

# ***Division Five: Development Regulations***

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## CHAPTER 500

### TITLE AND CONTENTS

#### SECTIONS:

17.500.00	Title
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17.500.10	List of Tables and Figures

**Section 17.500.00 Title.** Division Five of Title 17 is entitled “Development Regulations”.

**Section 17.500.05 Contents.** Division Five consists of the following chapters:

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Chapter 502	Lot Design and Building Placement Standards
Chapter 503	Building Requirements for Residential Construction in the Agricultural-Mining-Recreation Regulatory Land Use District
Chapter 504	(reserved)
Chapter 506	Parking Standards
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## CHAPTER 501

### PUBLIC IMPROVEMENT REQUIREMENTS FOR NEW DEVELOPMENT

#### SECTIONS:

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**Section 17.501.00 Purpose.** The purpose of Chapter 501, Public Improvement Requirements for New Development, is to establish the minimum requirements for the provision of public improvements to support new development.

**Section 17.501.05 Applicability.** The provisions of this chapter apply to all new development which requires approval or issuance of a permit by the county, including but not limited to: subdivision maps, planned unit developments, parcel maps, division into large parcel maps, special use permits, and building permits. Development projects shall be subject to all provisions of this chapter unless specified otherwise in this code.

**Section 17.501.10 General Provisions.**

- A. The county shall not approve new development proposals unless adequate public improvements exist to support the development or provisions have been made for construction of such improvements.
- B. Public improvements shall be constructed concurrently with new development to provide the following public facilities and services, as necessary and appropriate: storm drainage, water supply, sewage disposal, transportation facilities and electric, gas and telecommunications services.
- C. Public improvements shall be provided in a manner that is consistent with the Master Plan and that complies with the requirements of this code and other applicable local, state and federal regulations.

- D. Division Five, Development Regulations, establish the minimum standards for improvements which support new development. The County may require more stringent standards when deemed reasonably necessary and when consistent with the Master Plan and State regulations.
- E. New public improvements shall be adequate to support all new and previously existing development and any potential new development that may occur in the reasonably foreseeable future.

**Section 17.501.15 Improvement Requirements for New Development by Land Use District.** This section establishes the target minimum level of service of public improvements for new development in each land use district. These levels may be modified by the Planning Commission or Board of County Commissioners based upon the specific conditions of each development proposal. The County shall strive to ensure that public improvements for new development meet or exceed these levels whenever possible.

**Table 17.501.15-1 Improvement Requirements for New Development by Land Use District**

Improvements	Regulatory Land Use Districts												
	LDR	MDR	LDS	MDS	HDS	GC	NC	I	PSF	GR	GRNA	AMR	OS
<b>Legal Access</b>	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Roadway Surfacing</b>													
<i>Paved Roadways</i>													
Principal Arterial	X	X	X	X	X	X	X	X	X	X	X	X	X
Major Collector	X	X	X	X	X	X	X	X	X	X	X	X	X
Minor Collector					X	X		X					
Local					X	X							
<i>Chip-Sealed Roadways</i>													
Minor Collector	X	X	X	X			X		X	X	X		
Local			X	X			X	X					
<i>Gravel Roadways</i>													
Minor Collector												X	X
Local	X	X							X	X	X	X	X
<b>Curbs, Gutters &amp; Sidewalks</b>				X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>		X <sup>1</sup>					
<b>Storm Drainage</b>	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Water Supply</b>													
Centralized Service					X <sup>2</sup>								
Individual Wells	X	X	X	X						X	X	X	X

**Table 17.501.15-1 continued**

Improvements	Regulatory Land Use Districts														
	LDR	MDR	LDS	MDS	HDS	GC	NC	I	PSF	GR	GRNA	AMR	OS		
<b>Sewage Disposal</b>															
Centralized Service Individual Sewage Disposal Systems	X	X	X	X	X <sup>3</sup>			X	X	X	X				
<b>Electric Provision</b>	X	X	X	X	X	X	X	X	X	X	X	X			
<b>Fire Protection</b>															
Fire Flow <sup>4</sup> Fire Station within 2.5 mile Radius			X	X	X	X	X	X							
				X <sup>5</sup>	X <sup>5</sup>										

Table Notes:

1. Requirement for these improvements may be waived by the County along local streets when the minimum lot size of new development is 1/2 acre or more.
2. Requirement for centralized water service may be waived by the County pursuant to Section 17.501.30. Individual wells may not be utilized in these land use districts unless the requirement for centralized service has been waived.
3. Requirement for centralized sewage disposal service may be waived by the County pursuant to Section 17.501.35. Individual sewage disposal systems may not be utilized in these land use districts unless the requirement for centralized service has been waived.
4. Where centralized systems are unavailable or are inadequate to provide required fire flow, the applicant shall be required to provide an alternate water source for fire protection, pursuant to Section 17.501.45.
5. Proximity to a fire station may be increased to 10 miles, provided the minimum lot size is one acre or more and the property is not located within a fire hazard area.

**Section 17.501.20 Transportation.** Provisions shall be made to provide legal access and adequate transportation infrastructure to new development to provide a safe, convenient and functional system for vehicular, pedestrian and bicycle circulation.

Rights-of-way and easements shall be provided and transportation infrastructure shall be constructed, as necessary, to provide legal access from an existing public road to each new lot and habitable building which is part of new development. Transportation infrastructure and rights-of-way and easements shall be adequate to support the development and any additional new development in the reasonably foreseeable future.

Transportation infrastructure shall be provided to new development, as required by Table 17.501.15-1 and Chapter 17.514, or when otherwise required by the county when deemed reasonably necessary and when consistent with the Master Plan.

Transportation improvements shall be made in accordance with Chapter 17.514, Transportation Standards.

**Section 17.501.25 Storm Drainage.** Provisions shall be made to provide adequate storm drainage to new development, as necessary, to mitigate on-site storm water runoff, accommodate the potential storm flows of the entire upstream drainage area, and prevent flooding within or downstream of the development.

The County may require the construction of any improvements, as reasonably necessary, to ensure that new development complies with the requirements of this section and Chapter 17.512. Such requirements shall be consistent with the Master Plan and shall be in compliance with applicable local, State and Federal regulations.

Storm drainage improvements shall be made in accordance with Chapter 17.512, Storm Drainage Standards.

**Section 17.501.30 Water Supply.** Provisions shall be made for the supply of water of adequate quality and quantity to all new lots and habitable buildings which are part of new development.

Water shall be provided to new development by a centralized water service system when required by Table 17.501.15-1, when the boundary of a new development is located within 400 feet of an existing main line of a water system, or when otherwise required by the county when deemed reasonably necessary and when consistent with the Master Plan. The requirement for centralized water service may be waived pursuant to Section 17.516.15. Where centralized water service is not required or is unavailable, water shall be provided by individual wells.

Water supply improvements shall be made in accordance with Chapter 17.516, Water Supply Standards.

**Section 17.501.35 Sewage Disposal.** Provisions shall be made to provide an adequate method of sewage disposal to all new lots and habitable buildings which are part of new development.

Sewage disposal shall be provided by centralized sewer system:

- A. to lots with an area less than one acre which are supplied water by wells.
- B. to manufactured home and RV parks which allow more than one unit per acre and which water is supplied by well(s).
- C. when required by Table 17.501.15-1, when the boundary of a new development is located within 400 feet of an existing main line of a centralized sewer system, or when otherwise required by the county when deemed reasonably necessary and when consistent with the Master Plan.

The requirement for centralized sewer service may be waived pursuant to Section 17.518.15. Where centralized sewer service is not required or is unavailable, sewage disposal shall be provided by individual sewage disposal systems.

Sewage Disposal improvements shall be made in accordance with Chapter 17.518, Sewage Disposal Standards.

**Section 17.501.40 Electric Service.** Provisions shall be made to provide electricity to all new lots and habitable buildings which are part of new development. Electric service shall be provided to all new development in the land use districts indicated in Table 17.501.15-1.

New development shall be connected to existing public electric utility infrastructure if service is available. This requirement may be waived by the County when public electric utility service is unavailable or it has been determined that due to special circumstances, enforcement of this requirement will result in unnecessary hardship to the applicant. Before the County may waive this requirement, the applicant shall prove that provisions have been made for an adequate alternative electric source.

**Section 17.501.45 Fire Protection.** Provisions shall be made to provide fire protection to new development as required by Table 17.501.15-1.

Adequate fire flow shall be provided to new development when required by Table 17.501.15-1. Where centralized systems are unavailable or are inadequate to provide required fire flow, the applicant shall be required to provide an alternate water source for fire protection, such as a standpipe or water tank. Alternate water sources must be approved by the County.

The County shall not approve new development in the land use districts indicated in Table 17.501.15-1 unless such development is within 2.5 miles of a fire station. This distance may be increased to 10 miles, provided the minimum lot size of the development is one acre or more and the property is not located within a fire hazard area.

**Section 17.501.50 Other Improvements and Services.** The county may require provisions for other improvements and services to be provided to new development when reasonably necessary. Such other improvements and services may include but shall not be limited to: telecommunications service, gas service, street lighting, bike paths, fencing around watercourses or other hazards, etc.

**Section 17.501.55 Easements / Rights-of-Way.**

- A. Adequate on-site and off-site easements and rights-of-way shall be provided and offered for dedication for the construction of all public improvements, as part of a new

development proposal. Such easements and rights-of-way shall be of sufficient size to facilitate future expansion of public improvements.

- B. Easements shall be centered on or be adjacent to property boundaries whenever possible and practical.
- C. Public utility easements shall be at least 10 feet wide. The County may require additional width, if necessary, due to specific conditions such as unusual topography or for easements for multiple utilities.

**Section 17.501.60 Phasing of Development.**

- A. New development shall be constructed in phases, when necessary, to maintain adequate levels of services provided to existing development by existing public infrastructure.
- B. The County may require the phasing of development or improvements in order to maintain adequate levels of service for existing public services and facilities or for other reasons based upon maintaining the health, safety and general welfare of the County residents.
- C. Phased development projects shall be designed so that at completion of each cumulative phase the project is capable of functioning effectively and independently.

**Section 17.501.65 Extension / Over-sizing of Improvements.**

- A. The County may require the extension of public improvements, easements and rights-of-way completely through the subject property of a new development, when reasonably necessary, to facilitate expansion of public improvements to future development.
- B. The County may require oversized infrastructure, when reasonably necessary, to accommodate future development.
- C. When the requirements permitted by this section are made, an agreement may be entered into between the County and the developer for reimbursement for extended or oversized improvements. Such an agreement shall be made pursuant to Chapter 17.616, Development Agreements.

**Section 17.501.70 Improvement Plans.** All proposed public improvements shall be reviewed and approved by the County Engineer to ensure that such improvements will be constructed to County standards and comply with the Development Code and other applicable regulations. Improvement plans shall be prepared, submitted to the County and reviewed pursuant to Chapter 17.618, Improvement Plans.

**Section 17.501.75 Construction and Materials Specifications.** Except as otherwise provided in this code, the construction and materials specifications used for the construction of public improvements shall be those established in the latest edition of the Standard Specifications for Public Works Construction (Orange Book).

**Section 17.501.80 Inspections and Testing** All public improvements shall be inspected and tested by the County to ensure that such improvements are constructed to County standards

and specifications. Public improvements must pass inspection by the County prior to the use or occupancy of a new development. Inspections and testing shall take place in accordance with Chapter 17.620, Construction, Inspection and Bonding of Public Improvements.

**Section 17.501.85 Bonding.** Performance bonding shall be submitted to the County prior to commencing construction activity to guarantee completion of construction of public improvements. Additionally, maintenance bonding shall be submitted after completion of construction to guarantee against defects in workmanship or materials of the constructed public improvements. Bonding shall take place in accordance with Chapter 17.620, Construction, Inspection and Bonding of Public Improvements.

CHAPTER 502

**LOT DESIGN AND BUILDING PLACEMENT STANDARDS**

SECTIONS:

- 17.502.00 Purpose
- 17.502.05 General Lot Dimensions
- 17.502.10 Combining Lots
- 17.502.15 Unobstructed Yards
- 17.502.20 Single-Family Lots
- 17.502.25 Non-Residential Lots
- 17.502.30 Measurements and Exceptions
- 17.502.35 Height
- 17.502.40 Corner Lots
- 17.502.45 Through Lots
- 17.502.50 Flag Lots
- 17.502.55 Lots and Blocks
- 17.502.60 Fences and Screening

**Section 17.502.00 Purpose.** The purpose of Chapter 502, Lot Design and Building Placement Standards, is to establish standards for the design of new lots and the placement of buildings and structures on lots.

**Section 17.502.05 General Lot Dimensions.** The lot standards provided in this section shall apply in each regulatory land use district in which such uses are permitted. Every lot shall meet the minimum required setbacks, except for permissible accessory buildings in the rear yard and as further provided in this code. Setbacks apply on each lot or parcel where a building may be erected. Density and dimensional standards apply under ideal conditions. Topography, hydrology or other conditions may necessitate reduced densities, greater setbacks, greater lot sizes or reduced lot coverage.

**Table 17.502.05-1 Density and Dimensions Standards**

Land Use District	Maximum Density (units/acre)	Min. Lot Size (net)		Minimum Setbacks			Max. Lot Coverage (%)	Max. Height (ft.)
		Area (sq. ft. or acre)	Width (ft.)	Front (ft.)	Side (ft.)	Rear (ft.)		
AMR	1/160	-	-	50	50	50	-	35
GR	1/40	-	-	50	50	50	-	35
LDR	1/20	20 ac	300	50	50	50	5	35
MDR	1/10	10 ac	300	50	50	50	5	35
LDS	1/2 ½	2.5 ac	150	25	20	20	20	35
MDS	1/1	10,890 sq ft	120	25	20	20	20	35
HDS	4/1	10,000 sq ft	80	20/25 <sup>1</sup>	20	20	20	35
NC	N/A	10,000 sq ft	60	25	20	25	60	35
GC	N/A	2 ac	50	25	20	25	70	40
I	N/A	2 ac <sup>2</sup>	100	30	25	25	80	40

## Notes for Table 17.502.05-1

1. The building shall be set back 20 feet from the front property line. Garage must be set back at least 25 feet from the front property line. Dwellings shall not be closer than 20 feet to any other structure except for customary accessory structures (see Chapter 17.306, Accessory Uses and Structures).
2. Unless industry is within an industrial park formed under NRS Chapter 278, minimum is then one acre.

**Section 17.502.10 Combining Lots.** If two or more lots must be combined to meet the minimum yard requirements of this chapter, the lots shall be legally merged into one lot before a building permit will be issued.

**Section 17.502.15 Unobstructed Yards.** Any yard required by this code shall be open and unobstructed from the ground to the sky except as provided in this chapter.

**Section 17.502.20 Single-Family Lots.** The regulations governing development of single-family lots shall be as follows:

- A. Bulk and Density Standards. Maximum height, as well as the minimum lot size, depth, width and building setbacks for single-family development shall comply with the applicable regulatory land use standards and the standards established in Table 17.502.05-1.
- B. Single-Family Lots Less Than 10 acres. Single family lots smaller than 10 acres shall be deeper than wide, with a depth to width ratio of not greater than 3:1.
- C. Cul-de-Sac Lot. For lots on cul-de-sacs or similar circumstances, the minimum width shall apply at all points between the front and rear setback lines. Cul-de-sac lots shall have a minimum width of 25 feet at the street line.
- D. Minimum Yard Requirements. The minimum yard requirements shall be increased to 30 feet from any lot or parcel boundary which abuts an arterial or collector street along the side or rear property line.
- E. Principal Buildings/Lot. Only one principal building is permitted on a lot.

**Section 17.502.25 Non-Residential Lots.** The regulations governing development of non-residential lots shall be as follows:

- A. Canopy Setback. Canopies connected to the main building shall be set back a minimum of 15 feet from any property line.
- B. Side Yard Setback. No interior side yard will be required on contiguous lots developed as a common project, except as required to comply with fire code.
- C. Accessory Structure Setbacks. Accessory structures shall be located in compliance with the setback requirements established by Table 17.502.05-1.
- D. Principal Building/Lot. No more than one principal building may be permitted on a lot.

**Section 17.502.30 Measurements and Exceptions.** The methods of measurement and exceptions to the regulations governing development of single-family and non-residential lots shall be as follows:

A. Density. Maximum density is measured as the number of dwelling units per gross acre(s) of land. Maximum density is measured by dividing the number of dwelling units on a lot or parcel by the parcel's gross area (in acres).

B. Lot Area.

1. Measurement. Lot area, as required in Table 17.502.05-1, is measured as the net amount of contiguous land area contained within the property lines of a lot or parcel, not including streets or rights-of-way, floodways, wetlands, ponds or slopes in excess of 30 percent.

2. Exceptions. No building permit or development approval shall be issued for a lot that does not meet the minimum lot requirements of this code except in the following cases.

a. Utilities using land or an unoccupied building covering less than 1,000 square feet of site area are exempt from minimum lot area standards (i.e., sewer lift station, telecommunications buildings).

b. The minimum lot area standards of this code shall not prohibit the construction of a detached dwelling unit on a lot that was legally platted or recorded before the adoption of this code, provided that the dwelling unit is constructed in compliance with all applicable dimensional standards and meets the minimum health and safety standards for water and wastewater facilities.

C. Lot width is measured between side lot lines along a line that is parallel to the front lot line or its chord and measured at the front setback.

D. Street Frontage is measured between side lot lines along the front lot line.

E. Setbacks.

1. Measurement. Setbacks are measured perpendicularly from the property lines of the lot inward towards the center of the lot to the required distance.

Setbacks must be unobstructed from the ground to the sky except as otherwise allowed in this section.

2. Exceptions and Permitted Encroachments. The following features may encroach into required setbacks:

a. Landscaping;

b. Bay windows, not to exceed three feet;

- c. Chimneys, not to exceed two feet;
  - d. Clothesline post;
  - e. Driveways, curbs and sidewalks;
  - f. Flagpoles;
  - g. Heating and cooling units, not to exceed three feet;
  - h. Mailboxes;
  - i. Overhanging roof, eave, gutter, cornice, or other architectural features and awnings, not to exceed three feet;
  - j. Wells and underground utilities;
  - k. Signs;
  - l. Steps, stairs or fire escapes (non-enclosed), not to exceed six feet;
  - m. Uncovered, unenclosed terraces or porches not to exceed six feet;
  - n. Accessory buildings, within required rear setbacks only;
  - o. Fences and walls; and
  - p. Yard and service lighting fixtures, and poles.
3. Transition Area between Residential, General Rural, and Commercial regulatory land use district within the Agricultural Preservation Boundary. Where a parcel in a residential regulatory land use district abuts the Agricultural Preservation Boundary, the setback of the principal building shall be a minimum of 100 feet. When the property lies partially within the Agricultural Preservation Boundary, then the setback shall be measured from the boundaries of the Agricultural Preservation Boundary.
4. Exceptions to Agricultural Preservation Boundary Setback Requirements. These setback requirements shall not apply in the following circumstances:
- a. The property is separated from the Agricultural Preservation Boundary by a natural barrier or public improvement, including streams, rivers, lakes, ponds, hills, public streets, highways or the like, and such barrier or improvement is at least 50 feet wide and properly screened and buffered if such barrier is less than 100 feet wide;
  - b. Any use or structure, including accessory structures and uses, which are permitted by right in the Agricultural Preservation Boundary.
5. Permitted Activities within Agricultural Preservation Boundary Setbacks.

