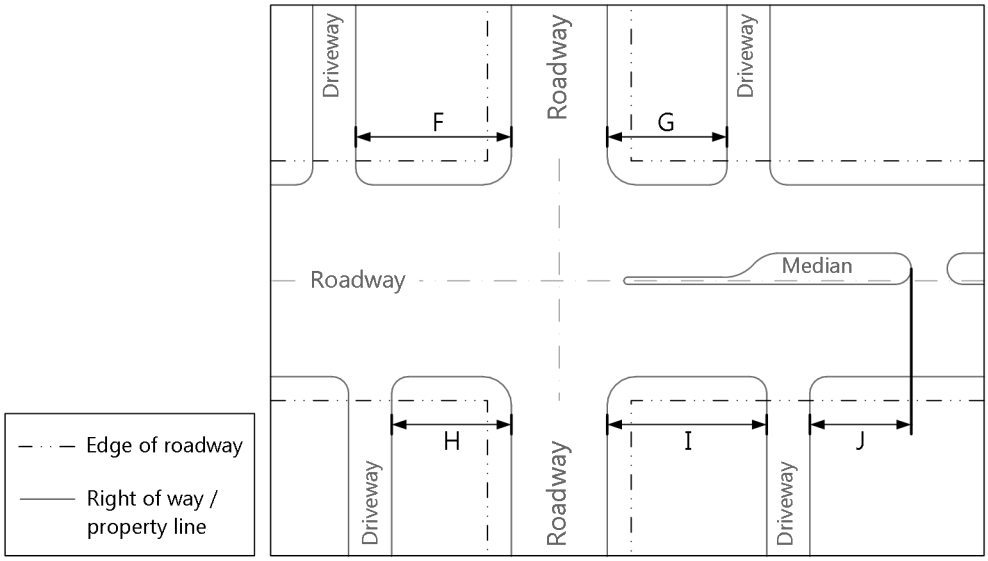



**Table 3.6**
## Stop Sign Intersections: Driveway Clearance (in feet)

| Item | Functional Classification of Road | | |
|---|---|---|---|
| | Arterial | Collector | Local |
| F | 115 | 75 | 50 |
| G | 115 | 85 | 50 |
| H | 85 | 85 | 50 |
| J | 115 | 75 | 50 |
| K | 75 | 0 | 0 |

:

# 3.4. Off-Street Parking and Loading

*See LDC 5.5 Off-Street Parking and Loading*

## A. Site Development Standards for Off-Street Parking Areas

**(2)** Sidewalks, streets or public rights-of-way may not be used for parking except as defined in LDC 5.5.E. Vehicles shall not be allowed to back out or otherwise maneuver from a property into a city arterial or roadway if, in the opinion of the City Engineer and Director, a potential traffic safety concern is present.

**(3)** The total number of access connections from parking lots to adjacent roadways shall be subject to the approval of the agency having jurisdiction.

**(4)** All commercial and public application of off-street parking areas shall be constructed and regularly maintained as follows:

**a.** Grading, drainage and a minimum of 2 inches of asphaltic concrete paving over a 4-inch aggregate base or other acceptable substitute dust-free material to the specifications of the City Engineer;

## B. Parking Area Dimensional Standards

All parking and maneuvering areas shall be constructed according to the dimensional standards set forth in this subsection.

**(1)** If the applicant can provide different acceptable standards based on the Institute of Transportation Engineers (ITE) Standards (current edition), or other professionally recognized sources, the City Engineer may approve alternative standards pursuant to the Minor Modification process outlined in the LDC 8.8.B; however, any alternative standards must also meet the intent and purpose of the LDC.

**(2)** The length of a parking stall may be reduced to 16 feet allowing the front of vehicles to overhang the required parking space by two feet; provided that:

**a.** The curb is no more than four inches in height; and

**b.** The front of the parking space is located adjacent to a landscaped area or sidewalk that is at least six feet in width.