- a. Agricultural uses;
- b. Farm-related uses;
- c. Landscaping activities;
- d. The erection, construction, extension or expansion of fences, berms, walls or other structures designed principally to minimize potential nuisances such as dirt, litter, noise, glare or signs from or on adjacent properties; provided, however, that such structures shall be located, to the extent practicable, on or adjacent to the property line abutting adjoining properties within the AP zoning district, unless such property lie partially within the AP District; and
- e. Alleys or fire access roads.

6. Prohibited Activities Within Agricultural Preservation Boundary Setbacks.

- a. Any construction, modification, extension, erection or expansions of buildings or structures; or any land excavation, land clearing, land improvement or any combination thereof, which is done to facilitate any of the above-mentioned activities;
- b. Placement of fill or dumping;
- c. Storage of materials;
- d. The construction of parking areas, driveways or other impervious surfaces.

F. Lot Coverage. All buildings hereafter designed or erected and existing buildings which may be reconstructed, altered, moved or enlarged shall not exceed the maximum building coverage regulations of the district in which they may be located. Lot coverage is measured as the percentage of the total lot area covered by buildings and other impervious surfaces. It is calculated by dividing the square footage of impervious cover by the square footage of the lot.

**Section 17.502.35 Height.** All buildings or structures hereafter designed or erected and existing buildings which may be reconstructed, altered, moved or enlarged shall comply with the height regulations and exceptions of the district in which they may be located.

- 1. Measurement. Building height is measured as the vertical distance between the average finished grade at the base of the building along the side of the building being measured and:
  - a. The average height level between the eaves and ridge line of a gable or hip roof;
  - b. The highest point of a mansard or gambrel roof;
  - c. The highest point of the coping or parapet of a flat roof; or

- d. Two-thirds the height of an A-type or any roof with a pitch of 1:1 or steeper.
2. Exceptions. Regulatory land use district height limits do not apply to:
- a. Church spires, belfries, cupolas, domes, chimneys, flues, antennas, satellite dishes, or water towers, silos, windmills and wind machines provided that the measured height of the structures is limited or the structure is placed on the property to avoid falling across any property lines.
  - b. Parapet walls extending four feet or less above the limiting height on which they rest.
  - c. Bulkheads, elevator towers, one-story penthouses, water tanks or similar structures, provided that the aggregate floor area of such structures is not greater than 1/2 of the total roof area.
  - d. Public and Quasi-Public Buildings: Churches, schools and public buildings may exceed the maximum height limits subject to the approval of a special use permit.
  - e. Accessory Buildings: The heights for accessory buildings are as set forth in Chapter 17.306, Accessory Uses and Structures.
  - f. Antennas: The heights for antennas are as set forth in Chapter 17.320, Communication Facilities.

#### **Section 17.502.40 Corner Lots.**

- A. Obstructions to Vision. On a corner lot in any regulatory land use district, no fence, wall, hedge, or other planting or structure that will obstruct vision between a height of 2.5 feet and 10 feet above the center line grades of the intersecting streets shall be erected, placed or maintained within the following areas:
  - 1. Intersecting of two Local Streets. The triangular area formed by connecting the right-of-way lines, at points which are 25 feet distance from the intersection of the right-of-way lines, and measured along the right-of-way lines; or
  - 2. Intersection Involving One or More Collector or Arterial Streets. The triangular area formed by connecting the center lines of the intersecting streets at points which are 100 feet from their point of intersection, whichever is greater.
- B. Modification to Standards. The County Engineer may allow modifications to the distance required at intersections if the safety of pedestrians, bicyclists and motorists is ensured.
- C. Access. Corner lots adjacent to streets of unequal classification shall access the street of the lesser classification (e.g., designed for the least capacity), based upon traffic volume.
- D. Setbacks. Where two or more of a property's frontages constitute front yards on a corner lot, one of the yards shall be deemed to be the main entrance and all other yards with street frontage shall be considered modified side yards.

**Section 17.502.45 Through Lots.** Through lots, or double-frontage lots, shall be avoided except where essential to separate residential development from arterial roads or to overcome specific disadvantages of topography and orientation. Access to through lots shall be from the street with the lowest projected traffic volume.

**Section 17.502.50 Flag Lots.** Flag lots are prohibited except for parcels in General Rural and Agriculture-Mining-Recreation regulatory land use districts under the following conditions:

- A. Access. The flag lot directly accesses a local street;
- B. Pole Width. The aggregate width of the pole, or poles for two adjacent flag lots, is a minimum of 60 feet in width with minimum pole width of 30 feet; and
- C. A strip of land with a minimum width of 60 feet shall be retained free of permanent structures for the length of the flag lot.
- D. Specific Requirement. Flag lots may be created for agricultural or business purposes in the General Rural Regulatory Land Use District and within the Agricultural Preservation Overlay District Boundary, but flag lots are not allowed for residential dwellings.

**Section 17.502.55 Lots and Blocks.** The length and width of blocks shall be sufficient to accommodate two tiers of lots with minimum standards specified by the applicable regulatory zone and this Section, except where a single row of lots back up to an arterial street. When reviewing proposed lot and block arrangements, the following factors shall be considered:

- A. Adequate Building Sites Required. Provisions of adequate building sites suitable to the special needs of the type of land use (residential, commercial or other) proposed for development shall be provided, taking into consideration topographical and drainage features.
- B. Minimum Lot Sizes Established. Minimum land use district and lot requirements defining lot sizes and dimensions shall be accommodated without creating unusable lot remnants.
- C. Safe Access Required. Block layout shall enable development to meet code requirements for convenient access, circulation, control and safety of street traffic.
- D. Crosswalks. The Board of County Commissioners may require the dedication of a pedestrian access easement and crosswalk and construction of sidewalks for any block that exceeds 1,320 feet in length or for any cul-de-sac located within 1/2 mile of a school, park or neighborhood commercial center.
- E. Lot Lines. All quadrangular lots and, so far as practical all other lots, shall have side lines at right angles to straight street lines or radial to curved street lines. Unusual or odd-shaped lots having boundary lines that intersect at extreme angles shall be avoided.
- F. Lot Orientation. The lot line common to the street right-of-way line shall be the front line. All lots shall face the front line and a similar lot across the street. Wherever feasible, lots shall be arranged so that the rear line does not abut the side line of an adjacent lot.

- G. Driveways. Driveways shall be designed and constructed in conformance with Pershing County Code. Up to six lots may have access from a shared driveway, provided that an access easement is required to facilitate pedestrian and bicycle access through any subdivision within 1/2 mile of a school, park or neighborhood commercial center.
- H. Lot Remnants. No lot or parcel shall be created which fails to meet the minimum standards of the applicable land use district and this code, except pursuant to a planned district which provides for the perpetual maintenance of such remnants. Reserve strips of land between the end of a street and a parcel boundary are prohibited.

#### **Section 17.502.60 Fences and Screening.**

- A. Non-Agricultural Use Types. Opaque or solid fences shall be placed no closer to the front lot line than the front yard setback line established by the building(s) erected upon the lot. Wood fences not exceeding three feet in height, chain link fences not exceeding four and one-half feet in height, wrought iron fences and other decorative fences may be located in the front yard, provided that they do not conflict with the sight triangle. The maximum height for the remainder of the non-agricultural use types shall be six feet. Where two or more of a property's frontages constitute front yards on a corner lot, one of the yards shall be deemed to be the main entrance and all other yards with street frontage shall be considered modified side yards where fences, walls and screening can have a maximum height of six feet as long as the fences, walls and screening are located at least 10 feet from the modified side yard property line.
- B. Open Range Use Types. Property line fences shall be required to prevent livestock from crossing onto adjacent property. The fence shall be constructed and installed in accordance with NRS 569.431. Generally, fencing used to enclose livestock shall comply with NRS 569.440 to 569.471.
- C. Height. Fences shall not exceed six feet in height except where used for public utilities, public or private schools, public or private recreation facilities, industrial properties, where required for wrecking/disposal operations and junk or salvage yards, or when required or permitted otherwise by a provision of this code.
- D. Electric Fence. Electric fences shall be permitted only in the agricultural preservation boundary and Agriculture-Mining-Recreation regulatory land use districts.
- E. Barbed Wire Fencing. Barbed wire fences or barbed wire assemblies atop fences are prohibited in the High Density Suburban land use district.

## CHAPTER 503

### **BUILDING REQUIREMENTS FOR RESIDENTIAL CONSTRUCTION IN THE AGRICULTURAL-MINING-RECREATION REGULATORY LAND USE DISTRICT**

#### SECTIONS:

17.503.00	Purpose
17.503.05	Requirements for Application
17.503.10	Site Plan
17.503.15	Construction Plan

**Section 17.503.00 Purpose.** The purpose of Chapter 503 is to provide uniform building specifications for all residential construction in the Agricultural-Mining-Recreation Regulatory Land Use District. The construction of residential building shall not result in a substantial detriment to the public good, substantial impairment of the intent, purpose, and spirit of the Master Plan and these Regulations if done in accordance with this chapter. The building permit requirements under this chapter are designed to allow residential construction which generally is incompatible with the permitted land uses in the AMR Regulatory Land Use District, but which are allowed due to the singular nature of the issues presented and a thorough review required of the location, design, configuration, and imposition of conditions in order to ensure the appropriateness of the construction of a home, at a particular location within the Agricultural-Mining-Recreation Regulatory Land Use District.

**Section 17.503.05 Requirements for Application.** Prior to the issuance of a residential building permit, the property owner, or the property owner's authorized agent (including a contractor building the home), shall file an Application for the Issuance of a Residential Building Permit in the Agricultural-Mining-Recreation Regulatory Land Use District. The Permit shall not be granted if the parcel does not meet the requirements of 17.106.85 for residential building rights. At the time that the Application for the Issuance of a Residential Building Permit in the Agricultural-Mining-Recreation Regulatory Land Use District is submitted, it shall include, at a minimum, the following:

- A. **Residential Building Permit Application:** A residential building permit application with all documents required to build a residence in Pershing County;
- B. **Site Plan:** A Site Plan, as set forth herein, which clearly delineates the location that the home will be constructed, the roads and easements which will be needed for access to the parcel from the nearest main county road or state highway, and demonstrated sources that will provide potable water, electricity, phone service, fire suppression, and any other necessary utilities;
- C. **Flood Plain Management:** A sworn statement by the applicant showing that the property is not situated within an area covered by Chapter 17.510 of the Pershing County Code, which covers flood plain management. If the Planning and Building Department determines that the property is situated within an area covered by the floodplain management provisions of Pershing County Code 17.510, or the applicant fails to submit a sworn statement demonstrating to the Planning and Building Department that the property is not situated within an area covered by the floodplain management provisions

of Pershing County Code 17.510, the applicant must submit a Construction Plan, as set forth herein, with a copy of the agreement with an Engineer who is to provide the services required in the Construction Plan;

- D. Building Plans. The applicant must submit building plans for the proposed residential building/house, which shall be reviewed to determine if the building plans meet approved building standards under the County Code and other relevant provisions of State and/or Federal Law;
- E. Parcel Improvement Declaration. The application shall contain a signed acknowledgement that the issuance of a building permit is conditioned upon the construction of and/or reconditioning of all roads that are needed to provide access to the property from the nearest maintained county road or state highway in accordance with the standards for an access road in Pershing County (as to the base, compaction, culverts, access permits, and other requirements.)

**Section 17.503.10 Site Plan.** The applicant shall submit a site plan. The site plan should contain the following sections:

- A. A site map, which clearly sets forth each of the following:
  - 1. The proposed location on the parcel on which the home will be constructed, demonstrating appropriate setbacks;
  - 2. The proposed location on the parcel of a standpipe which shall be located at least 100 feet from the dwelling with separate power source from the dwelling;
  - 3. The proposed location on the parcel of the well and well pumping apparatus and water lines;
  - 4. The proposed location on the parcel of any septic or sewer systems;
  - 5. The proposed location on the parcel of the electrical, telephone, and other utilities/services to the home;
  - 6. The proposed location on the parcel of fire suppression fuel breaks which should be a minimum of 100 feet from the dwelling;
  - 7. The proposed location on the parcel of a driveway turn around which is adequate for fire trucks and emergency equipment;
  - 8. The proposed location on the parcel of drainage ditches/washes/canals;
  - 9. The proposed location on the parcel of any roads giving access to the parcel and home, detailing existing easements, easements which must be obtained, and the proposed route to the nearest county road or state highway; and
  - 10. The proposed location of any easements, existing or needed, for any electrical, telephone, or other utility service.

- B. Prior to the issuance of a certificate of occupancy, the Applicant must submit a certification demonstrating the following:
1. That the property has a well which:
    - a. Has water which meets or can be brought into compliance through the use of a designated filtration system with the minimum health and safety standards set by the State of Nevada for drinking water;
    - b. Has a demonstrated supply of water which provides at a minimum 15 gallons per minute;
    - c. Has a pumping system that provides adequate water to supply fire suppression for the standpipe;
    - d. Has a pump with a separate electrical supply to provide fire suppression; and
    - e. Has water pump fixtures capable of connecting to standardized fire suppression hoses.
  2. That the home will have either an electrical supply from an electrical company or a plan for the provision of electricity through other means (i.e. generator, solar, or other source);
  3. That the home will have telephone service from a land line telephone company or demonstrated telephone service from another form of telephone service;
  4. They type of proposed septic or sewer system for the home and the necessary tests to show that the septic or sewer system is suitable for the type of soil and drainage of the parcel in compliance with County, State, and Federal guidelines and requirements for septic systems;
  5. Certification by the Road Superintendent that the road was constructed in accordance with the requirements of this chapter;
  6. A Road Maintenance Acknowledgement, which will be filed as a Notice on the property, that states that the owner of the property is required to maintain roads that provided access to the parcel from the nearest county road or state highway in accordance with the standards for an access road in Pershing County (as to the base, compaction, access permits, and other requirements.)

**Section 17.503.15 Construction Plan.** If required as set forth in Section 17.503.05, the applicant shall submit a Construction Plan with the application which shall provide road construction plans and specifications that have been prepared by a professional engineer, registered in the State of Nevada. Construction Plans together with plan check fees shall be submitted to the Planning and Building Department for review and processing and County approvals.

- A. Contents: Complete documents and specifications for all road/street providing ingress and egress from the parcel and the home to the nearest county road or state highway (herein referred to the "Road Improvement"), including access permits.
- B. Design Standards: The Road Improvement required pursuant to this section shall be constructed in accordance with the design standards and plan requirements of this Code, the standards and specifications of the County, and, where applicable, the requirements and authorization of the appropriate state agency, utility company, or local franchisee.
- C. Construction Drawing Requirements: The Construction Plans shall be signed by a professional engineer. Five copies of the Construction Plans shall be submitted for review. The Construction Plans shall be at any scale from 1 inch per 10 feet through 1 inch per 100 feet, so long as the scale is an increment of 10 feet and is sufficiently clear in reflecting details of the proposed construction. Construction Plans shall be prepared on 24 x 36 inch sheets. The Plans shall included the following information, shown on separate sheets:
1. Cover Sheet: Including owner, developer, engineer (with addresses and phone numbers), a vicinity map, all standard notes, signature block for utility and County approvals, and an index of plan sheets.
  2. Roads: Road Improvement construction plans, profiles, and detail sheets.
  3. Storm Water Management Plan: Plan and profile of proposed storm water disposal for the Road Improvement.
  4. Grading: Proposed grading cross sections and final contours in critical drainage areas.
  5. Development Schedule: A general schedule of the timing and sequence of construction for the Road Improvement.
  6. Roadway Construction Detail Sheets: All construction details pertaining to the Road Improvement (surfacing and base details, curbing or should details, sidewalk, unpaved areas, lighting, etc.) shall be shown on typical section, in plan and profile. Specific details shall include, but not be limited to (and reference to appropriate County improvement standards):
    - a. Street Installation, widening, resurfacing improvements dimensioned and developed in accordance with County improvement standards;
    - b. Street widening and resurfacing improvements in the right-of-way as measured from the center line;
    - c. Mathematical profile grade and elevations at 25 foot intervals on vertical curves and 50 foot intervals on tangent sections for all roadway construction; and

- d. Resurfacing Profile Grade elevations on existing center line and edges of pavement at 25-foot intervals and breaks in grade (i.e. irregularities in pavement.)

D. Review Procedures: Prior to approving a Construction Plan, the applicant shall submit the complete document set to all applicable local reviewing agencies and public utility companies that will service the property for approval. Certificates of approval shall be submitted to the Planning and Building Department. The applicant shall pay for the costs of review by the County Engineer if the Planning Director determines that a review by the County Engineer is necessary. If the County Engineer is consulted, the County Engineer may seek consultation in the review of the Construction Plan and the cost associated with the consultation shall be paid by the applicant prior to the issuance of a building permit.

1. Inspection and Acceptance of Improvements: Prior to the issuance of final certificate of occupancy, all improvements required by this Code shall be inspected by a designee of the County as provided below, except for improvements made under the jurisdiction of other public agencies, in which case engineers or inspectors of such agency will make the necessary inspections. Where inspections are made by other agencies, the applicant shall provide the County with written reports of each final inspection.
2. Compliance with Standards: The applicant and/or a bonded construction contractor shall bear full and final responsibility for the installation and construction of all required improvements according to the provisions of this Code and the standards and specifications of other public agencies.
3. Costs of Inspection: The applicant shall provide the County with an executed contract providing for the inspection and testing services by Nevada Registered Civil Engineer. A final report must be provided by the Engineer named in the contract, which include, but is not limited to, the following: daily logs; test results; and other necessary inspections. Prior to the issuance of a final certificate of occupancy, the County Road Superintendent shall inspect the roads to determine if the roads are appropriate at both a cost for travel which will be based upon a cost per mile as set forth by the County for reimbursement for travel (calculated by determining the mileage to the location from the Pershing County Road Department in Lovelock, Nevada) and an hourly rate based upon the cost to the County for employing the Road Superintendent (which includes salary costs, benefits costs, PERS costs, FICA costs, etc.) The County Building inspector shall provide building inspections for electricity, plumbing, fire suppression, phone service, construction of the home, and a certification of completeness and occupation; and the homeowner shall bear the normal costs associated with building inspections.
4. Acceptance: Approval by the appointed Engineer of the construction improvements shall not constitute acceptance by the County of improvement for dedication purposes.
5. Site Cleanup: The applicant shall be responsible for removal of all equipment, material, and general construction debris from the property and from any lot, street, public way, or property therein or adjacent thereto. Dumping of such

debris onto adjacent property or onto other land in the County is prohibited, unless it is a licensed landfill.

*[Chapter 17.503 added by Ord. 230, passed 10/16/06, provisions eff. 11/03/06]*

CHAPTER 504

(This chapter reserved for future ordinance.)



## CHAPTER 506

### PARKING STANDARDS

#### SECTIONS:

17.506.00	Purpose
17.506.05	Applicability
17.506.10	Minimum Requirements
17.506.15	Mixed Use Development
17.506.20	Off-site/Remote Parking
17.506.25	Special Parking Provisions
17.506.30	Facility Design Standards

**Section 17.506.00 Purpose.** The purpose of Chapter 506, Parking Standards, is to regulate parking and loading in order to lessen traffic congestion and contribute to public safety by providing sufficient on-site areas for maneuvering and parking of motor vehicles.

**Section 17.506.05 Applicability.** The provisions of this chapter shall apply to any new building constructed, reconstructed, altered, enlarged or moved. Parking shall be located entirely on the same property as the main use with no portion other than the necessary drives extending into any street right-of-way or other public way.

**Section 17.506.10 Minimum Requirements.** Off-street spaces shall be provided in the quantities set forth in Table 17.506.10-1.

- A. **Location.** Parking shall be provided on the same lot with the use except as permitted by this Chapter.
- B. **Calculation of Space.** Any fraction of a parking space calculated as required under this Section shall be counted as a full parking space.
- C. **Cumulative Requirements.** For sites with more than one given use type, or for adjacent sites served by a common parking facility, the parking requirement shall be the total number of spaces required for each site or use type, except as otherwise provided.
- D. **Additional Parking Required.** A change of occupancy or manner of use that results in additional parking requirements shall be provided for on-site.
- E. **Existing Parking Facilities Maintained.** Facilities being used for off-street parking on the effective date of this code shall not be reduced in capacity to less than the number of spaces prescribed, or altered in design or function to less than the minimum standards prescribed herein.
- F. **Standards for Unlisted Uses.** The Director of Planning and Building shall determine the number of parking spaces required for uses not referenced in Table 17.506.10-1 by applying the standard for the most similar use or uses as listed. If there is no similar use, the Director of Planning and Building shall make a determination based on available parking studies or standards.

G. Prohibited Parking. Head-in parking from any public right-of-way shall not be permitted.

**Table 17.506.10-1 Off-Street Parking Requirements**

USE TYPE	PARKING SPACES REQUIRED
<b>SINGLE-FAMILY DWELLING</b>	2 per dwelling unit (DU)
Two-Family Dwelling	2 per DU
Multiple-Family Dwelling	1.5 per efficiency or 1 bedroom (BR) per DU; 1.75 per 2 or 3 BRs per DU; 2 per 4 or more BRs per DU
Dormitory, Lodging House, Fraternity/Sorority House	0.5 per BR
Nursing/Convalescent Home, Congregate Care Facility	1 per 3 beds plus 1 space per 200 SF of office space
Retail, Commercial	1 per 200 SF for less than or equal to 50,000 SF GLA 1 per 250 SF for greater than 50,000 SF and less than or equal to 100,000 SF GLA 1 per 300 SF for greater than 100,000 SF GLA
Restaurant	1 per 100 SF GLA
Tavern/Cocktail Lounge	1 per 50 SF GLA
Industrial/Warehouse	1 per 1,000 SF GLA plus 1 space per 200 SF GLA of office space
Public Assembly	1 per 3 persons allowed under maximum occupancy
Recreational Uses Amusement Center Driving Range Golf Course	1 per 200 SF GLA 1 per tee 4 per Green

**Section 17.506.15 Mixed Use Development.** The Director may authorize a reduction in the total parking requirement for separate uses located on the same site or adjoining sites which are served by a common parking facility. Reductions pursuant to this section shall not be granted for facilities using off-site or remote parking. In determining whether to approve an adjustment for mixed-use developments, the Director shall consider all relevant factors, including:

- A. The characteristics of each use and the differences in projected peak parking demand, including days and hours of operation;
- B. The potential reduction in vehicle movements afforded by multi-purpose use of the parking facility by employees, customers or residents of the uses served;
- C. The potential improvements in parking facility design, circulation and access afforded by a joint parking facility.

**Section 17.506.20 Off-Site/Remote Parking.** The Director of Planning and Building may approve off-site parking when:

- A. Location in land use district. Both the primary use and the off-site parking are located in a land use district for the primary use served by the off-site parking;
- B. Access to Use. The off-site parking is located within 300 feet of the primary use it serves;
- C. Documentation of Parking Availability. The applicant has provided written documentation of the continued availability of the proposed off-street parking facilities; and
- D. Parking for Persons with Disabilities. Adequate parking is provided on-site for the handicapped.

**Section 17.506.25 Special Parking Provisions.** In any parking facility serving the public, parking for the handicapped shall be provided as set forth in this section.

- A. Handicapped parking spaces shall be provided in accordance with Table 17.506.25-1. One of every eight required handicapped spaces shall be a van accessible space (a minimum of one van accessible space per parking area.)
- B. Handicapped spaces shall be located as near as possible to accessible building site entrances and shall be located so as to provide convenient access to curb ramps.
- C. Handicapped spaces shall be provided with an adjacent access aisle. Access aisles shall be a minimum of five feet in width. Van access aisles shall be a minimum of eight feet in width. Access aisles shall be located on the passenger side of each space unless it is located between and is shared by two designated spaces.
- D. All handicapped accessible spaces shall be clearly marked.
- E. Parking spaces for persons with disabilities shall be provided in accordance with all American with Disabilities Act Accessibility Guidelines (ADAAG) for Buildings and Facilities.

**Table 17.506.25-1 Parking for Persons with Disabilities**

Parking Capacity	Spaces Required for Persons with Disabilities*
Up to 100	4
101-200	6
201 or more	9 plus 1 handicapped space per 100 spaces over 500

**Section 17.506.30 Facility Design Standards.** The minimum design standards for parking areas are provided in accordance with Table 17.506.30-1. The Planning and Building Director may require modifications to parking lot design to ensure the safety of pedestrians, bicyclists and motorists:

- A. Timing of Parking. All parking areas and drives shall be ready for use prior to occupancy of a building or site, and shall be approved by the Director prior to the issuance of a certificate of occupancy. The Director may grant special permission to delay this requirement due to weather conditions not being satisfactory for proper installation of surfacing materials.

- B. Location. All off-street parking shall be located outside of required landscape areas.
- C. Design Standards. Parking facilities constructed or substantially reconstructed subsequent to the effective date of these regulations, whether required or not, shall conform to these design standards.
- D. Maintenance of Required Spaces. All required parking facilities shall be maintained for the duration of the use requiring such facilities. Required parking facilities shall be used exclusively for the temporary parking of passenger automobiles, motor vehicles or light trucks not exceeding one ton in capacity, and shall not be used for the sale, display or storage of merchandise, or for the storage or repair of vehicles or equipment.
- E. Accessibility. Each standard parking space shall consist of an independently accessible rectangular or trapezoidal area.
- F. Vertical Clearance. Each parking space shall have a vertical clearance of at least 7 ½ feet.
- G. Circulation. Each parking and loading area shall have adequate drives, aisles, and turning and maneuvering areas for access and usability, and shall at all times have access to a street or alley and provide sidewalk access to buildings.

**Table 17.506.30-1 Parking Facility Design Standards**

Parking Angle (degrees)	Maneuvering Land Width (feet)		Parking Space Dimensions (feet)		Total Width of 2 Tiers of Spaces & Maneuvering Lane (feet)	
	One Way	Two Way	Width	Length	One Way	Two Way
30-50	12	20	9	18	48	56
51-75	13	22	9	18	49	58
76-90	N/A	24	9	18	N/A	60

- H. Parking Area Paving and Drainage. All parking and loading facilities shall be designed, graded and provided with permanent storm drainage facilities that prevent standing water on any parking area, and do not increase the flow of water onto adjacent properties, streets or alleys. All parking areas projected to generate 100 or more average daily trips shall provide paved parking areas and driveways.
- I. Parking Area Lighting. If provided, lighting used to illuminate parking areas shall be arranged, located or screened so that light sources are not directly visible from abutting residential parcels or any street right of way.
- J. Landscaping and Screening. Parking lot landscaping and buffering shall comply with Chapter 17.508.

## CHAPTER 508

### LANDSCAPING STANDARDS

#### SECTIONS:

17.508.00	Purpose
17.508.05	Applicability
17.508.10	General Provisions
17.508.15	Water Conservation
17.508.20	Public Safety
17.508.25	Requirements for Residential Land Uses
17.508.30	Requirements for Non-residential Land Uses
17.508.35	Landscaping Standards
17.508.40	Irrigation Standards
17.508.45	Screening Standards
17.508.50	Dust, Erosion and Storm Water Control
17.508.55	Maintenance
17.508.60	Defensible Space
17.508.65	Landscape and Irrigation Plans
17.508.70	Inspection and Bonding of Improvements

**Section 17.508.00 Purpose.** The purpose of Chapter 508, Landscaping Standards, is to provide the minimum standards and procedures for the installation and maintenance of landscaping. The intent of these regulations is to:

- A. Protect public health safety and welfare;
- B. Increase compatibility between different land use types and provide buffering and screening when necessary;
- C. Reduce environmental disturbances such as noise, dust, glare and erosion;
- D. Conserve water resources through proper landscaping and irrigation planning, design and management, and by encouraging the use of established water conservation principles and practices;
- E. Preserve permeable land areas essential to storm water management and groundwater recharge;
- F. Enhance the aesthetic appearance and economic viability of the County, increase property values, and enhance the quality of life for residents and visitors;
- G. Preserve existing trees and other significant vegetation which may be best suited for the local climate.

**Section 17.508.05 Applicability.**

- A. The provisions of this chapter shall apply to all new development and the expansion of existing development which requires permitting or review by the County, except that which is specifically exempted by the provisions of this chapter.
- B. The provisions of this chapter shall only apply to the developed area of a subject property. The developed area is that area which has been, or is proposed to be, disturbed by development activity, including but not limited to: grading, excavation, construction of buildings structures, utilities and infrastructure, or otherwise. Areas which will remain completely undisturbed are exempt.
- C. Waiver of Requirements. The Planning Commission or Board of County Commissioners may waive the provisions of this chapter, or portions thereof, based upon specific circumstances of the project site and development proposal. Before waiving any requirement(s), the Planning Commission or Board of County Commissioners shall find that such waiver will not cause any detriment to the public health, safety and welfare.

**Section 17.508.10 General Provisions.**

- A. All proposed landscaping, screening and irrigation system improvements required by this chapter shall be reviewed and approved by the Planning Director to ensure that such improvements will be constructed to County standards and comply with the Development Code and other applicable regulations. Plans shall be prepared, submitted and reviewed in conformance with Sections 17.508.65 for all required improvements.
- B. The developer shall be responsible for the payment of all fees associated with the processing and review of landscape and irrigation plans and the inspection of required improvements.

**Section 17.508.15 Water Conservation.** To promote the conservation of water through resource-efficient landscaping, the following principles and practices are encouraged:

- A. The preservation of existing vegetation;
- B. The reestablishment of native vegetation;
- C. Use of plant species well suited for arid climates;
- D. Limited and/or practical turf areas;
- E. Grouping of plants with similar water requirements;
- F. Selective use of shade trees to reduce transpiration rates of vegetation located under the canopy;
- G. Use of Xeriscape and hardscape;
- H. Use of mulches;
- I. Use of soil amendments;
- J. Use of efficient irrigation systems specifically designed to meet plant needs;

- K. Installation of permeable hard surfaces to decrease run-off and to increase groundwater recharge and re-use;
- L. Use of water harvesting techniques;
- M. Appropriate and timely maintenance.

**Section 17.508.20 Public Safety.** Landscaping shall comply with the following safety requirements:

- A. Landscaping elements shall not create a hazard to public health, safety and welfare;
- B. Thorny and/or poisonous vegetation is prohibited along public sidewalks and bicycle paths, and on properties used primarily by children, such as schools, day care centers and nurseries.
- C. The height, width and anticipated future growth of vegetation shall not interfere with or impede the use of a right-of-way or access easement and shall not obstruct any line of sight necessary for such use.

**Section 17.508.25 Requirements for Residential Land Uses.** Residential land uses shall comply with the requirements of this section.

- A. Applicability. Single-family dwellings and associated uses, such as accessory dwellings and structures, are exempt from the requirements of this section. All other residential land use types, including but not limited to, duplex, multi-family and group home, shall comply with the requirements of this section.

Residential subdivisions and manufactured home parks are only required to comply with subsection C.

B. General Requirements.

1. A minimum of 20 percent of the total developed land area shall be landscaped.
2. Turf shall be used to provide a minimum of 50 percent of the required landscaping area. It shall be installed in appropriate areas and configuration to facilitate recreational uses;
3. All required setbacks of the subject property which abut a street shall be landscaped.
4. The Planning Commission or Board of County Commissioners may require the installation of additional landscaping and/or screening when deemed reasonably necessary to accomplish the intent of this chapter as established by Section 17.508.00.

- C. Residential Subdivisions and Manufactured Home Parks. New residential subdivisions and manufactured home parks shall be landscaped along any perimeters of the subject property which abut a street. Landscaping shall be located within the required setbacks.

**Section 17.508.30 Requirements for Non-residential Land Uses.** Non-residential land uses shall comply with the requirements of this section.

- A. Except as specifically required in this section, landscaping and screening are not required for non-residential land uses, including but not limited to, civic, commercial, industrial and agricultural land uses.
- B. The Planning Commission or Board of County Commissioners may require the installation of additional landscaping and/or screening for non-residential land uses, when deemed reasonably necessary, to accomplish the intent of this chapter as established by Section 17.508.00.
- C. Parking and Loading Areas. Parking and loading areas shall be screened with a solid decorative wall, fence or other permitted screen along portions of the perimeter of the subject property which abut a residential land use. The screen shall be six to seven feet in height.
- D. Commercial Campgrounds/Recreational Vehicle Parks. Commercial Campgrounds and Recreational Vehicle Parks shall be screened with a solid decorative wall, fence or other permitted screen along portions of the perimeter of the subject property which abut a street or residential land use. The screen shall be six to seven feet in height.
- E. Wrecking/Disposal Operations and Salvage/Junk Yards. Wrecking/Disposal Operations and Salvage/Junk Yards shall be screened by a solid wall or fence along the entire perimeter of the subject property. The wall or fence shall be at least eight feet in height.

**Section 17.508.35 Landscaping Standards.** All required landscaping shall comply with the standards established by this section.

- A. All landscape areas shall be completely covered by one or more of the following: trees, shrubs, hedges, living and non-living groundcover and other similar landscaping materials.
- B. The County encourages utilizing a mixture of landscaping materials, both living and non-living materials, as well as selecting tree and plant species that are well suited for the local climate and which have similar water use requirements.
- C. Groundcover. Ground cover may be provided by both living and non-living groundcover. Living groundcover may include living plants such as turf, shrubs, vines, meadow grasses, flowers or other similar vegetation. Non-living groundcover may include materials such as wood chips, bark, decorative rock, mulch, stone or other similar materials.
- D. Any existing vegetation which is classified as endangered or is otherwise protected by any local, State and Federal regulations shall be preserved and protected. This requirement may be waived as permitted by applicable regulations.
- E. Trees, plants and other landscaping components shall not adversely affect rights-of-ways, easements, utilities and other infrastructure.

- F. A root control barrier shall be installed for any tree planted within five feet of a publicly maintained street, curbing, sidewalk or other paved area.

**Section 17.508.40 Irrigation Standards.** Required irrigation systems shall comply with the requirements of this section.

- A. A County-approved backflow prevention device is required to be installed on all irrigation systems. Backflow prevention devices shall be installed on the main line of the system, before the control valves.

**Section 17.508.45 Screening Standards.** Screening shall conform to the following:

- A. Permitted Types. Screening may be provided through one of the following types, or a combination thereof:

1. Decorative walls constructed of block, brick, rock or other masonry material of at least eight inches in width.
2. Chain-link fencing with inserts of wood, metal or other material to produce an opaque condition;
3. Decorative, opaque fencing constructed of wood or other building material;
4. Dense plants, such as hedges. Plant screening may only be used when specifically permitted in this chapter, and when used, shall comply with the requirements of subsection B.

- B. Plant Screening Standards. Plants used for screens shall:

1. Be of a type which will provide a year-round barrier at the required height;
2. Provide 100 percent opacity within three years of planting, and be planted at a spacing necessary to provide such opacity;
3. Be supplemented or replaced with other dense landscaping or another type of screening, if it fails to provide the required opaqueness any time after the initial 3-year period.

- C. Location and Height.

1. Screening shall be located to maximize the benefit of the screen.
2. Height of a screen shall be measured from finished grade.

**Section 17.508.50 Dust, Erosion and Storm Water Control.** Dust, erosion, and storm water control shall be provided to landscaped areas and new development as required by this section.

- A. Land clearing shall be minimized as much as possible.

- B. To minimize erosion during construction, straw or other appropriate material shall be applied to slopes susceptible to storm water runoff during construction and on graded sites which are vacant prior to construction.
- C. The Planning Director, Planning Commission or Board of County Commissioners may require temporary and/or permanent dust control measures during and after construction of new development, if deemed reasonably necessary.
- D. Runoff from landscape areas shall be detained or filtered by earth berms, planting strips, catch basins or other methods to prevent sedimentation from obstructing natural and man-made waterways or drainage infrastructure and to prevent deposition on paved areas;
- E. No earth, organic or construction material shall be deposited in or placed where it may be directly carried into any natural and man-made waterways or drainage infrastructure.