**Figure 1: Conventional Parking Design**

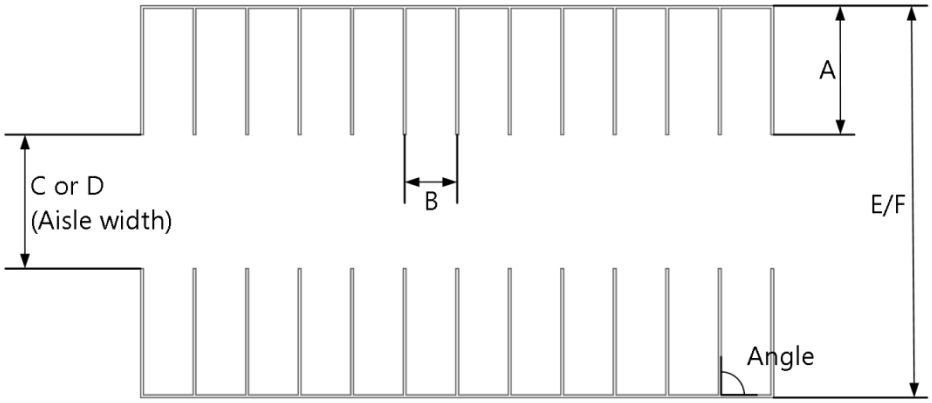



**Table 3.7**
## Parking Dimensions in Feet – Conventional Parking Design

| Angle | Parking Space | | One-Way Aisle | 2-Way Aisle | 1-Way Bay | 2-Way Bay |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| **0° (Parallel)** | 8.0 | 24.0 | | | | |
| **30°** | 16.8 | 18.0 | 12.0 | 20.0 | 45.6 | 51.6 |
| **45°** | 19.1 | 12.7 | 13.0 | 20.0 | 51.2 | 58.2 |
| **60°** | 20.1 | 10.4 | 18.0 | 22.0 | 58.2 | 62.2 |
| **90°** | 18.0[1] | 9.0 | 26.0 | 26.0 | N/A | 62.0 |
| **compact (90°)** | 18.0 | 8.0 | 26.0 | 26.0 | N/A | 62.0 |
| **Motorcycle (90°)** | 16.0 | 4.0 | 26.0 | 26.0 | N/A | 58.0 |
| **Bus and Large Vehicle (90°)** | 12.0 | 40.0 | | | | |

**Figure 2: Interlocked Spaces Parking Design**

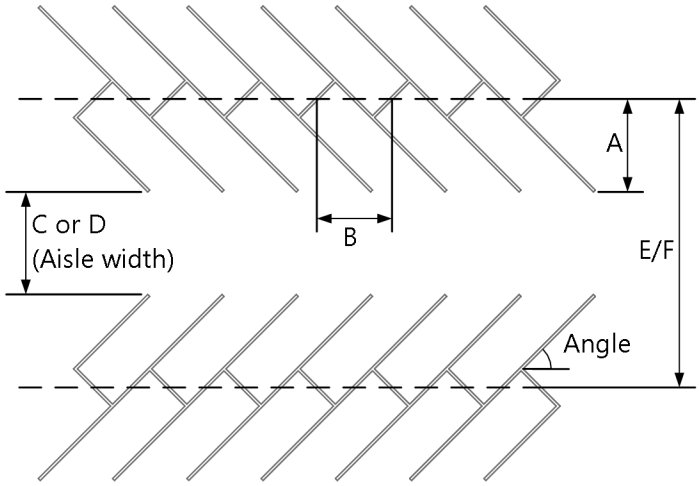
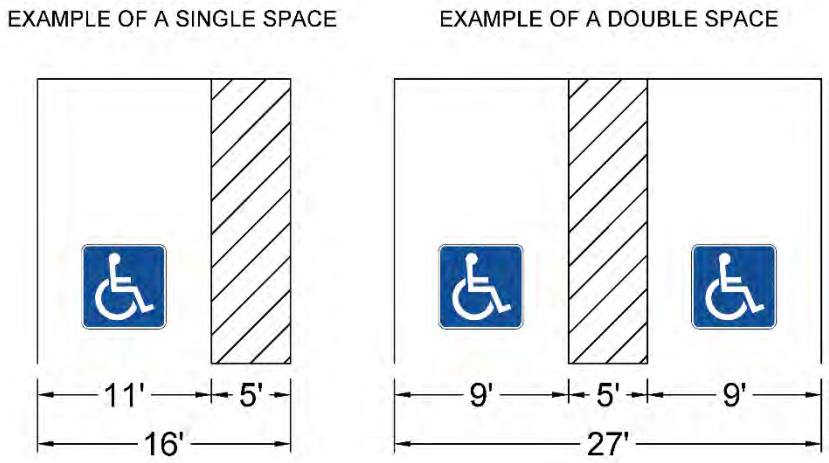



**Table 3.8**
## Parking Dimensions in Feet – Interlocked Parking Design

| Angle | Parking Space | | One-Way Aisle | 2-Way Aisle | 1-Way Bay | 2-Way Bay |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| **30°** | 12.9 | 18.0 | 12.0 | 20.0 | 37.8 | 43.8 |
| **45°** | 15.9 | 12.7 | 13.0 | 20.0 | 44.8 | 51.8 |
| **60°** | 17.0 | 10.4 | 18.0 | 22.0 | 53.7 | 57.7 |

## C. Accessible Parking (ADA) Standards

Each accessible parking space shall conform to ADA Universal Parking Space design guidelines. Stalls shall consist of rectangular areas not less than 11 feet wide by 18 feet long with a 5-foot minimum width access aisle on its right side, except in the case when 2 accessible parking spaces share a single 5-foot-wide access aisle. Every access aisle shall lead directly to a curb ramp and accessible route of travel as set forth in this article.