**Section 17.508.55 Maintenance.** All landscaping, screening, irrigation systems and related components shall be maintained as follows:

- A. All landscaping, screening, irrigation systems and related components shall be maintained to comply with the requirements of this chapter at all times. Maintenance shall be completed by the applicant and/or property owner and subsequent property owners as applicable;
- B. Vegetation and associated planting areas shall be watered, pruned, fertilized, cultivated, cleared of weeds, litter and debris and otherwise maintained as necessary to sustain healthy, disease and pest-free conditions and a pleasing aesthetic appearance. Vegetation which is no longer living or critically damaged shall be replaced.

**Section 17.508.60 Defensible Space.** The county encourages the creation and maintenance of defensible space around homes and other structures to aid in the prevention of wildfire damage. “Defensible space” refers to the area surrounding a house where vegetation and other flammable materials has been managed to reduce the risk of wildfire and to allow firefighters to safely defend the house.

Defensible space can be created by performing the following steps:

Step 1: Determine the size of an effective defensible space. The size of the defensible space zone is based upon the steepness of the slope and the types of vegetation surrounding a home. A defensible space zone extending at least 100 feet outward around the home is recommended. The size of the zone may need to be increased based upon specific site conditions. See below for additional information on determining the size of an appropriate defensible space zone.

Step 2: Remove dead vegetation and other combustible materials. The following should be completed to remove fire fuel from the defensible space zone:

- Dead and dying trees, limbs and shrubs should be removed.
- Dead leaves, needles, bark, cones, branches, twigs, grass, weeds and flowers and other debris should be removed.

- Roofs and gutters should be kept clear of flammable debris.
- Clear ALL flammable vegetation from within 10 feet of propane tanks.
- Other combustible material, such as stacked firewood should be removed from the defensible space zone.
- Trees or limbs which overhang the home or are within 15 feet of the home or chimney outlet should be removed or pruned.
- Trees or limbs within 15 feet of overhead utility lines should be removed by contacting the telephone or power company for removal.

Step 3: Create horizontal separation between shrubs and trees. Horizontal separation between shrubs and trees helps to prevent a wildfire from spreading. Dense stands of trees and shrubs within the defensible space zone create a significant risk and should be thinned to create separation. See below for additional information on creating horizontal separation.

Step 4: Create vertical separation between tree branches and lower-growing plants. Vertical separation between tree branches and lower-growing plants helps to prevent to a wildfire from burning into tree canopies. Trim lower tree branches, shorten the height of shrubs and remover lower-growing plants to create vertical separation between different types of vegetation. See below for additional information on creating vertical separation.

Step 5: Create a Lean, Clean, and Green Area extending at least 30 feet outward around the home. The purpose of the Lean, Clean and Green Area is to eliminate easily combustible fuels near the home and, in the event that a fire does start near the home, to keep the fire intensity low to prevent the home from catching fire. This area is typically the landscaped area around the home. In the Lean, Clean and Green Area:

- Remove most or all flammable wildland vegetation and other easily ignitable materials.
- Select less flammable plants for landscaping. When selecting plants, choose those which are: shorter rather than taller, green and herbaceous rather than woody, and deciduous rather than evergreen.
- Utilize hard surfaces, such as concrete, asphalt and brick, and rock, wood and bark mulches.
- Create a Noncombustible Area within three feet of the home where most or all combustible materials have been removed.

Step 6: Maintain the Defensible Space Zone. Perform ongoing maintenance of the defensible space zone by utilizing the first five steps before and during the fire season each year.

Additional Information. The information provided in this section does not represent a complete guide to creating adequate defensible space. More detailed information should be obtained. Additional information can be obtained from various public programs and agencies, including

the Living with Fire Program, the Nevada Fire Safe Council, the Nevada Division of Forestry, the United States Forest Service, the Bureau of Land Management and others. Residents may contact the Planning Department Office for contact information or assistance obtaining additional information.

Sources: The information in this section was obtained from the Living with Fire Program and the California Department of Forestry and Fire Protection.

**Section 17.508.65 Landscape and Irrigation Plans.** Landscape and irrigation plans shall be prepared in conformance with this section.

A. General Requirements.

1. Plans shall be prepared by a landscape architect registered in the State of Nevada or other person permitted to prepare landscape plans pursuant to NRS chapter 623A.
2. Plans shall comply with all applicable local, State and Federal regulations.
3. Plans shall be reviewed and approved by the Planning Director prior to approval of the development proposal or issuance of a building permit. The Planning Director may require review and approval of the plans by other parties, such as the County Building Department or the County Engineer, if deemed necessary.
4. Plans shall include all necessary information for the design, installation and construction of landscaping and irrigation systems associated with a development project. The Planning Director may require additional information to be included, as deemed necessary, for review of the plans.
5. The Planning Director may allow different types of plans to be combined on the same sheet(s) so long as all information necessary for review of the development project is included and is shown in a clear and distinguishable manner.
6. Information shown on plan sheets shall be clearly and neatly drawn. Information shall be drawn to scale utilizing a commonly used scale (i.e. 1 inch = 20 feet or ¼ inch = 1 foot).
7. All plan sheets shall be drawn in the same scale.

B. Form. Landscape and irrigation plans shall be prepared on durable paper with permanent black ink. Each sheet shall be 24 inches by 36 inches in size. A marginal line shall be drawn completely around each sheet, leaving an entirely blank margin of one inch at the top, bottom and right edges, and of two inches at the left edge along the 24-inch dimension.

C. Information Required on Each Sheet. The following information, at a minimum, shall be shown on each plan sheet:

1. North arrow
2. Scale (numeric and bar)

3. Title block, which contains: project name, developer, property owner(s), and type of design shown on the sheet
  4. Name and contact information of firm responsible for preparing the plans
  5. Name, signature, and stamp of the Nevada registered landscape architect (or other person permitted to prepare landscape plans pursuant to NRS 623A) responsible for preparing the plans
  6. Date of plans
  7. Sheet number and reference to total number of sheets
  8. Information which indicates the relationship of the sheet to adjoining sheets.
  9. A legend providing definitions and descriptions of symbols used, as necessary.
  10. Signature block for County approval, on the first plan sheet only.
  11. Revision block for revised sheets, when applicable, which contains: revision number, date of revision, initials of design professional, description of plan changes, and signature block for county approval.
- D. Site Plan. A site plan shall be included which provides the following information at a minimum:
1. Existing and proposed property boundaries, rights-of-way and easements;
  2. Topographic information showing final site grading and drainage;
  3. Existing and proposed buildings, structures and other significant site improvements;
  4. Existing natural features which will impact the project design;
  5. Walls, fences and other types of screening, with dimensions and details;
  6. Buildings, structures and other significant site improvements on abutting properties within 30 feet of the property boundaries;
  7. Overhead, ground-mounted and underground utilities, equipment and infrastructure;
  8. Impervious surface areas, including but not limited to: streets, driveways, sidewalks, parking areas and building footprints.
- E. Planting Plan. A planting plan shall be included which provides the following information at a minimum:

1. Location, common and botanical names, planting size and mature size, and spacing of proposed plantings;
  2. Location, common and botanical names and area of proposed turf areas;
  3. Indication of plantings to be utilized for slope protection and erosion control;
  4. Location, size and common and botanical names of existing vegetation that is proposed to remain;
  5. Existing vegetation and natural features on abutting properties within 30 feet of the property boundaries;
  6. The location and amount of impervious and turf areas.
  6. Plant list in tabular format which provides the following information for all proposed trees and plants:
    - a. Common and botanical name;
    - b. A key number or identifying symbol assigned to each plant type;
    - c. Quantity to be used;
    - d. Planting size and mature size;
    - e. Spacing.
  7. The quantity of trees and other significant plants to be preserved;
  8. Details for planting, staking, soil amendments or other additional information as necessary.
- F. Irrigation Plan. If applicable, an irrigation plan shall be included which complies with the following requirements:
1. Irrigation plans shall be in compliance with the most current plumbing code adopted by the County.
  2. Information must be provided for both permanent and temporary irrigation systems.
  3. Irrigation plans shall provide the following information at a minimum:
    - a. All irrigation system components, including but not limited to: pipes, valves, sprinkler heads, emitters/bubblers, controllers, backflow preventors, hydrants, meters.
    - b. The location, type, size, dimensions and specifications shall be indicated for these components as applicable.

- c. The location, size and specifications of the water source(s) and the location of the point of connection and the water pressure available.
- d. The maximum demand of the system in gallons per hour (gph) or gallons per minute (gpm).

H. Submittal Requirements. The following items shall be submitted to the Planning Department to begin review of landscape and irrigation plans:

- 1. Copies of the plans and accompanying materials, of the size and number required by the Planning Director.
- 2. Performance bond estimate prepared by the design professional responsible for preparation of the plans.
- 3. Payment of all required fees associated with the processing and review of the plans, as established by the county and other entities that shall review the plans.
- 4. Any additional information or materials as deemed necessary by the Planning Director for review of the plans.

Review of landscape and irrigation plans shall not begin until the submitted materials are deemed complete by the Planning Director.

I. Review Procedures. Landscape and irrigation plans shall be reviewed in accordance with the following:

- 1. Review for Completeness. Upon receipt of plans and accompanying materials, the Planning Director shall have 15 working days to review the submitted materials and accept or reject the plans as complete. If the plans are found to be incomplete they will be returned to the applicant and/or the applicant will be notified of any additional information needed.
- 2. Review by County. Following acceptance of a complete set of plans, the plans shall be reviewed by the Planning Department. The plans shall be reviewed to check for errors, ensure accuracy and ensure compliance with the Development Code and other applicable regulations. If it is determined that there are deficiencies with the plans, corrections or changes may be required. The design professional responsible for the preparation of the plans and/or the applicant shall be notified of any required corrections or changes. The plans shall be revised to reflect any corrections or changes required. The plans shall be revised and re-reviewed as necessary until approved by the Planning Director.

The Planning Director may cause the plans to be reviewed by other entities, such as the County Building Department or County Engineer, as deemed necessary.

3. Final Review and Approval.

- a. Upon making all corrections and changes as required by the County, the developer shall submit a revised copy of the improvement plans in their

final form to the Planning Department for final review and approval. The plan set shall be signed and stamped by the design professional responsible for their preparation.

- b. The revised plans shall be reviewed by the Planning Director to ensure that all required corrections and changes have been made.
- c. If it is determined that there are deficiencies with the plans, the plans shall be returned to the developer or design profession responsible for their preparation with a description of any corrections or changes required. Upon making the required corrections or changes, the plans may be resubmitted.
- d. Upon determining that the plans are correct, the Planning Director shall approve the plans by signature.
- e. At least one copy of the approved plans with approval signature shall be returned to the developer.

**Section 17.508.70 Inspection and Bonding of Improvements.** To ensure proper installation and completion of required landscaping, screening or irrigation improvements, the County may require inspection and bonding of such improvements in accordance with this section.

- A. Improvements which are required as part a building permit shall be completed prior to issuance of a certificate of occupancy, unless bonding has been submitted to the County pursuant to subsection C.
- B. Improvements which are required as part of a subdivision, parcel map, special use permit or other discretionary approval shall be bonded pursuant to subsection C. This bond may submitted along with other performance bonding which may be required for other public improvements.
- C. Performance Bond. If required, a developer shall provide a performance bond to the County to ensure that required improvements are completed and constructed to county standards. Performance bonds shall comply with the provisions of this subsection.
  1. The performance bond shall be of an amount that is sufficient to ensure that all improvements are completed and constructed to county standards.
  2. The amount of the performance bond shall be determined by the Planning Director. In making his determination, the Planning Director shall consider the bond estimate submitted by the design professional with the landscape and irrigation plans.
  3. The performance bond shall be of an amount which equals at least 110 percent of the total cost to install all improvements, as shown on the approved plans.
  4. The performance bond shall be submitted in a form approved by the District Attorney.

5. The performance bond shall be held by the County during the construction of the required improvements. In the event that the developer fails to complete the improvements, the County may use the performance bond to fund the completion of such improvements. Upon completion, inspection, and acceptance of all improvements, the total amount or remaining balance of the performance bond shall be refunded to the developer.
- D. Inspections. The Planning Director or his designated representative may conduct inspections of any improvements required by this chapter to ensure that such improvements are in compliance with the Development Code and other applicable regulations. If it is determined that the improvements are not in compliance with applicable regulations the Planning Director may delay issuance of a certificate of occupancy or release of the performance bond until any issues are mitigated. If it is determined that the improvements are not in compliance, the developer shall be notified in writing of such deficiencies and of the action which must be taken to mitigate the deficiencies.



## CHAPTER 510

### FLOOD PROTECTION STANDARDS

#### SECTIONS:

17.510.00	Purpose
17.510.05	Applicability
17.510.10	Disclaimer of Liability
17.510.15	Permit Required
17.510.20	Letter of Map Amendment
17.510.25	Application Requirements for Permit
17.510.30	Owner/Developer Responsibilities
17.510.35	County Responsibilities
17.510.40	Flood Zone Requirements
17.510.45	Automatic Equalization of Hydrostatic Flood Forces
17.510.50	Prohibited Uses in Floodplains
17.510.55	Appeals

**Section 17.510.00 Purpose.** The purpose of Chapter 510, Flood Protection Standards, is to establish guidelines and requirements for the development of property within areas determined to be subject to flood damage.

**Section 17.510.05 Applicability.** The provisions of this Chapter shall apply to all unincorporated areas of Pershing County identified on the Flood Insurance Rate Maps (FIRM) or Floodway Maps as promulgated by the Federal Emergency Management Agency (FEMA) and determined to be within the Floodway and Floodway Fringe districts as defined in this Development Code.

**Section 17.510.10 Disclaimer of Liability.** The provisions of this sub-section do not imply or otherwise warrant that areas outside of the Floodway and Floodway Fringe districts or land uses permitted in the districts will be free from flooding or flood damage nor does this code create liability on the part of Pershing County, its officers or employees for any flood damages that may result from reliance on these floodplain management provisions, FEMA, or any regulations or administrative decision made hereunder.

**Section 17.510.15 Permit Required.** In all areas covered by these floodplain management provisions, no development or construction, including manufactured homes, located, extended, converted, structurally altered or otherwise shall be permitted except upon County issuance of a permit to develop granted under the procedures stated herein:

- A. No person, firm or corporation shall initiate any development, construction or substantial improvement or cause the same to be done within a designated floodplain without first obtaining a separate permit for development under these floodplain management provisions and in compliance with FEMA regulations.
- B. Application for a permit for development, construction or substantial improvement within a designated floodplain shall be made in accordance with these regulations.

- C. Development shall be limited in a floodplain and shall require engineered flood proofing of businesses and residences.
1. No development shall be allowed in a designated floodway district.
  2. The extent of 100-year flood inundation area shall be shown on the plat based on a drainage study conducted by registered engineer in the State of Nevada.

**Section 17.510.20 Letter of Map Amendment.** If an owner or developer of property believes the property to be inappropriately designated as being in a flood hazard area on the Flood Insurance Rate Maps, appeal may be made to the Federal Emergency Management Agency (FEMA).

- A. Appeals Procedure. All appeals must be submitted to the Planning Director for review. The Planning Director shall transmit the appeals to the Federal Emergency Management Agency for its consideration. Appeals must include the provisions set forth in this subsection and current FEMA regulations.
1. An actual stamped copy of the recorded plat of the property showing official recordation and proper citation, or a photocopy of the property's legal description as shown on the recorded deed (e.g. lot, block and plot number, etc.), together with a photocopy of the appropriate page of the County Assessor's parcel map.
  2. A copy of the Flood Insurance Rate Map (FIRM) with the location of the property identified.
  3. Certification by a Nevada registered engineer or surveyor stating:
    - a. The type of structure;
    - b. The elevation of the lowest adjacent grade (LAG) to the structure, which must be above the base flood elevation; and
    - c. The elevation of the top of the lowest floor.
  4. When appealing the elevation or boundaries of the base flood, a thorough technical hydrological study, certified by a Nevada registered engineer, of the contributing area which will substantiate the appeal shall be submitted.
  5. A signed copy of the statement asserting the accuracy of the information submitted on the form entitled "Request for Letter of Map Amendment".
- B. Letter of Map Amendment. If the appellant shows that the lowest adjacent grade (LAG) is higher in elevation than the base flood, that the elevation of the base flood is incorrect, or that the boundaries of the base flood are incorrect, the Federal Emergency Management Agency will provide the owner or developer with a Letter of Map Amendment (LOMA) which will exempt the property from the requirements of this article, and which may exempt the owner from the mandatory purchase of flood insurance.

**Section 17.510.25 Application Requirements for Permit.** All written applications for development or substantial improvement in the floodplain districts shall comply with the following requirements.

- A. Identify and describe the development to be covered by the permit.
- B. Describe the land on which the proposed development is to be done by lot, block, tract and house and street address, or similar description that will readily identify and definitely locate the proposed building or development.
- C. Indicate the use or occupancy for which the proposed development is intended.
- D. Be accompanied by plans and specifications for proposed construction.
- E. Be signed by the proposed permittee or his authorized agent who may be required to submit evidence to indicate such authority.
- F. Provide such other information as reasonably may be required by the Enforcement Officer or as required from the applicant under any part of this Code, including, but not limited, to evidence of compliance with FEMA regulations or guidelines for anchoring to prevent flotation and lateral movement, the use of flood resistant materials and utility equipment and construction methods which minimize flood damage.

**Section 17.510.30 Owner/Developer Responsibilities.** The responsibilities of the owner and developer are as set forth in this section.

- A. Information Requirements. The owner or developer shall submit the information contained within this subsection for review by the Planning Department.
  - 1. The elevation of the base flood at each site proposed for development within a flood hazard area;
  - 2. In Zones AE and AH, proposed elevation in relation to mean sea level of the top of the lowest floor of all structures, certified by a Nevada registered engineer or land surveyor; in Zone A and Zone AO, elevation of highest existing grade and proposed elevation of the top of the lowest floor of all structures, certified by a Nevada registered engineer or land surveyor;
  - 3. Proposed elevation in relation to mean sea level to which any structure will be flood proofed, certified by a Nevada registered engineer or land surveyor;
  - 4. Certification by a Nevada registered engineer that the flood proofing methods used for any nonresidential structure meet the flood proofing criteria in Section 17.510.40.
  - 5. Plans for any watercourse proposed to be altered or relocated, which must be designed by a Nevada registered engineer in conformance with the requirements of Pershing County. The flood carrying capacity of the unaltered watercourse shall be maintained in the altered watercourse; and

6. An operation and maintenance plan for any acceptable flood protection measures (e.g. levees, dams, dikes, reservoirs).
- B. Permit Requirement. The owner or developer shall obtain all applicable permits from the State of Nevada Division of State Lands, Nevada Division of Environmental Protection, and all other state and federal agencies. Permits must be obtained before altering or relocating any waterway under the jurisdiction of such agency. A copy of the permit will be provided to the Planning Department.
- C. Certification Requirements. The owner or developer is responsible for compliance with all provisions of this Chapter. Additionally, the owner or developer shall provide the Planning Department with “as-built” certification by a Nevada Registered engineer or land surveyor as to the elevation requirements or, if flood proofing is a permissible means of compliance, shall provide the Planning Department with “as-built” certification by Nevada registered engineer as to the flood proofing requirements for any applicable nonresidential structure. The certification shall be provided prior to issuance of a Certificate of Occupancy. Certification requirements by a Nevada registered engineer or land surveyor as required in this article shall be provided on a FEMA “Elevation Certificate” form. Signing of the Elevation Certification by a Nevada registered engineer or land surveyor constitutes their assurance that compliance with all requirements of this article have been met.

**Section 17.510.35 County Responsibilities.** The Planning Director is hereby designated as the Enforcement Officer for compliance under these floodplain management provisions and FEMA regulations. The duties of the Enforcement Officer shall include, but not be limited, to the following:

- A. Review of all applications for development permits to require that sites are reasonably safe from flooding and that the permit requirements of this Section have been satisfied as well as the other requirements of this code.
- B. Review of all permits for proposed developments to confirm that all necessary permits have been obtained from those Federal, State, or local governmental agencies from which prior approval is required.
- C. Notify adjacent communities and the State of Nevada Division of Water Resources prior to any alteration or relocation of a watercourse, and to provide evidence of such notification for FEMA.
- D. Require that maintenance be provided within the altered or relocated portion of the watercourse so that the flood-carrying capacity is not diminished.
- E. Require verification, recording and updating of records of the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, using reference marks (“RM”) established by FEMA.
- F. Require verification, recording and updating of records of the actual elevation (in relation to mean sea level) using reference marks (“RM”) established by FEMA, to which the new or substantially improved structures have been flood proofed and certified by a qualified individual as defined by FEMA when flood proofing as defined herein is utilized for a particular structure.

- G. Take any action necessary to assure compliance with FEMA regulation in the granting or denial of applications for any permits in the Floodway and Floodway Fringe districts.
- H. Require that all proposals for subdivision and other new development (including manufactured home subdivision or parks) are consistent with the need to minimize floor damage and that:
  - 1. All public utilities and facilities such as sewer, gas, electrical, and water systems are located , elevated and constructed to minimize or eliminate damage from floods; and
  - 2. Adequate drainage is provided for the purpose of reducing exposure to flood hazards; and
  - 3. Regulatory flood elevations utilizing FEMA “RM” are included in all proposals for all development.

**Section 17.510.40 Flood Zone Requirements.** In all flood hazard areas, elevation and flood proofing standards shall be in accordance with the provisions of this section. Elevations shall be certified by a Nevada registered engineer or land surveyor.

- A. Zones AE and AH Requirements. In Zones AE and AH, new construction and substantial improvement of any structure shall have the top of the lowest floor (including basement floor) elevated to one foot or more above the base flood elevation. Nonresidential structures must meet the standards in subsection F of this section.
- B. Zone AO Requirements. Zone AO, areas subject to alluvial fan flooding, have irregular flow paths that result in erosion of existing channels and the undermining of fill material. In every such zone, the provisions of this subsection shall be met.
  - 1. All structures must be securely anchored to minimize the impact of the flood and sediment damage.
  - 2. New construction and substantial improvement to any structure shall have the top of the lowest floor (including basement floor) elevated to at least one foot above the depth number specified on the Flood Insurance Rate Maps. Nonresidential structures must meet the standards in subsection F of this section.
  - 3. Use of all fill materials must be armored to protect the material from the velocity of the flood flow.
  - 4. All proposals for subdivision development must provide a mitigation plan that identifies the engineering methods used to:
    - a. Protect structures from erosion and scour caused by the velocity of the flood flow; and
    - b. Capture or transport flood and sediment flow through the subdivision to a point of deposition that will not create a health or safety hazard.

- C. Zone A Requirements. In an unnumbered Zone A, new construction and substantial improvement to any structure shall have the top of the lowest floor (including basement floor) elevated to either of the standards in this subsection. Non-residential structures must meet the standards of subsection F of this section.
1. A height of at least two feet above the highest adjacent undisturbed ground elevation if no base flood elevation has been determined; or
  2. A height of at least one foot above the base flood elevation as determined by an engineered hydrological study provided by the owner or developer, if deemed necessary by the Planning Department.
- D. Fabricated Housing Requirements. All fabricated homes, as specified in Chapter 17.308, Fabricated Housing, and additions to fabricated homes shall be constructed using methods and practices in conformance with subsection A, B or C of this section to minimize flood damage. Fabricated homes will be set on a securely anchored permanent foundation system to resist flotation, collapse and lateral movement. A registered engineer shall design the foundation.
- E. Recreational Vehicle Requirements. All recreational vehicles placed on sites within Zones, A, AH, AE and AO shall meet the following requirements:
1. Be on site for fewer than 180 days;
  2. Be fully licensed and ready for highway use; or
  3. Meet the standards in subsection D of this section.
- F. Nonresidential Requirements. Nonresidential construction shall either be elevated in conformance with subsection A, B, or C of this section, or together with attendant utility and sanitary facilities, be flood proofed to the same appropriate elevations as the top of the lowest floor elevations as indicated in subsection A, B, or C of this section. A Nevada registered engineer shall design all flood proofing measures. Examples of flood proofing include, but are not limited to:
1. Installation of watertight doors, bulkheads and shutters;
  2. Reinforcement of walls to resist water pressure;
  3. Use of paints, membranes or mortars to reduce seepage through walls;
  4. Addition of mass or weight to the structure to resist flotation; and
  5. Armor protection of all fill materials from scour and erosion.

**Section 17.510.45 Automatic Equalization of Hydrostatic Flood Forces.** For all new construction and substantial improvements, fully enclosed areas below the lowest floor that may be subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this

requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

- A. A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
- B. The bottom of all openings shall be no higher than one foot above grade.
- C. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwater.

**Section 17.510.50 Prohibited Uses in Floodplains.** The following uses shall not be permitted in a floodplain:

- A. Storage transfer or disposal of hazardous substances;
- B. Landfills;
- C. Livestock operations; and
- D. RV and manufactured home parks.

**Section 17.510.55 Appeals.** Appeals shall be as set forth in this section.

- A. Appeals for Variances. The Board of County Commissioners shall hear and decide appeals for variances from the requirements of this sub-section.
- B. Appeals for Errors. The Board of County Commissioners shall hear and decide appeals when it is alleged there is an error in any requirement, decision or determination.
- C. Appeals Considerations. The Board of County Commissioners shall consider all technical evaluations, all relevant factors, standards specified in other Sections of this code the provisions of this subsection:
  - 1. The danger that materials may be swept onto other lands to the injury of others;
  - 2. The danger to life and property due to flooding or erosion damage;
  - 3. The susceptibility of the proposed land use to flood damage and the effect of such damage on the individual owner;
  - 4. The importance of the services provided by the proposed land use to the community;
  - 5. The necessity to the proposed land use of a waterfront location, where applicable;
  - 6. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed land use;

7. The compatibility of the proposed land use with existing and anticipated development;
8. The relationship of the proposed land use to the comprehensive plan floodplain management program for that area;
9. The safety of access to the property in times of flood for ordinance and emergency vehicles;
10. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
11. The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

## CHAPTER 512

### STORM DRAINAGE STANDARDS

#### SECTIONS:

17.512.00	Purpose
17.512.05	Applicability
17.512.10	Relation to Other Standards
17.512.15	Authorization of Alternative Standards
17.512.20	General Requirements
17.512.25	Drainage Report Contents
17.512.30	Storm Drainage and Grading Plans
17.512.35	Design/Improvement Requirements
17.512.40	Easements
17.512.45	Maintenance and Repair

**Section 17.512.00 Purpose.** The purpose of Chapter 512, Storm Drainage Standards, is to promote the public health, safety and welfare by establishing guidelines and requirements for managing storm-water, protecting surface water from contamination and minimizing the loss of wildlife by preserving habitat and linkages between habitat areas.

**Section 17.512.05 Applicability.** The provisions of this chapter shall apply to public and private improvements for projects including, but not limited to, the following:

A. Projects that will require a Drainage Report:

1. Public Works projects;
2. Subdivisions;
3. Projects within, containing or abutting a floodplain, stream, lake or major drainage facility.

B. Projects that may require a Drainage Report:

1. Projects requiring a site plan review;
2. Projects requiring a special use permit;
3. Projects requiring a building permit;
4. Projects requiring a grading permit; and
5. Parcel maps.

**Section 17.512.10 Relation to Other Standards.** The standards set forth in this chapter make reference to and shall be used in conjunction with the latest edition of the Standard Specifications for Public Works Construction and the Standard Details for Public Works

*Construction (Orange Book)*, and the American Association of State Highway Transportation Officials' (AASHTO) guidelines.

**Section 17.512.15 Authorization of Alternative Standards.** In instances where unique situations necessitate the application of storm drainage and flood control designs and systems not provided in this chapter, the following provisions shall apply:

- A. Accepted Engineering Practices. Any storm drainage or flood control systems not allowed by these standards shall be designed in accordance with accepted engineering practices, the *Standard Details for Public Works Construction* and shall be subject to the approval of the County Engineer.
- B. Alternative Standards. The County Engineer may, at his or her discretion, authorize alternative standards not covered in this article, subject to the following:
  - 1. The alternative standards shall be equivalent to the design requirements as set forth in Sections 17.512.20, 17.512.30, and 17.512.35; and
  - 2. The alternative standards shall not be used for purposes of mere convenience or economy unless the alternative has equal or better function and/or quality.

**Section 17.512.20 General Requirements.** The requirements set forth in this section shall apply to all development subject to this chapter.

- A. Required Drainage Report. Unless waived in advance by the County Engineer or the Board of County Commissioners, all applicants shall submit for approval a Drainage Report signed and stamped by a Nevada Registered Civil Engineer in accordance with the provisions of this chapter and other applicable County regulations. The Drainage Report shall be based on the land uses allowed in the Master Plan, existing uses, or Storm Drainage Master Plans, whichever results in the greater runoff. Flows shall be based on the latest edition of NOAA Atlas rainfall data pertaining to Pershing County.
- B. 5-Year Runoff Improvements. When a Drainage Report indicates that the 5-year storm runoff from a proposed development cannot be handled by the existing storm drain system, the applicant shall be responsible for accomplishing one or more of the following, as determined by the County Engineer:
  - 1. Upgrade the existing off-site system to accommodate the runoff.
  - 2. Provide on-site detention and controls for acceptable discharge into the off-site system; or
  - 3. Provide an on-site retention/infiltration system verified by a Nevada Registered Civil Engineer as being adequate to accommodate the runoff from the proposed development. The operation and maintenance of such a system shall be the responsibility of the property owner or his or her successors and assigns.
- C. 100-Year Storm Runoff Improvements. The provisions of this section shall govern 100-year storm runoff improvements.

1. Discharge of the 100-year frequency storm drain waters into a major drainage facility or natural water course shall not contribute to increasing the existing peak flow of storm drainage runoff in the drainage facility or natural water course, except as provided in subsection C 2 of this section.
  2. The County Engineer may allow an increase in peak flow from the 100-year storm if a Nevada Registered Civil Engineer provides proof in the Drainage Report that any increase in peak flow will not adversely affect or cause damage to any property along the existing drainage facility or natural water course, now or in the future, based on the existing and proposed land uses or the uses allowed in the Master Plan, whichever is more restrictive.
- D. Natural Water Facilities. Development of property shall not adversely affect any natural drainage facility or natural water course, and shall be subject to the following provisions:
1. Natural facilities shall remain in as near a natural state as is practicable, with any modification proposed, including any erosion mitigating measures, addressed in the Drainage Report and drainage plans; and
  2. When the flows, velocity or side slope as determined by the Drainage Report indicates a hazard, the applicant shall provide fencing in accordance with County standards.
- E. On-Site Facilities. All drainage relating to the proposed development shall be collected on-site by facilities to accommodate, at a minimum, the storm drain waters for the 5-year return frequency storm flow, both entering the site and generated on-site. The drainage shall be piped in accordance with County standards to an existing adequate public storm drain system, major drainage facility, or natural watercourse. A major drainage facility is a channel or drainage way that has a drainage basin of 100 acres or more.
1. Where by reason of terrain or other circumstances the County Engineer or County Commission determines that piping storm drain waters is inappropriate or unnecessary, alternative methods may be approved in lieu of piping, including methods pursuant to the provisions set forth in Section 17.512.15 to facilitate transporting such waters; and
  2. Easements to access and accommodate storm waters flowing across private property shall be provided as set forth in Section 17.512.40.
- F. Detention. On-site detention requirements for the 5-year and 100-year frequency storm are as follows:
1. For a 5-year frequency storm, detention of the difference in runoff between the developed and undeveloped conditions shall be required if the capacity of the downstream storm drainage facilities will be exceeded; and
  2. For a 100-year frequency storm, detention of the difference in runoff between the developed and undeveloped conditions may be required if the capacity of the downstream storm drainage facilities will be exceeded.

- G. Wetlands. When the U.A. Army Corps of Engineers (C.O.E.) has determined there are wetlands on a proposed site, a wetlands delineation map approved by the C.O.E. must be submitted to the Department of Planning and Building. Any construction proposed in the wetland will require a 404 Permit from the C.O.E.
- H. Waters of the State of Nevada. Any work which requires fill to be placed within the "Waters of the State of Nevada" shall receive permission from the State Division of Environmental Protection prior to beginning construction. The Planning and Building Department shall receive a copy of this permission prior to issuance of any permit.
- I. Construction within a 100-Year Floodplain. Embankments or other structures shall not be placed within a 100-year floodplain, as determined by the most recent hydrologic study acceptable to the County Engineer or County Commissioner, of a major drainage facility without prior approval by the County Engineer. Where such approval is granted, embankments and structures shall be constructed in accordance with the standards outline in Section 17.512.70. Development within areas shown on the Flood Insurance Rate Map (FIRM) shall comply with Chapter 17.510, Flood Protection Standards.
- J. Discharge Across Property Lines. Surface drainage from any developed area shall not cross any property line except by way of a natural watercourse, major drainage facility, approved drainage system within a public storm drain easement, or permanent surface drainage easement. The County Engineer shall approve the manner of discharge and must produce no significant adverse impacts to the downhill property. Surface flows should cross a property line with historic drainage ways and in a similar manner and quantity (or less) as the pre-developed conditions.
- K. Extension of Storm Drain Facilities. Storm drain facilities shall be extended from within a development to adjacent undeveloped properties for future extensions in accordance with approved drainage plans.
- L. Adjoining Property Surface Drainage. Existing surface drainage from adjoining property shall be perpetuated through a development unless other means of disposal acceptable to the County Engineer are used.
- M. Irrigation Waters. Irrigation waters not controlled by a ditch or utility company and storm drain waters shall be conveyed by separate systems.

**Section 17.512.25 Drainage Report Contents.** Drainage Reports shall contain, at a minimum, the provisions set forth in this section.

- A. Title Page. The title page of the Drainage Report shall contain the following:
  - 1. Project name;
  - 2. Preparer's name, firm and date; and
  - 3. Professional Engineer's Seal of preparer and signature.
- B. Introduction. The introduction of the Drainage Report shall include, at a minimum, the following:

1. Street location, Assessor's parcel number(s), section reference, and adjacent developments;
  2. Topography, ground cover, existing drainage facilities, major drainage facilities, flood hazard areas, irrigation ditches, and other site conditions, using maps to complement and clarify the project description whenever possible; and
  3. Proposed project description, including other previous studies relevant to the site.
- C. Pre-development Drainage System. The Drainage Report shall provide sufficient information, including text and maps where possible, pertaining to the pre-development drainage system, including:
1. Major basins (100 acres or more), including relationship to major drainage facilities and major basin drainage characteristics (topography, runoff, cover, use, erosion); and
  2. Sub-basin and site drainage, including 5-year and 100-year storm flows for each sub-basin affecting the site, existing drainage patterns, channeled or overland flow, points of entrance and discharge, and effect of historic flows on adjacent properties. All items listed in this subsection, excluding the effects of historic flows on adjacent properties, may be tabulated on a map.
- D. Proposed (Developed) Drainage System. At a minimum, the following information regarding the proposed drainage system shall be provided in the Drainage Report. Maps shall be used to complement and clarify the description where appropriate.
1. Size of major basins and tributary sub-basins, hydrologic method to be used for analysis (Rational, Soil Conservation Service or Hydrologic Engineering Center), and design storm intensities for 5-year and 100-year storms.
  2. Runoff analysis based on the latest edition of the NOAA Atlas rainfall data pertaining to Pershing County, including pre-development storm flow rates and paths, and developed storm flow rates and paths for 5-year and 100-year storms.
  3. Design of the storm drain system to pass the 5-year storm, including all downstream improvements, with an overland system to pass up to the 100-year storm, verified storm flows from inlets to ultimate outlets of the drainage system.
  4. Detention/retention/infiltration information for the 5-year and 100-year storm(s) may be required based on limiting conditions downstream.(For example, if the off-site piped system cannot pass the 5-year storm, the portion of the 5-year storm flow exceeding the capacity of the downstream drainage facilities shall be detained on-site. If the off-site overland flow facilities cannot pass the 5-year [up to the 100-year] storm, on-site detention for all storms exceeding that capacity shall be provided.) Information should include the following:
    - a. Detention/retention/infiltration volume provided;
    - b. Release rates and methods;

- c. Passage of storms exceeding the 5-year up to the 100-year storm;
  - d. Emergency overflow provisions which will not cause a direct impact to neighboring sites.
  - e. A detailed description provided by a Nevada Registered Civil Engineer of any downstream constraints, design calculations, and mitigation recommendations; and
  - f. Detention area(s) clearly identified in preliminary or schematic plan and the necessary area(s) identified on preliminary plans.
- 5. For 5-year and 100-year storms, show on plan maps the depth and velocity of flow on streets and the drainage system for the streets.
  - 6. The type, depth and velocity of open channel flow shall be shown on plan maps.
  - 7. Storm drains and culver layouts and all relevant data shall be shown on plan maps.
- E. Areas with Flood Hazard Zone. Where the proposed development is located within a flood hazard area or limited flooding area as defined in Chapter 17.510, Flood Protection Standards, sufficient information shall be provided for the following:
- 1. Impacts;
  - 2. Protection; and
  - 3. Compliance with Federal Emergency Management Agency requirements and Chapter 17.510, Flood Protection Standards, of this Development Code.
- F. Conclusions. The Drainage Report shall include a conclusion which discusses the impacts of the proposed drainage system improvements including:
- 1. Benefits
  - 2. Adverse effects with mitigation measures for these effects.
- G. Drainage Report Appendices. The Drainage Report shall include the following information in the Appendices.
- 1. Computations. Hydrologic and hydraulic computations including:
    - a. Off-site and on-site historic runoff;
    - b. Off-site and on-site developed runoff;
    - c. Detention/retention/infiltration for up to the 100-year storm; and
    - d. Hydraulic grade line (HGL) for 5-year storms and 100-year storms.