**(1)** Identification of Accessible Parking Spaces shall be designated as reserved for the disabled as follows:

**a.** Each accessible parking space shall be marked on the ground with the international symbol of accessibility. The access aisle shall be included within the outlined area. The color scheme of the accessible parking space shall contrast with that of the surrounding regular parking spaces.

**b.** Signs shall be placed on a stationary post or object identifying each accessible parking space. Signage must include the international symbol of accessibility and have the minimum verbiage of: "RESERVED PARKING" and "A.R.S. Section 28-884" and "City Code 11-4-6" and "Fines will be strictly enforced." At least 1 accessible parking sign in every 8 accessible spaces shall include the words "Van Accessible."

**c.** These signs shall not be obscured by a vehicle parked in the space. The bottom of the sign shall be located not less than 5 feet above the grade and shall be visible directly in front of the parking space.

**(2)** Location of Accessible Parking Spaces shall conform to the following:

**a.** Accessible parking spaces serving a particular building shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance. In parking facilities that do not serve a particular building, accessible parking shall be located on the shortest accessible route of travel to an accessible pedestrian entrance of the parking facility. In buildings with multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located closest to the accessible entrances.

**(3)** In new parking lots that are nonpaved, the required handicapped parking spaces and required access areas shall be provided on a hard surface to the satisfaction of the Director of Community Development.

**(4)** Where parking is provided in a parking garage or under shade canopies, the ratio of covered to uncovered accessible parking spaces shall not be less than the ratio of covered to uncovered non-accessible parking spaces.

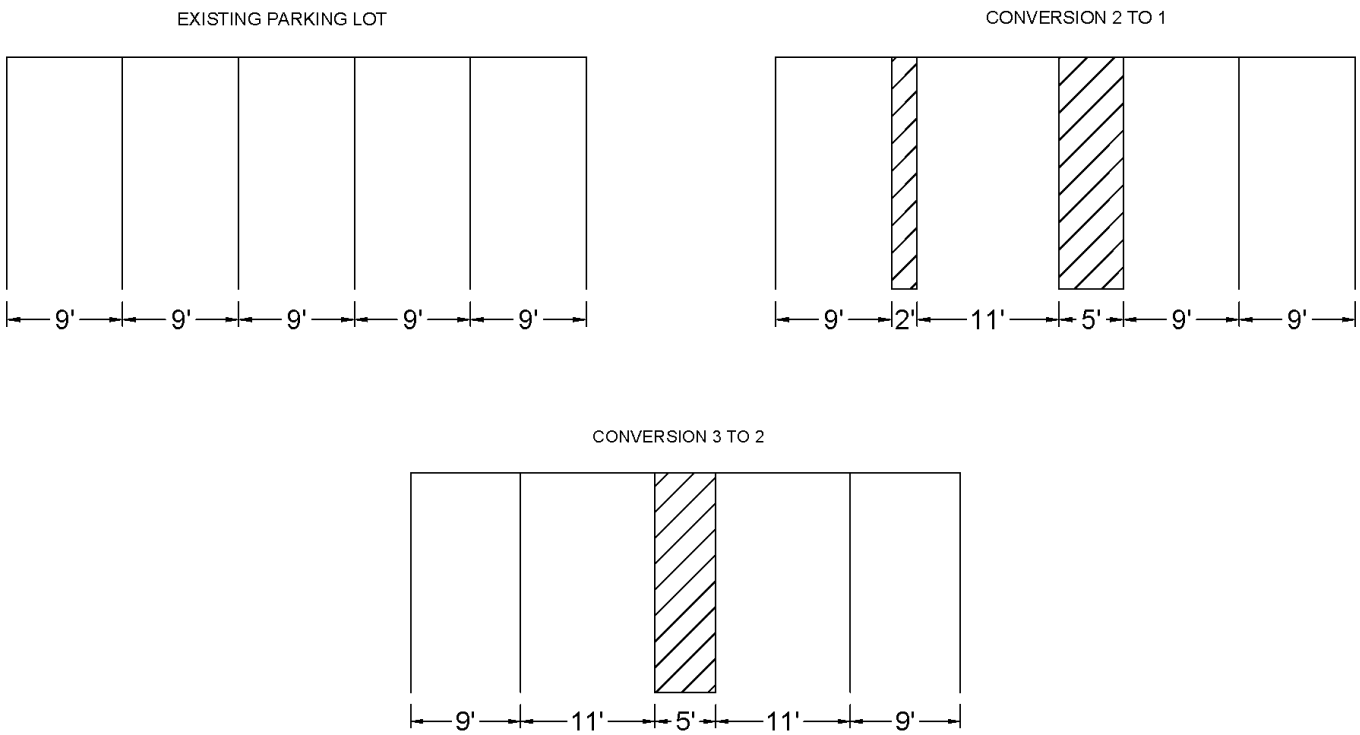
**(5)** Where accessible parking spaces are provided within a parking garage, not less than 20% of the accessible spaces shall be designated for high-profile vehicles, with a minimum headroom clearance of 9 feet, 6 inches provided in all parking, maneuvering and circulation areas serving such spaces. Except when all accessible spaces are high-profile spaces, special signage shall be provided to identify high-profile accessible parking spaces and to direct users to the location of both high-profile and standard-height accessible parking spaces.