2. Site-Location Map. Site location map on a USGS map, at a scale appropriate to show relation of site to major drainage basin(s) and sub-basins(s), showing flood hazard areas and 100-year flood plains, if applicable, and off-site flows through project.

**Section 17.512.30 Storm Drainage and Grading Plans.** Storm drainage and grading plans shall be prepared and reviewed in accordance with the applicable provisions of Chapter 17.618, Improvement Plans.

**Section 17.512.35 Design/Improvement Requirements.** Design and improvement requirements for storm drainage systems shall be in accordance with this section.

- A. Minimum Pipe Diameter. Minimum pipe diameter for any public storm drain shall be 12 inches.
- B. Drainage Channel Lining. Lining for drainage channels shall conform to the requirements of this subsection.
  1. For design velocity less than six feet per second (FPS), the following standards shall apply:
    - a. Channel lining shall be a non-eroding, long-life, low maintenance material as approved by the County Engineer; and
    - b. Side slopes shall be a maximum of three horizontal to one vertical proportion (3:1) unless otherwise approved by the County Engineer.
  2. For design velocity between 6 and 10 FPS, the following standards shall apply:
    - a. Channel lining shall consist of loose rock rip-rap size for design velocity; and
    - b. Side slopes shall be a maximum of two horizontal and one vertical proportion (2:1).
  3. For a design velocity greater than 10 FPS, channel lining of concrete or an engineered equivalent shall be required.
  4. Access roads shall be constructed when required by the County Engineer.
- C. Corrugated Metal and Plastic Piping. Corrugated metal pipe or thermoplastic pipe for public improvements may be used only at specific locations approved by the County Engineer. Corrugated metal pipe shall not be acceptable for County-owned storm drain systems. Thermoplastic pipe with a minimum pipe stiffness of 46 psi may be allowed for County-owned storm drain systems when the proper installation and testing procedures have been adopted in the Standard Specifications for Public Works Construction (Orange Book).
- D. Storm Water Piping. Storm drains to a major drainage facility shall extend, at a minimum, to the 100-year flood line and be rip-rapped from the outlet to the bottom of the channel in the direction of the flow. Channel modifications for erosion control shall be

designed so that the receiving channel or entering channel will contain the flows without erosion.

- E. Overland Flow. Overland flow shall be provided for and channeled to County standards within dedicated easements or public rights-of-way to protect structures from flood during storms that exceed the 5-year storm, up to and including the 100-year return frequency storm.
- F. Public Drainage Facilities. Constructed public drainage facilities with design flows of 60 cubic feet per second or less shall be piped in accordance with County standards. Constructed drainage facilities with flows exceeding 60 cubic feet per second may be open channel construction in accordance with County standards, when approved by the County Engineer.
- G. Piping in County Right-of-Way. The storm drain piping contained within County right-of-way shall be a minimum of Reinforced Concrete Pipe (RCP) Class III or the appropriate class when design requires a higher pipe support strength. Thermoplastic pipe with a minimum pipe stiffness of 46 psi or the appropriate class or strength may be allowed when the proper installation and testing procedures have been adopted in the Standards Specifications for Public Works Construction (Orange Book).
- H. Headwalls. Standard headwalls shall be placed on the inlet and outlet of all public pipe culverts. Pipes up to and including 72 inches in diameter shall comply in all cases with County design, size and material standards. Headwalls for pipes exceeding 72 inches require special design approved by the County Engineer.
- I. Trash Racks. Trash racks shall be provided at the upper end of all closed public conduits as approved by the County Engineer.
- J. Interceptor Swales. Paved interceptor swales shall be provided along the top of retaining walls and cut slopes to intercept drainage. When required by the County Engineer, paved swales shall be provided to intercept drainage from adjacent property.
- K. Manholes. Manholes for public improvements shall be located at junction points, at changes in horizontal or vertical alignment exceeding the minimum allowable pipe deflection, at changes in conduit size, and at the end of public lines, unless otherwise approved by the County Engineer. Manholes shall be made of pre-cast concrete, brick or concrete block twice-coated with Portland cement Mortar. Manhole frames and covers shall be constructed of cast iron complete with locking devices and "STORM SEWER" integrally cast into cover.
  - 1. When permitted by the County Engineer, pipe placed on curves (horizontal and vertical) shall meet manufacturer's recommendation for curved alignment.
  - 2. All curves, radii, length of pipe joints, and types of pipe shall be shown on the plans.

3. Manholes shall be spaced as follows:

**Table 17.512.35-1 Manhole Spacing Requirements**

Pipe Size	Manhole Spacing
15" or <	500'
18" to 36"	600'
42" to 60"	700'
60" +	700'+

4. The top riser shall terminate no less than one foot below finished grade. The manhole cover shall be flush with finished grade.
- L. Catch Basins. Catch basins are to be designed and located in accordance with the Nevada Department of Transportation Standards and Specifications in addition to the following criteria:
1. Catch basins shall be installed at low points of vertical curves, at all major street intersections where appropriate, and at sufficient intervals to intake the peak flow for the 5-year return storm runoff, such that flows will not interfere with traffic or flood adjoining property;
  2. In no instance shall the flow from a 5-year return storm extend more than 50 percent onto the travel land adjacent to the curb;
  3. Laterals from catch basins are to tie into manholes in the direction of the flow (catch basins shall not tie into each other unless otherwise approved by the County Engineer);
  4. Flow along gutters and into inlets shall be computed by the Rational Method or other recognized industry standards using coefficients based on planned land use and ultimate future development;
  5. Sir-traps, or an appropriate equal, shall be installed within all catch basins to provide pre-treatment for petrochemicals and silt;
  6. Sheet flow across intersections is not permitted; and
  7. "Bubble up" type outlet basins are not permitted.
- M. Structures Under County Roadways. Drainage structures located under County roadways shall be designed to pass the 100-year storm flow resulting from a fully developed condition within the watershed.
- N. Valley Gutters. Reinforced concrete valley gutters for public improvements may be placed at street intersections only when approved by the County Engineer, and shall not be placed transverse to collector and arterial streets.
- O. Floodplains. Embankment shall not be placed within the 100-year flood plain of a major drainage facility without prior approval by the County Engineer. Where such approval is given, the embankment shall be faced with rip-rap or an approved lining designed for

velocity to a minimum of one foot above the 100-year flood line. Development within areas shown on the Flood Insurance Rater Map (FIRM) shall comply with Chapter 17.510, Flood Protection Standards.

P. Sump Conditions. Sump conditions within streets shall require paved overland concrete swales in drainage easements and a storm drain system for conveyance of storm water.

Q. Lot Drainage Swales. Lot drainage swales on private property shall be provided in accordance with the provisions of this subsection.

1. Surface drainage swales shall be maintained and perpetuated by the property owners. Lining shall be required for rear or common side lot drainage swales if the 5-year flow will cause erosion or if the flow depth is greater than ½ foot. Lining is not required for common side lot swales serving only two adjacent lots. A geotechnical investigation shall be conducted to evaluate soil erosion potential for use in the design of drainage swales.

2. Standard lot line drainage swales shall be designed to carry the waters generated by a 100-year frequency storm.

a. Discharge from swales shall be conveyed to an acceptable drainage facility;

b. When inlets and piping are used, inlets shall be approved by the County Engineer, and the pipes shall have a minimum diameter of 12 inches;

c. Provisions shall be made for overland flow in the event that catch basins plug.

R. Design Computations. Storm drainage systems, for both public and private improvements, shall be designed in accordance with this subsection.

1. Mannings Formula. Mannings Formula shall be used in computing capacities of all open channels and closed conduits with the following minimum values for roughness coefficient "n".

**Table 17.512.35-2 Mannings Formula for Computing Capacities**

<b>Channel/Conduit</b>	<b>"n"</b>
Pvs or ABS	0.010
Concrete Pipe	0.014
Corrugated Metal Pipe (100% paved)	0.015
Corrugated Metal Pipe (paved invert)	0.019
Corrugated Metal (plain)	0.024
Open channels with gunite lining	0.019
Open channels with paved bottom	0.025
Earth channels (no rock or gravel)	0.030
Rock or gravel – per approved Engineers Manual Based on size and placement of materials.	

2. Rational Method. The Rational Method may be used in computations for the rate of runoff for urban and small watershed (500 acres or less). The SCS (Soil Conservation Service) method, SCS TR-55 “Urban Hydrology for Small Watersheds”, or other acceptable method may be used for larger watersheds.

a. The design flow for the Rational Method is expressed as  $Q=CiA$ , where:

$Q$  = peak rate of runoff, cubic feet per second;

$C$  = runoff coefficient;

$i$  = average rainfall intensity, inches per hour; and

$A$  = watershed area, acres.

b. The following listed runoff coefficients shall be used in performing computations with the Rational Method. A “build-up”  $C$  value may be required in special conditions such as very small lots with large houses or duplexes.

**Table 17.512.35-3 Runoff Coefficients for Computing Capacities**

Land Use Designation	Runoff Coefficient “C”
LDR,MDR,AMR,GR	0.25-0.35
LDS,MDS,HDS	0.45-0.60
General Commercial	0.85
Neighborhood Commercial/Office	0.85
Industrial	0.85-0.90
Public Services and Facilities	0.50-0.85
Pavement and Concrete Surfaces	0.90-0.95
Parks and Recreation	0.25
Open Space (0.5% grade-vegetated)	0.20-0.30
Open Space (0-5% grade-no vegetation)	0.30-0.40
Open Space (5-5% grade-vegetated or un-vegetated)	0.40-0.50
Open Space (Over 15% grade-sparsely vegetated, rock or clayey soils)	0.40-0.60

c. The rainfall intensity curve shall be used for determining the average intensity. The time of concentration, with a minimum build up time of ten (10) minutes is expressed as:

$$tc_1 = 10 \text{ or } \frac{L}{V \times 60} \text{ (whichever is greater)}$$

where:

$tc_1$  = time of concentration at initial inlet (in minutes)

$L$  = length from uppermost point of watershed inlet (in feet)

$V$  = channel or overland velocity (in feet per second)

- d. Given the time of concentration at a design point, the time of concentration at the next design point is determined by adding travel time, expressed as:

$$t = \frac{L}{V \times 60}$$

where:

- t = travel time (in minutes)  
L = length of channel or conduit between design points (in feet)  
V = channel or conduit velocity (in feet per second)

3. HEC-1 Method. HEC-1 with the SCS subroutine may be used in computations for urban and small watersheds (500 acres or less). HEC-1 method may be used to calculate the rate of runoff for large watersheds.
4. Minimum Design Velocity. Minimum design velocity shall be three feet per second for closed conduits. Minimum design velocity shall be calibrated at ½ of pipe diameter.

**Section 17.512.40 Easements.** Easements shall be provided in accordance with the provisions set forth in this section.

- A. Vehicular Access. Easements with improved vehicular access in accordance with County standards shall be provided to publicly-owned storm drain manholes, storm drain inlets and outlets, ditches and associates structures not located within an improved street section. Improved vehicular access may be waived by the County Engineer due to rough terrain. (Refer to Chapter 17.514, Transportation Standards.)
- B. 100-Year Floodplain. Easements for access to, and maintenance of, the 100-year storm floodplain associated with a major drainage facility or natural water course shall be provided. Improve vehicular access in accordance with County standards shall be provided when determined necessary by the County Engineer.
- C. Public Improvements. Storm drain easements for public improvements shall be a minimum width of 15 feet. The final easement width shall be determined by pipe width, required trench clearance, and excavated trench side slopes not less than one horizontal to one vertical proportion (1:1), and as approved by the County Engineer.
- D. Private Property. Storm drainage easement(s) will be required for storm waters generated within the boundaries of a development that discharge onto or across private property. If the storm drain waters generated within of a development discharges from a public drain system onto and across private property, a permanent easement for access and maintenance shall be granted to the County from the property boundary to the point of discharge into an existing public storm drain system, major drainage facility, or natural water course. Improvements to county standards shall be required if the County is to maintain the easement. The County Engineer shall determine if the easement is to be accepted for maintenance.

**Section 17.512.45 Maintenance and Repair.** The owner of a storm water detention facility that serves a non-residential use and the owner, homeowners association or similar entity of a facility serving a residential use shall be responsible for the maintenance and repair of the facility. For subdivisions, this responsibility shall be documented in the subdivision covenants that shall be recorded with the final plat.

- A. Transfer of ownership. In the event the property upon which the facility is located is sold or transferred to another owner or entity, the transferring owner or entity shall execute a legally binding, recorded document transferring ownership rights and maintenance and repair responsibilities to the successors in title, a certified copy of which shall be provided to the County Clerk.
- B. Bond Required. A bond, in an amount determined by the County Engineer, may be required to ensure that maintenance and repair will be provided for the facility in the event the owner or entity is unwilling or unable to provide same.
- C. Notice Required. The County shall notify the owner or entity in writing of potential danger(s) to health and safety or of nuisance conditions involving the facility. The owner or entity shall have a specified period of time in which to cure the violation. If the owner or entity fails to respond to the written notice and request for service within the time period established, the County shall cause the maintenance or repair of the facility and may take action to recover costs.



## CHAPTER 514

### TRANSPORTATION STANDARDS

#### SECTIONS:

17.514.00	Purpose
17.514.05	Applicability
17.514.10	Other Applicable Standards and Guidelines
17.514.15	General Provisions
17.514.20	Plan Review, Inspection and Bonding Requirements
17.514.25	Street Design Requirements
17.514.30	Street Surfacing
17.514.35	Grades
17.514.40	Aggregate Base Courses
17.514.45	Bituminous Paving
17.514.50	Approaches
17.514.55	Street Intersections
17.514.60	Emergency Access Roads
17.514.65	Improved Maintenance Access
17.514.70	Dead-end Streets
17.514.75	Cul-de-sacs
17.514.80	Private Streets
17.514.85	Driveways
17.514.90	Curbs and Gutters
17.514.95	Sidewalks
17.514.100	Culverts
17.514.105	Cattle Guards
17.514.110	Street Signs, Markings and Traffic Control Devices
17.514.115	Street Classification
17.514.120	Street Dedication
17.514.125	Traffic Studies

**Section 17.514.00 Purpose.** The purpose of Chapter 514, Transportation Standards, is to provide the minimum standards and procedures for transportation system improvements. The regulations in this chapter are intended to ensure that transportation infrastructure is safe, adequate and properly designed and minimizes environmental disturbance and maintenance costs.

**Section 17.514.05 Applicability.** The provisions of this chapter apply to public and private transportation improvements which are part of new development which requires approval or issuance of a permit by the county, including but not limited to:

- A. Public works projects;
- B. Subdivisions;
- C. Planned Unit Developments;

- D. Parcel Maps;
- E. Division into Large Parcel Maps;
- F. Special Use Permits;
- G. Building Permits;
- H. Projects which require a site plan, improvement plans, or development agreement.

**Section 17.514.10 Other Applicable Standards and Guidelines.** The requirements established by this chapter make reference to and shall be used in conjunction with the following standards and guidelines:

- A. The latest edition of the Standard Specifications for Public Works Construction and the Standard Details for Public Works Construction (Orange Book);
- B. The latest edition of the Highway Capacity Manual of the Transportation Research Board and the National Research Council;
- C. The Institute of Traffic Engineers (ITE) guidelines;
- D. The American Association of State Highway and Transportation Officials (AASHTO) guidelines;
- E. The latest edition of the Manual of Uniform Traffic Control Devices (MUTCD);
- F. The Americans with Disabilities Act (ADA) standards.

**Section 17.514.15 General Provisions.**

- A. The design, plan review, construction and operation of transportation infrastructure shall take place in accordance with the standards established by this chapter and all other applicable local, State and Federal regulations.
- B. Provisions shall be made to provide legal access and adequate transportation infrastructure to new development to provide a safe, convenient and functional system for vehicular, pedestrian and bicycle circulation.
- C. Rights-of-way and easements shall be dedicated and transportation infrastructure shall be constructed, as necessary, to provide legal access from an existing public road to each new lot and habitable building which is part of new development. Transportation infrastructure and dedicated rights-of-way and easements shall be adequate to support the development and any additional new development in the reasonably foreseeable future.
- D. Transportation infrastructure shall be provided to new development, as required by Table 17.501.15-1 and Chapter 17.501, or as otherwise required by the County when deemed reasonably necessary and when consistent with the Master Plan.

- E. The County shall not approve any development proposal until it has been determined that the provisions for transportation are adequate to support the development and are in compliance with applicable regulations.
- F. The County shall not issue a building permit for any lot or parcel until access has been provided to such lot or parcel by a public road or approved private road.
- G. The County shall not approve a development project if such development, at full occupancy, will result in an traffic increase on a road or intersection within one mile of the development so that the road or intersection does not function at a level of service C or better as defined in the Highway Capacity Manual.
- H. Unless otherwise approved by the County Engineer, at least two means of ingress and egress, constructed to County standards, shall be provided to serve new development created by a subdivision map or planned unit development. Of the two means, one may be constructed in accordance with the emergency access standards provided in Section 17.514.60, Emergency Access Roads.
- I. The County may require the extension of transportation improvements to the boundaries of new development, when deemed reasonably necessary to facilitate the extension of such improvements to future development.
- J. When a development project is anticipated to generate more than 500 vehicle trips per day or when otherwise required by the County Engineer, an applicant shall submit a traffic impact analysis pursuant to Section 17.514.125, Traffic Studies.
- K. A Permit of Occupancy shall be obtained from the Nevada Department of Transportation (NDOT) for any street which provides access to, from or under a road or highway maintained by the NDOT. Approved permits shall be submitted to the Planning Department.

**Section 17.514.20 Plan Review, Inspection and Bonding Requirements.**

- A. All proposed transportation improvements shall be reviewed and approved by the County Engineer and/or the County Road Superintendent to ensure that such improvements will be constructed to County standards and are in compliance with the Development Code and other applicable regulations.
- B. Improvement plans for new transportation infrastructure shall be prepared, submitted to the County, and reviewed pursuant to Chapter 17.618, Improvement Plans.
- C. The construction, inspection and bonding of transportation improvements shall take place in conformance with Chapter 17.620, Construction, Inspection and Bonding of Public Improvements.