**(6)** Existing Parking Lots that have been altered must conform to the following:

**a.** Whenever a parking facility is altered, including restriping, it shall provide accessible parking spaces as required by this article. In the case when conformance to this article results in a loss of parking spaces below that required for a specific use, then the parking facility shall come as close to conformance as possible to the satisfaction of the Director.

**(7)** Parking conversion shall conform to Figure 1 below.

**Figure 1: Interlocked Spaces Parking Design**



# Chapter 4: Appendices

## 4.1. Appendix A: City of Sedona Approved Plant List

*See Section 2.4 Landscaping and LDC Section 5.6 (Landscaping, Buffering, and Screening)*

### TREES

#### NATIVE TREES

| Scientific Name | Common Name | D/E | Synonyms/Notes |
|---|---|---|---|
| *Celtis reticulata* | Netleaf Hackberry | D | *C. laevigata var. reticulata* |
| *Chilopsis linearis* | Desert Willow | D | |
| *Cupressus glabra* | Smoothbark Arizona Cypress | E | *C. arizonica var. glabra* |
| *Juniperus arizonica* | Redberry Juniper | E | |
| *Juniperus deppeana* | Alligator Juniper | E | |
| *Juniperus osteosperma* | Utah Juniper | E | |
| *Juniperus scopulorum* | Rocky Mountain Juniper | E | |
| *Pinus edulis* | Pinyon Pine | E | |
| *Prosopis velutina* | Velvet Mesquite | D | *P. juliflora* |
| *Quercus arizonica* | Arizona White Oak | E | |
| *Quercus emoryi* | Emory Oak | E | |
| *Quercus gambelii* | Gambel Oak | D | |
| *Sapindus Saponaria var. drummondii* | Western Soapberry | D | *S. drummondii* |

*Deciduous or Evergreen

### RIPARIAN

#### NATIVE RIPARIAN TREES

| Scientific Name | Common Name | D/E | Synonyms/Notes |
|---|---|---|---|
| *Acer negundo* | Boxelder | D | |
| *Alnus oblongifolia* | Arizona Alder | D | |
| *Baccharis salicifolia* | Seepwillow | D | |
| *Cornus sericea* | Red Osier Dogwood | D | shrub |
| *Fraxinus velutina* | Arizona Ash | D | |
| *Juglans major* | Arizona Walnut | D | |
| *Platanus wrightii* | Arizona Sycamore | D | |
| *Populus fremontii* | Fremont Cottonwood | D | |
| *Salix exigua* | Coyote Willow | D | shrub |
| *Salix gooddingii* | Goodings Willow | D | |
| *Salix laevigata* | Red Willow | D | |

## ADAPTIVE TREES

| Scientific Name | Common Name | D/E | RN | Synonyms/Notes |
|---|---|---|---|---|
| *Acer glabrum* | Rocky Mountain Maple | D | X | |
| *Acer grandidentatum* | Bigtooth Maple | D | X | |
| *Arbutus arizonica* | Arizona Madrone | E | X | *A. unedo* |
| *Celtis occidentalis* | Common Hackberry | E | X | |
| *Cercis occidentalis* | Western Redbud | D | X | |
| *Chitalpa x tashkentensis* | Chitalpa | D | | |
| *Ebenopsis ebano* | Texas Ebony | E | | *Pithecellobium flexicule* |
| *Eysenhardtia orthocarpa* | Arizona Kidneywood | D | X | |
| *Fraxinus greggii* | Little Leaf Ash | E | X | |
| *Juniperus monosperma* | One-seed Juniper | E | X | |
| *Leucaena retusa* | Golden Leadball Tree | D | | |
| *Maclura pomifera* | Osage Orange | D | | |
| *Pinus monophylla* | Singleleaf Pinyon | E | X | |
| *Pistacia chinensis* | Chinese Pistache | D | | |
| *Prosopis glandulosa* | Honey Mesquite | D | X | |
| Prosopis pubescens | Screwbean Mesquite | D | X | |
| *Prunus americana* | Wild Plum | D | | |
| *Prunus serotine* | Black Cherry | D | X | |
| *Quercus sp.* | Oak trees | E | X | |
| *Robinia x ambigua* | Locust 'Purple Robe' | D | | |
| *Sophora secundiflora* | Texas Mountain Laurel | E | | Tree or shrub |
| *Ungnadia speciosa* | Mexican Buckeye | D | | |