**Section 17.514.25 Street Design Requirements.** All public and private streets shall be designed and constructed in accordance with the provisions of this section.

- A. Level of Service. Streets shall be designed to meet a level of service of C or better as defined by the Highway Capacity Manual.

B. Streets shall be designed in accordance with the standards established by Table 17.514.25-1.

**Table 17.514.25-1 Street Design Standards.**

Design Standards	Street Classification		
	Principal Arterial	Major and Minor Collector	Local
Min. Right-of-way Width <sup>1</sup> (feet)	100	80	60
Min. Street Width (feet)	48	24	24
Traffic Lanes	4 or more <sup>2</sup>	2 <sup>2</sup>	2
Design Speed (mph)	55	45 <sup>3</sup>	30 <sup>3</sup>
Minimum Intersection/ Driveway Spacing	based on type and location	300'	125'
Shoulder (not required with curbs and gutters)	8' each side	8' each side	3' each side
On-Street Parking	not permitted	controlled	permitted

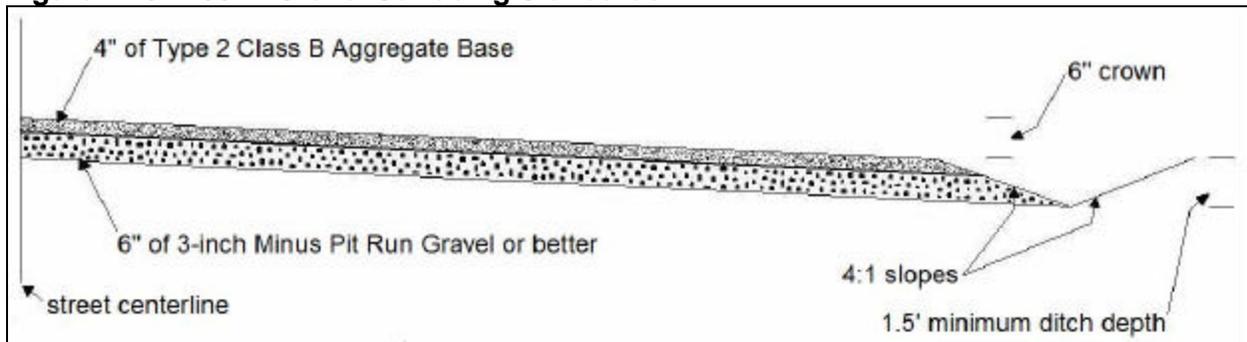
Table notes:

1. To facilitate turning within intersections, larger rights-of-way may be required by the County Engineer.
2. Turn lanes may be required by the County Engineer.
3. Lower design speeds may be required by the County.

**Section 17.514.30 Street Surfacing.** All public and private streets shall be designed and constructed in accordance with the requirements of this section.

- A. The type of surfacing which shall be required by the County for new streets serving new development is established by Section 17.501.15, Improvement Requirements for New Development by Land Use District.
- B. Gravel surfaced streets shall be designed in accordance with the standards established by Figure 17.514.30-1. Asphalt surfaced streets shall be designed in accordance with the standards established by Figure 17.514.30-2.
- C. Paved streets shall be designed in accordance with AASHTO standards.
- D. The standards established by this section are the minimum standards for street surfacing. The County Engineer and/or the County Road Superintendent may require higher standards when deemed reasonably necessary.

**Figure 17.514.30-1 Gravel Surfacing Standards.**



**Figure 17.514.30-2 Asphalt Surfacing Standards.**

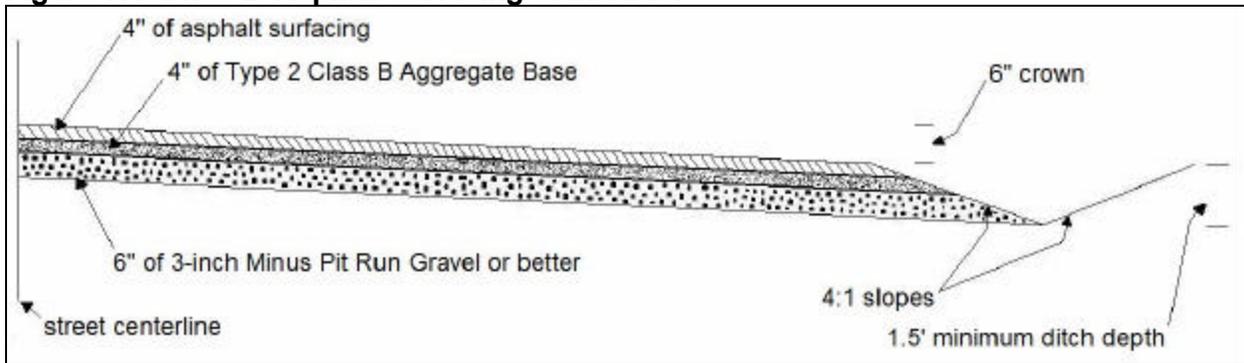


Figure Notes:

1. Three inches of plant mix may be used where the gravel base has an R-value of 60 or greater.

**Section 17.514.35 Grades.** All public and private streets shall be designed and constructed in accordance with the requirements of this section.

A. Minimum Grades. All streets shall have a minimum grade of 0.5 percent.

B. Maximum Grades:

1. Principal arterials shall have a maximum grade of six percent.
2. Major and minor collector and local streets shall have a maximum grade of six percent. The Engineer may approve steeper grades due to specific site conditions such as topographical constraints.
3. When a steeper grade is permitted by the County Engineer, he may also require additional design requirements, as necessary, to mitigate the steeper grade.

**Section 17.514.40 Aggregate Base Courses.** Aggregate base courses shall comply with the provisions of this section.

A. Sub-grade Preparation. Any ruts, holes, defects, or soft yielding places which occur in the sub-grade or sub-base from any cause shall be corrected and compacted to required density and stability before an aggregate base course is placed thereon. A 90% compaction-minimum is required.

B. 3-Inch Minus Pit Run Gravel. This aggregate shall conform to the following specifications:

**Table 17.514.40-1 Three Inch Minus Pit Run Gravel Specifications.**

Sieve Size	Percent by Weight Passing Sieve
3"	100
1 1/2"	90 – 100
3/4"	35 – 65
No. 16	15 – 40
No. 200	2 - 10

1. The plastic Index shall not exceed six maximum.

C. Type 2 Class B Aggregate Base. This aggregate shall conform to the following specifications:

**Table 17.514.40-2 Type 2 Class B Aggregate Base Specifications.**

Sieve Size	Percent by Weight Passing Sieve
1"	100
3/4"	90 – 100
1/4"	35 – 65
No. 16	15 – 40
No. 200	2 - 10

1. The plastic Index shall not exceed six maximum.

D. Spreading Aggregate Base Courses. Aggregate shall be uniformly distributed over the surface of the approved sub-grade in sufficient quantity to provide the required depth.

The aggregate shall be thoroughly mixed and water shall be added in sufficient quantities to prevent segregation and to assist in compaction. After the aggregate has been properly mixed it shall be spread to the required depth and cross section and shall be compacted to 95% relative maximum density.

**Section 17.514.45 Bituminous Paving.** Bituminous paving shall comply with the provisions of this section.

A. Applicability. This section applies to the construction of one or more courses of bituminous pavement on a prepared base or road surface. This section applies to all types of bituminous pavements, whether they are mixed on site or at a central mixing plant, and applies to both "hot mix" and "cold mix" pavement types.

B. Composition of Mixture. Bituminous pavement shall be composed of a mixture of aggregate and bituminous material uniformly graded and combined in such proportions that will prevent raveling or bleeding of the finished surface.

Crushed particles: 50% minimum  
 Plastic Index: 6% maximum  
 Liquid Limit: 30% maximum

The bituminous material shall be of a type and grade that will allow proper mixing, handling and placing of the mixture. The bituminous material shall be added to the aggregate at a proportion as near as possible to the optimum and shall not deviate from the optimum percentage by more than 0.5% plus or minus.

The aggregate used for bituminous pavements shall conform to the specifications established by Table 17.514.45-1:

**Table 17.514.45-1 Bituminous Pavement Aggregate Specifications**

Sieve Size	Percent by Weight Passing Sieve
1 ½"	90 – 100
¾"	55 – 85
No. 4	25 – 55
No. 16	10 – 35
No. 200	3 – 9

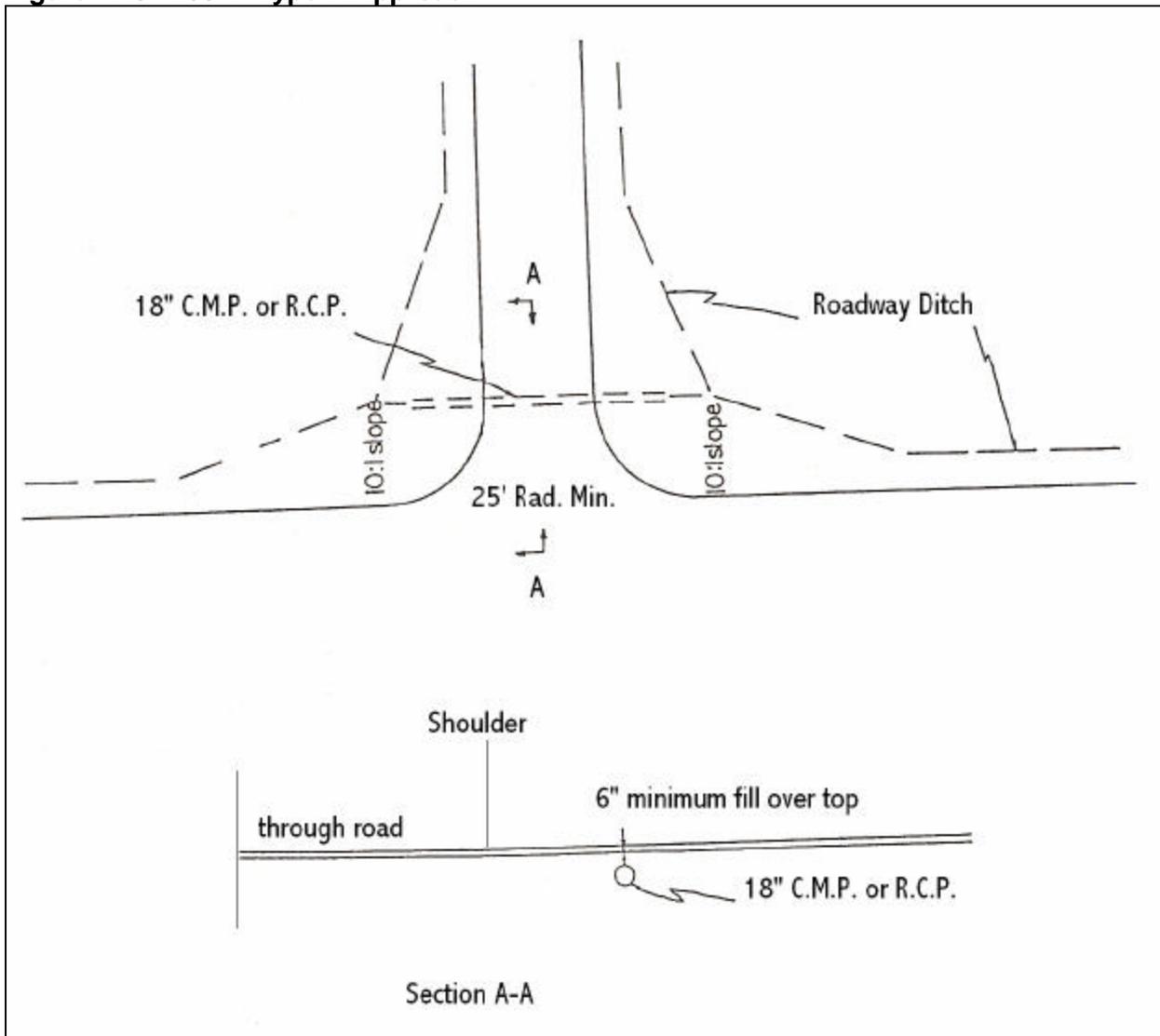
- C. Spreading and Finishing. After the aggregate and bituminous material have been combined and thoroughly mixed to a uniform homogeneous texture, the mixture shall be spread uniformly over the area to be surfaced, to the proper width and to an adequate depth to be compacted to the required thickness.

The material shall be rolled and compacted in a manner that will result in a relative density of at least 95% of maximum. The surface shall conform as near as possible to the designed cross section of the roadway and shall have a maximum deviation of ½-inch vertically and 6 inches horizontally.

**Section 17.514.50 Approaches.** Approaches shall be designed and constructed in accordance with the requirements of this section.

A. Type A Approach (Culvert).

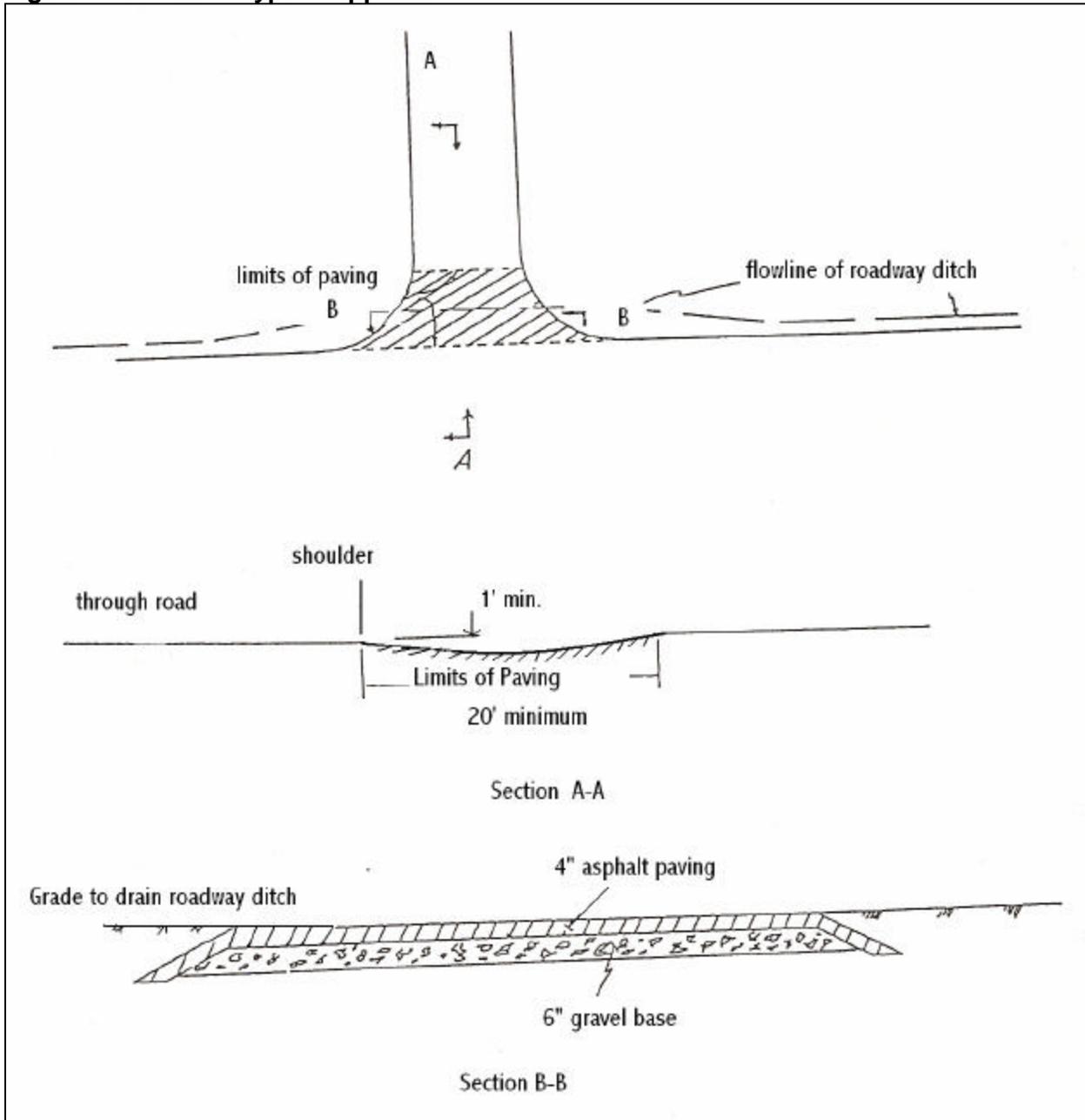
**Figure 17.514.50-1 Type A Approach**



1. Culvert pipe size shall be a minimum size of 18 inches. Larger pipe may be required by the County Engineer depending on specific conditions, such as the size of ditch, amount of water, etc.

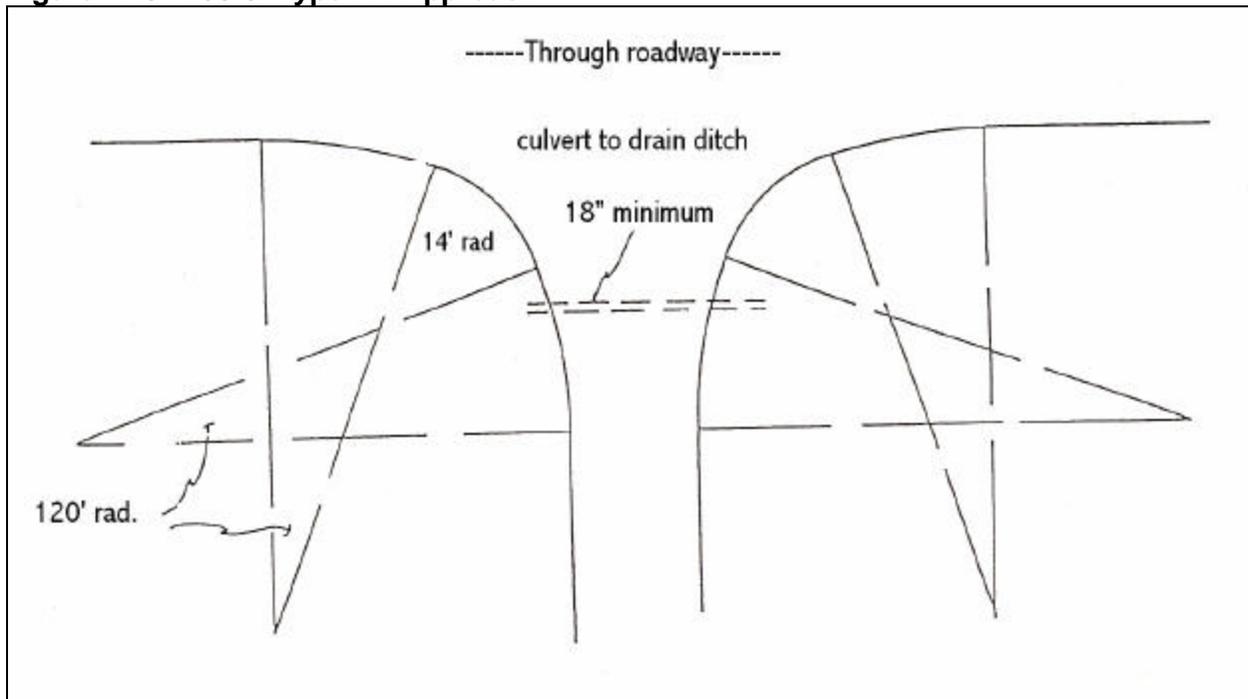
B. Type B Approach (Paved Dip).