D/E=Deciduous or Evergreen, RN = Regionally Native

## SHRUBS

### NATIVE SHRUBS

| Scientific Name | Common Name | Synonyms/Notes |
|---|---|---|
| *Acacia constricta* | Whitethorn Acacia | |
| *Acacia greggii* | Catclaw Acacia | |
| *Amelanchier utahensis* | Utah Serviceberry | |
| *Arctostaphylos pungens* | Pointleaf Manzanita | |
| *Arctostaphylos pringlei* | Pringles Manzanita | |
| *Atriplex canescens* | Four-wing Saltbush | |
| *Baccharis sarothroides* | Desert Broom | |
| *Berberis fremontii* | Fremont Barberry | *Mahonia fremontii* |
| *Berberis haematocarpa* | Red Barberry | *Mahonia haematocarpa* |
| *Canotia holacantha* | Crucifixion Thorn | |
| *Ceanothus greggii* | Desert Ceanothus | |
| *Ceanothus integerrimus* | Buckbrush | |
| *Cercocarpus breviflorus* | Mountain Mahogany | *C. montanus var. paucidentatus* |
| *Dalea formosa* | Feather Dalea | |
| *Ephedra viridis* | Mormon Tea | |
| *Ericameria laricifolia* | Turpentine Bush | |
| *Fallugia paradoxa* | Apache Plume | |
| *Fendlera rupicola* | Fendlerbush | |
| *Forestiera neomexicana* | New Mexico Olive | *F. pubescens* |
| *Frangula californica* | California Buckthorn | |
| *Fraxinus anomala var. lowellii* | Lowells Ash | |
| *Garrya wrightii* | Wright's Silktassel | |
| *Garrya flavescens* | Yellow Silktassel | |
| *Gutierrezia sarothrae* | Snakeweed | |
| *Krascheninnikovia lanata* | Winterfat | *Ceratoides lanata* |
| *Larrea tridentata* | Creosote | |
| *Lycium pallidum* | Wolfberry | |
| *Ptelea trifoliata* | Hop Tree | |
| *Purshia stansburiana* | Cliff Rose | *Cowania Mexicana; P. subintegra* |
| *Quercus palmeri* | Palmer Oak | *Q. dunnii* |
| *Quercus turbinella* | Scrub Oak | |
| *Rhamnus ilicifolia* | Hollyleaf Buckthorn | |
| *Rhus glabra* | Smooth Sumac | |
| *Rhus ovata* | Sugar Sumac | |
| *Rhus trilobata* | Three Leaf Sumac | Skunkbush, Squawbush |
| *Ribes aureum* | Golden Currant | |
| *Robinia neomexicana* | New Mexico Locust | |
| *Symphoricarpus rotundifolius* | Roundleaf Snowberry | |
| *Ziziphus obtusifolia* | Graythorn | |

## ADAPTIVE SHRUBS

| Scientific Name | Common Name | RN | Synonyms/Notes |
|---|---|---|---|
| *Amelanchier alnifolia* | Serviceberry | X | |
| *Amorpha canescens* | Lead Plant | | |
| *Anisacanthus quadrifidus* | Desert Honeysuckle | | |
| *Arctostaphylos sp.* | Manzanita | X | |
| *Artemisia sp.* | Sage | X | Some are regionally native |
| *Baccharis pilularis* | Coyote Brush | X | |
| *Berberis sp.* | Barberry | | |
| *Caesalpinia gilliesii* | Yellow Bird-of-Paradise | | |
| *Calliandra eriophylla* | Fairy Duster | | |
| *Caryopteris clandonensis* | Bluebeard | | |
| *Ceanothus fendleri* | Fendlers Ceanothus | | |
| *Chamaebatiaria millefolium* | Fernbush | | |
| *Chrysactinia mexicana* | Damianita | | |
| *Cistus sp.* | Rockrose | | |
| *Cleome isomeris* | Bladderpod | X | |
| *Cotoneaster sp.* | Cotoneaster | | |
| *Dalea frutescens* | Black Dalea | | |
| *Encelia farinosa* | Brittlebush | | |
| *Ephedra sp.* | Mormon Tea | X | |
| *Fremontodendron californicum* | California Flannelbush | X | |
| *Genista sp.* | Broom | | |
| *Holodiscus dumosus* | Mountain Spray | X | *Cliff Spirea* |
| *Juniperus sp.* | Junipers | X | |
| *Lavandula stoechas* | Spanish Lavender | | |
| *Leucophyllum frutescens* | Texas Ranger | | |
| *Lycium andersonii* | Desert Wolfberry | X | |
| *Mahonia aquifolium* | Oregon grape | | |
| *Philadelphus lewisii* | Mock Orange | X | |
| *Potentilla fruticosa* | Shrubby Cinquefoil | X | *Dasiphora fruticosa* |
| *Prunus fasciculata* | Desert Almond | X | |
| *Quercus sp.* | Oak shrubs | X | |
| *Rhus sp.* | Sumac | X | |
| *Rosmarinus officinalis* | Rosemary | | |
| *Salvia greggii* | Autumn Sage | | |
| *Santolina chamaecyparissus* | Gray Santolina | | |
| *Senecio spartoides* | Broom Groundsel | | |
| *Senna wislizenii* | Shrubby Senna | x | |
| *Shepherdia argentea* | Silver Buffaloberry | x | |
| *Vauquelinia californica* | Arizona Rosewood | x | Shrub or tree |

# CACTI AND SUCCULENTS

## NATIVE CACTI AND SUCCULENTS

| Scientific Name | Common Name | Notes |
|---|---|---|
| *Agave parryii* | Parry's Agave | |
| *Cylindropuntia leptocaulis* | Desert Christmas Cactus | |
| *Cylindropuntia whipple* | Whipple Cholla | |
| *Fouquieria splendens* | Ocotillo | |
| *Nolina microcarpa* | Beargrass | |
| *Opuntia engelmannii* | Engelmanns Prickly Pear | |
| *Opuntia phaeacanthus* | Brownspine Prickly Pear | |
| *Yucca baccata* | Banana Yucca | |
| *Yucca elata* | Soaptree Yucca | |
| | | |

## ADAPTIVE CACTI

| | | |
|---|---|---|
| *Agave americana* | Century Plant | |
| *Agave chrysantha* | Chrysantha Agave | |
| *Agave palmeri* | Palmer's Agave | |
| *Agave weberi* | Weber's Agave | |
| *Dasylirion wheeleri* | Desert Spoon | |
| *Ferocactus cylindraceus* | Compass Barrel | |
| *Hesperaloe parviflora* | Red Yucca | |
| *Opuntia santa-rita* | Santa Rita Prickly Pear | |
| *Yucca pallida* | Paleleaf Yucca | |
| *Yucca rigida* | Blue Yucca | |

# 4.2. Appendix B: Invasive Weed List

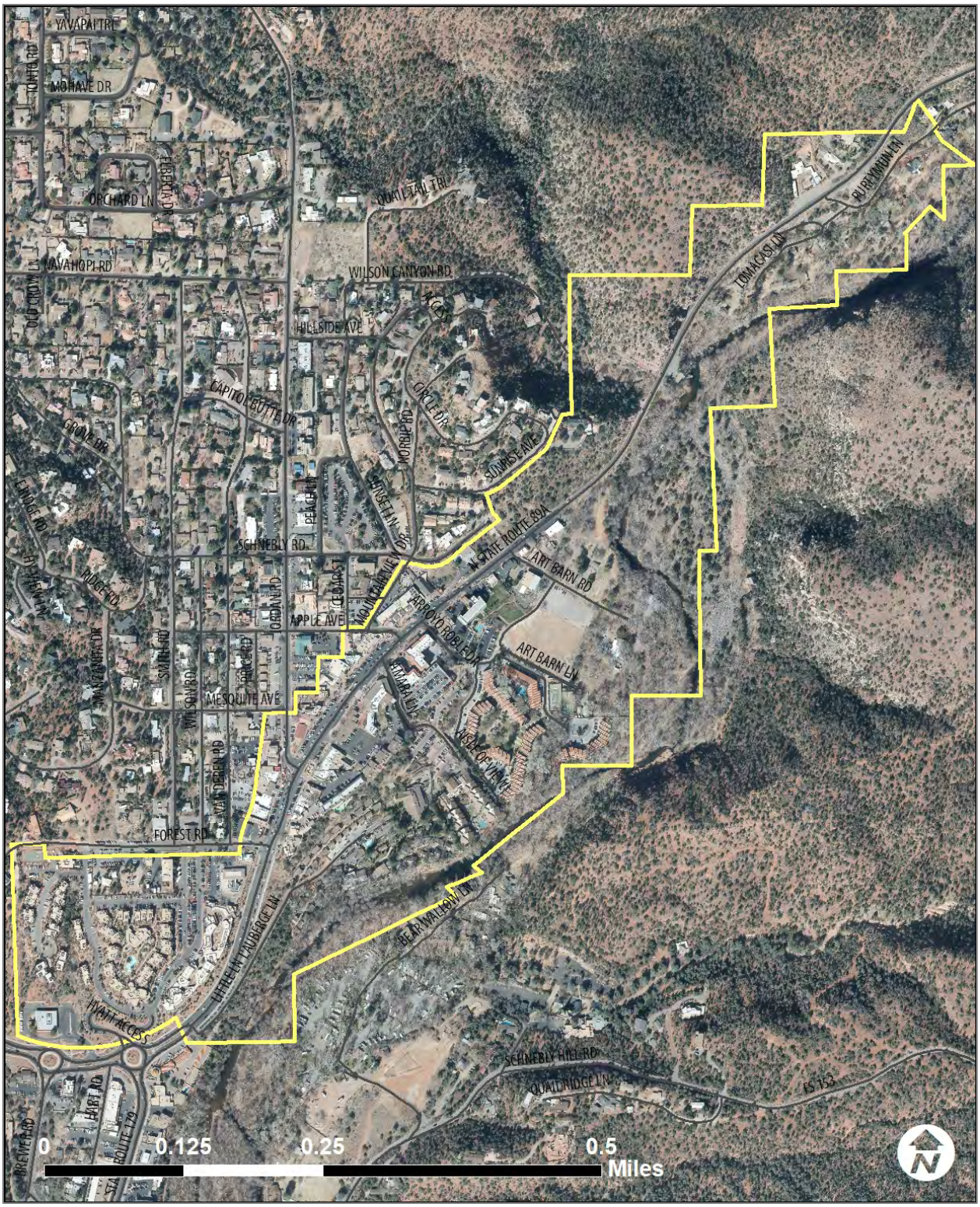
The following are invasive, non-native plant species that are known to occur in Sedona. These should be removed and should not be used as landscape plants. There may be additional, potentially invasive species not listed below, please refer to county and state weed lists for a comprehensive list.

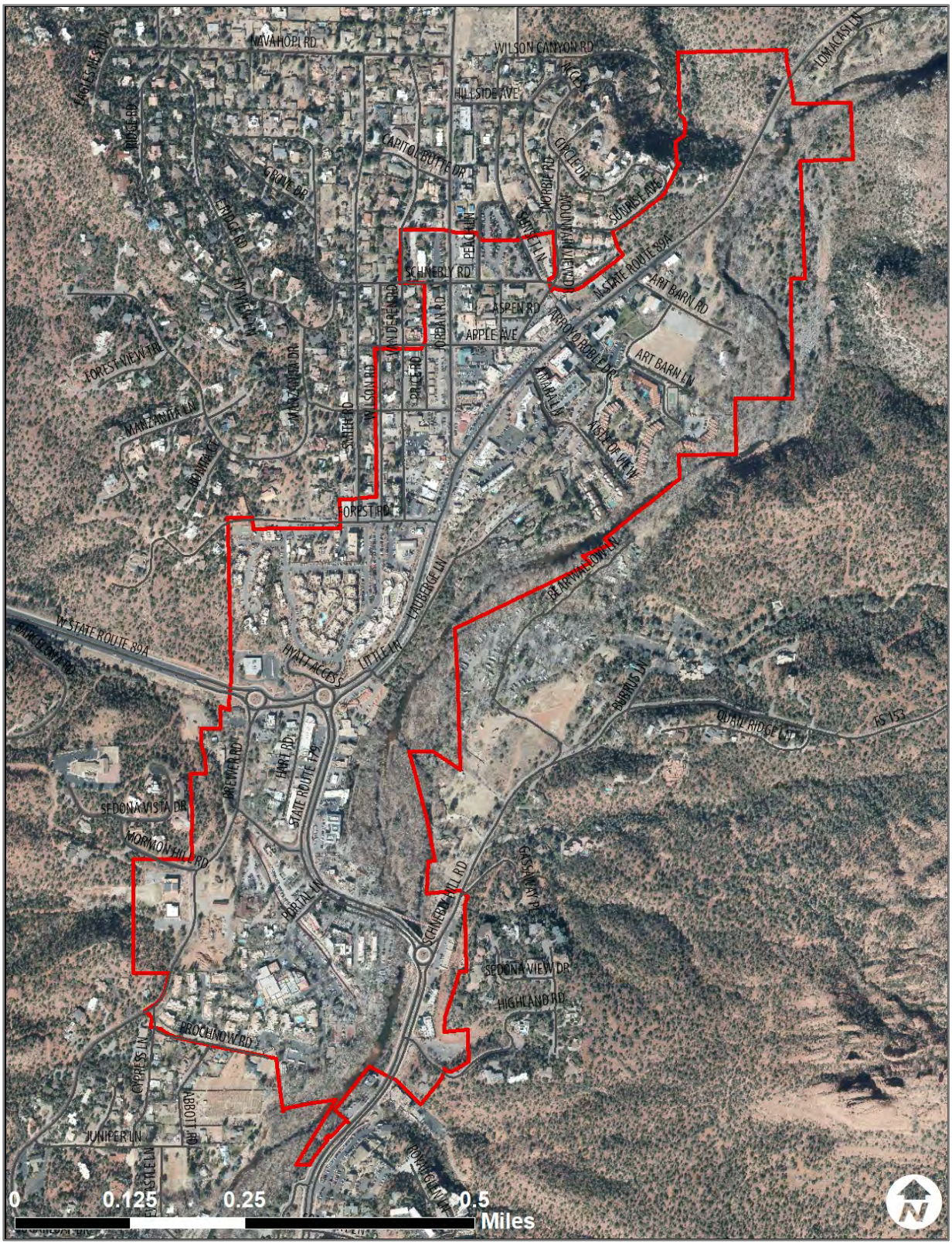
| **TREES** | | |
|---|---|---|
| **Scientific Name** | **Common Name** | **Notes** |
| *Ailanthus altissima* | Tree of Heaven, Paradise Tree | Large old shade trees do not need to be removed unless desired by owner |
| *Elaeagnus angustifolia* | Russian Olive | Remove wherever found |
| *Tamarix chinensis* | Saltcedar, Tamarisk | Remove wherever found. + *T. ramosissima, T. pentandra* |
| *Ulmus pumila* | Siberian Elm | Large old shade trees do not need to be removed unless desired by owner |
| **FORBS, SHRUBS, WOODY PLANTS** | | |
| *Brassica tournefortii* | Asian mustard | |
| *Centaurea diffusa* | Diffuse Knapweed | |
| *Acroptilon repens* | Russian Knapweed | |
| *Centaurea maculosa* | Spotted Knapweed | |
| *Centaurea melitensis* | Maltese Starthistle | |
| *Centaurea solstitalis* | Starthistle | |
| *Cirsium vulgare* | Bull Thistle | |
| *Linaria dalmatica* | Dalmatian toadflax | |
| *Onopordum acanthium* | Scotch Thistle | |
| *Rubus armeniacus* | Himalayan Blackberry | *R. discolor* |
| *Salsola tragus* | Tumbleweed, Russian Thistle | *S. iberica* |
| *Tribulus terrestris* | Goathead, Puncture Vine | |
| **GRASSES** | | |
| *Arundo donax* | Giant Reed | Remove populations where practical |
| *Bothriochloa ischaemum* | Yellow Bluestem | All populations should be removed when found |
| *Bromus diandrus* | Ripgut Brome | Widespread and increasing, beyond ability to eradicate |
| *Bromus japonicus* | Japanese Brome | Common here, beyond ability to eradicate |
| *Bromus rubens* | Red Brome | Widespread and increasing, beyond ability to eradicate |
| *Bromus tectorum* | Cheatgrass | Widespread and increasing, beyond ability to eradicate |
| *Cenchrus spiniflex* | Coastal sandbur | + *C. incertus*; Remove populations where practical |
| *Cortaderia selloana* | Pampas Grass | Occasionally naturalized - remove. |
| *Cynodon dactylon* | Bermudagrass | Widespread and common, treat for aesthetic reasons |
| *Echinochloa crus-gallii* | Barnyard Grass | Widespread and common, treat for aesthetic reasons |
| *Eragrostis curvula* | Weeping lovegrass | Don't add new populations |
| *Eragrostis lehmanniana* | Lehmann lovegrass | Remove populations where practical |
| *Hordeum murinum* | Mouse barley | + *H. glaucum, H. leporinum*; Widespread and increasing, beyond ability to eradicate |
| *Pennisetum setaceum* | Fountain grass | Doesn't seem to escape here, but a real problem in the low desert |
| *Schedonorus arundinaceus* | Tall Fescue (inc. Meadow Fescue) | + *Festuca arundinacea, F. pratensis*; Abundant along Oak Creek, beyond ability to eradicate |

| | | |
|---|---|---|
| *Schismus barbatus* | Mediterranean grass | |
| *Sorghum halepense* | Johnsongrass | Remove populations where practical |

# 4.3. Appendix C: Uptown 89A Character District

***See LDC Section 6.10 (Signs)***



# 4.4. Appendix D: Uptown Entertainment Overlay District

***See LDC Section 5.6.C (Landscaping, Buffering, and Screening)***