**Figure 17.514.50-2 Type B Approach**



C. Type AA Approach (Large Truck-Commercial).

**Figure 17.514.50-3 Type AA Approach**



**Section 17.514.55 Street Intersections.** Street intersections shall comply with the provisions of this section.

- A. No more than two streets shall cross or intersect at the same point. All intersections, including intersections which are off-set on opposite sides of a street, shall be separated by at least 250 feet, measured along the centerline of the primary street from centerline to centerline of the intersecting streets.

**Section 17.514.60 Emergency Access Roads.** Emergency access roads shall be designed and constructed in accordance with the requirements of this section.

- A. Easement and Structural Design. Emergency access roads shall comply with the following standards, unless otherwise approved by the Fire Marshall and County Engineer:
- A minimum 30 foot wide easement shall be provided for emergency access roads;
  - The emergency access roadway shall be a minimum width of 20 feet and structurally designed to support a tandem axle loading of 25 tons, with a minimum outside turning radius of 40 feet.
- B. Grade. Grades for emergency access shall not exceed the requirements established by Section 17.514.35, unless otherwise approved by the County Engineer.

- C. Surfacing. Emergency access shall be surfaced utilizing a method approved by this chapter. The County may require a specific type of surfacing when deemed reasonably necessary.
- D. Access Control. Access to emergency access roads shall be controlled by an emergency access control gate, and shall be posted with a sign stating "For Emergency Vehicles Only." Alternatives may be approved by the County Engineer.
- E. Drainage. Emergency access shall be provided with adequate roadside drainage, consistent with Chapter 17.512, Storm Drainage Standards.

**Section 17.514.65 Improved Maintenance Access.** Vehicular access for maintenance of sanitary sewer system, water system, or storm drainage components and facilities shall be designed and constructed in accordance with the requirements of this section.

- A. Structural Design. Maintenance access shall be constructed to support a tandem axle loading of 25 tons.
- B. Minimum Width. Maintenance access shall be constructed to a minimum width of 12 feet.
- C. Grade. Maintenance access shall be constructed with grades not exceeding 12 percent, unless otherwise approved by the County Engineer.
- D. Surfacing. Maintenance access shall be surfaced utilizing a method approved by this chapter. The County may require a specific type of surfacing when deemed reasonably necessary.
- E. Drainage. Maintenance access shall be provided with adequate roadside drainage, consistent with Chapter 17.512, Storm Drainage Standards.

**Section 17.514.70 Dead-end Streets.** All dead-end streets shall be provided with a cul-de-sac in accordance with Section 17.514.75, Cul-de-sacs.

**Section 17.514.75 Cul-de-sacs.** Cul-de-sacs shall be designed and constructed in accordance with the requirements of this section.

- A. Development on streets which are longer than 300 feet and utilize a cul-de-sac shall not generate more than 100 vehicle trips per day, as projected using the current ITE Trip Generation Manual.
- B. Bulb Radius. The minimum radius of a cul-de-sac bulb shall be 50 feet, measured from the center point of the cul-de-sac bulb to the face of curb or edge of pavement.
- C. Temporary Cul-de-sacs. A temporary cul-de-sac shall be constructed for any street which temporarily dead-ends as part of a phased development or otherwise. The minimum radius of a temporary cul-de-sac bulb shall be 50 feet. Temporary cul-de-sacs shall be provided with adequate drainage, pursuant to Chapter 17.512, Storm Drainage Standards.

**Section 17.514.80 Private Streets.** Private streets shall be designed and constructed in accordance with the requirements of this section.

- A. The County may approve the construction of private streets to serve new development.
- B. Private streets shall be designed and constructed in conformance with the standards established by this chapter.
- C. The County shall not be responsible for maintenance of private streets.
- D. The County shall encourage the establishment of a homeowner's association or other appropriate entity or method to ensure the ongoing maintenance of private streets.
- E. The County shall not consider or accept any offer of dedication of a private street to Pershing County unless such street is in compliance with all applicable standards in effect at the time of the offer for dedication.
- F. The final approval document (i.e. final subdivision map, special use permit) for a development project for which the construction of private streets has been approved, shall include a prominent note which states, to the satisfaction of the Planning Director, that the County has approved the construction of private streets and that the County will not assume responsibility for maintenance of such streets.

**Section 17.514.85 Driveways.** Private driveways shall be designed and constructed in accordance with the requirements of this section.

- A. A private driveway may be utilized to access up to eight dwellings.
- B. Driveways shall be a minimum of 12 feet in width and a maximum of 25 feet in width.
- C. Driveways shall have a maximum grade of 14 percent.
- D. Driveway grades shall not exceed three percent within a public right-of-way.
- E. When a driveway accesses a paved road, an asphalt or concrete approach apron shall be constructed from the property line to the edge of the roadway.
- F. All shared private driveways shall be surfaced utilizing a method approved by this chapter to provide adequate emergency access.
- G. Corner lots shall be accessed from the street with the lowest use classification. When the intersecting streets classifications are equal, access shall be provided from the street with the greatest frontage.
- H. The minimum distance between driveways shall comply with the standards established by Table 17.514.85-1.

**Table 17.514.85-1 Spacing between Driveways**

Street Classification	Minimum Distance Between Driveways
Arterial	500 feet
Major and Minor Collector	300 feet <sup>1</sup>
Local	No minimum distance

- I. The minimum distance between corner lot driveways and street intersections shall comply with the standards established by Table 17.514.85-2.

**Table 17.514.85-2 Spacing between Driveways and Intersections**

Driveway Location – Street Classification	Intersecting Street Classification		
	Local	Collector	Arterial
Local	30'	50'	100'
Collector	300'	300'	300'
Arterial	500'	500'	500'

1. When channelized right turn lanes are utilized, the minimum spacing between the driveways and intersections shall be based on AASHTO standards.

**Section 17.514.90 Curbs and Gutters.** Curbs and gutters shall be designed and constructed in accordance with the requirements of this section.

- A. Curbs and gutters shall be constructed when required by Table 17.501.15-1. These requirements may be waived by the County along local streets when the minimum lot size of new development is 1/2 acre or more.
- B. Curb returns shall be provided with pedestrian ramps for the handicapped in accordance with ADA standards.
- C. Curbs and gutters shall be constructed in accordance with the latest edition of the *Standard Specifications for Public Works Construction* and *Standard Details for Public Works Construction (Orange Book)*, unless otherwise approved by the County Engineer.

**Section 17.514.95 Sidewalks.** Sidewalks shall be designed and constructed in accordance with the requirements of this section.

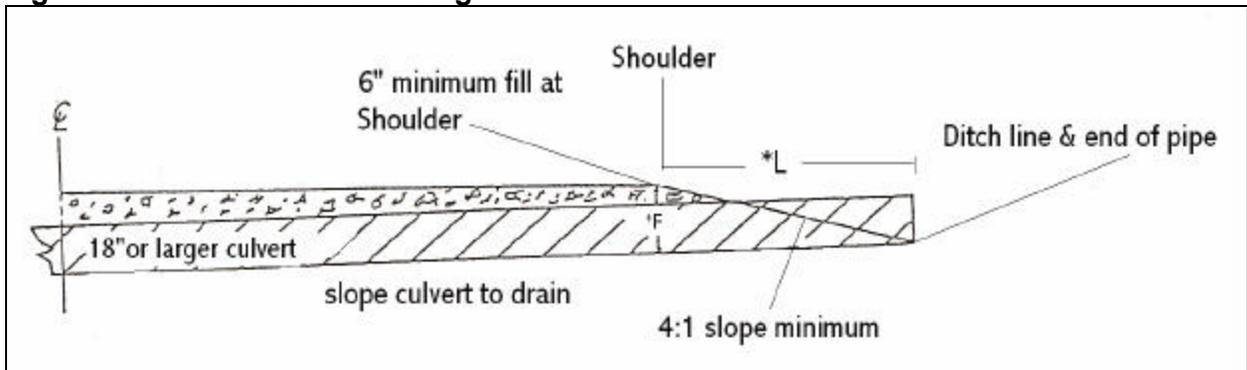
- A. Sidewalks shall be provided along all collector and principal arterial streets within ¼ mile of a school, park or library and along all collector and principal arterial streets within ½ mile of a city.
- B. Crosswalks shall be provided at all intersections located within ¼ mile of a school, park or library and may be required by the County across any block longer than ¼ mile.
- C. Sidewalks shall be located within a dedicated right-of-way or access easement.
- D. Sidewalks shall be a minimum of four feet in width.

<sup>1</sup> Not applicable to single family lots of 10 acres or larger.

- E. Sidewalks shall be designed in compliance with ADA standards.
- F. No obstructions (i.e. power poles, street lights, signal poles and controls, water meter boxes, pull boxes, mail boxes, etc.) shall be located within sidewalk areas, except when permitted by the County Engineer.

**Section 17.514.100 Culverts.** Culverts shall be designed and constructed in accordance with the requirements of this section.

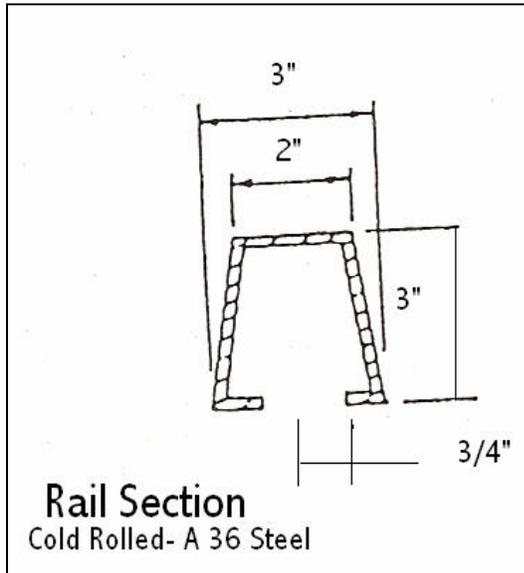
**Figure 17.514.100-1 Culvert Design**



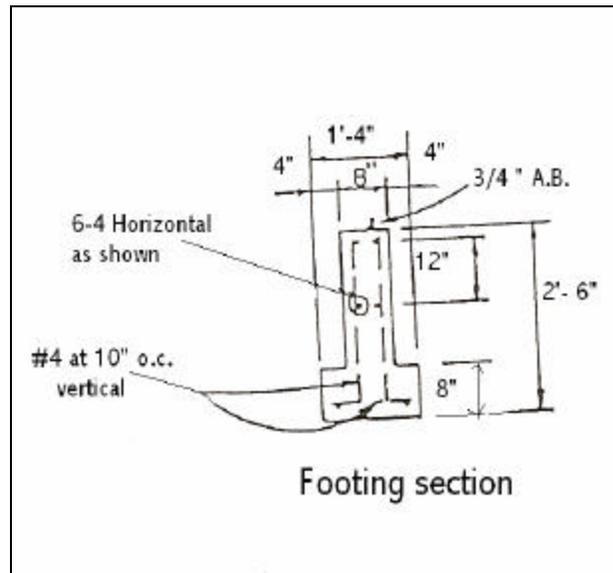
\*F = fill from culvert flow line to finished shoulder.  
 L = length of culvert beyond shoulder ( $L = F \times \text{slope}$ ).



**Figure 17.514.105-2  
Cattle Guard Rail Section**



**Figure 17.514.105-3  
Cattle Guard Footing Section**



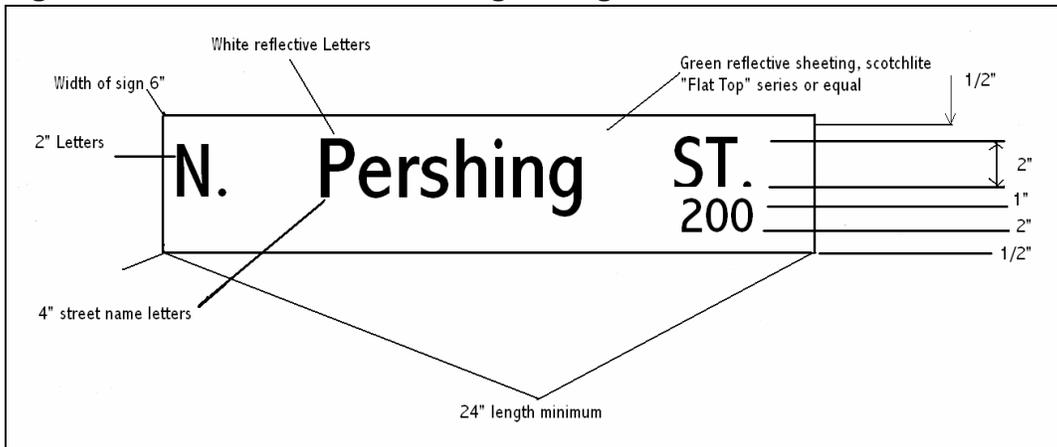
Loading	H 10	H 15	H 20
Beam	C 7 x 9.8	W 8 x 10 C 8 x 11.5	W 8 x 15
Rail	10 GA	10 GA	8 GA

1. Cattle guards shall be from a manufacturer approved by the County Road Superintendent.
2. Footing shall be Class AA or DA conc. (3000 psi) and have lifting hooks six inches to one foot from each end.
3. For different loads or additional details, consult with manufacturer.

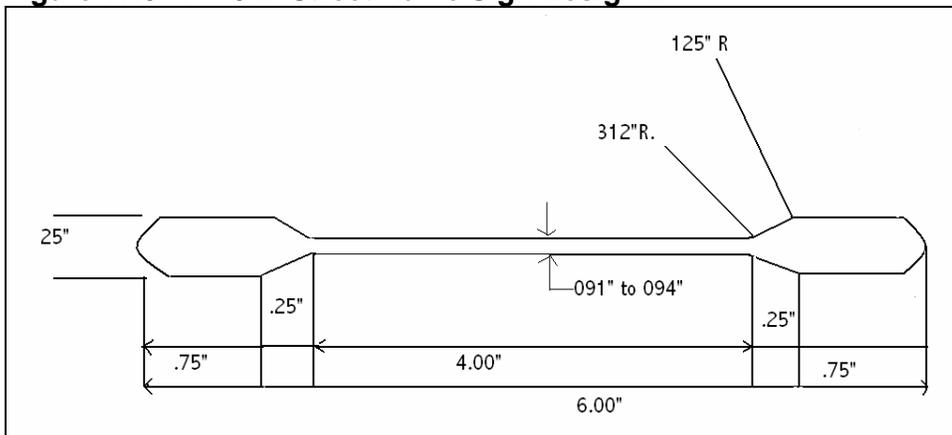
**Section 17.514.110 Street Signs, Markings and Traffic Control Devices.** Street signs, permanent markings and traffic control devices shall comply with the provisions of this section.

- A. Street signs, permanent markings and traffic control devices shall be installed with new transportation infrastructure and shall be in compliance with the latest edition of the *Manual of Uniform Traffic Control Devices*.
- B. Stop Signs. Stop signs shall be 36 inches by 36 inches in size unless approved or required otherwise by the County.
- C. Street Name Signs. Street name signs shall use reflective materials, be mounted on extruded aluminum No. 6063-T6, and shall comply with the standards established by Figure 17.514.110-1 and Figure 17.514.110-2.

**Figure 17.514.110-1 Street Name Sign Design 1**



**Figure 17.514.110-2 Street Name Sign Design 2**



**Section 17.514.115 Street Classification.** All streets shall be classified as a principal arterial, major collector, minor collector or local road as established in the transportation portion of the Master Plan.

All new streets or any street which has not already been classified shall be classified by the County Road Superintendent and Planning Director. In classifying streets, the Road Superintendent and Planning Director shall consider projected traffic demands for the next 20 years.

All section line roads shall be classified as collector streets unless specifically designated otherwise in the Master Plan or unless the Road Superintendent and Planning Director determine that there will not be any future need for a collector road along a particular section boundary.

**Section 17.514.120 Street Dedication.** The County shall not accept any street for dedication unless such street meets the standards established by this chapter and other applicable regulations.

**Section 17.514.125 Traffic Studies.** All traffic studies and reports shall be prepared in accordance with current ITE and AASHTO guidelines. Traffic studies and reports shall be prepared and signed and stamped by a Nevada Registered Civil Engineer.

A. Traffic studies shall be required as follows:

1. A traffic impact analysis shall be required when a development project is anticipated to generate more than 500 vehicle trips per day based on the Institute of Transportation Engineers trip generation rates.
2. The County Engineer may require the submission of a traffic impact analysis or other study or report when deemed necessary due to the specific circumstances of a development project.

B. Traffic Impact Analysis. A traffic impact analysis shall include the following at a minimum:

1. Existing traffic conditions, including average daily and peak-hour levels of service, for all roads and intersections located within one mile of the project site;
2. Projected traffic conditions after full development of the project, including average daily and peak-hour levels of service, for all roads and intersections located within one mile of the project site;
3. Average daily and peak-hour traffic demands that will be generated by the project;
4. Current capacity of all existing roads and intersections located within one mile of the project site;
5. Proposed traffic mitigation measures, if the project is projected to create a level of service of "D" or worse as defined by the *Highway Capacity Manual*. Mitigation measures shall result in a projected level of service of "C" or better;
6. Estimated cost of any proposed traffic mitigation measures;
7. Proposed traffic control components;
8. Any additional information or materials, as deemed necessary by the County Engineer, for review of the traffic impact of the development project.

## CHAPTER 516

### WATER SUPPLY STANDARDS

#### SECTIONS:

17.516.00	Purpose
17.516.05	Applicability
17.516.10	General Provisions
17.516.15	Centralized Water Supply Systems
17.516.20	Individual Wells
17.516.25	Dedication/Relinquishment of Water Rights
17.516.30	Extension and Over-sizing of Infrastructure
17.516.35	Easements

**Section 17.516.00 Purpose.** The purpose of Chapter 516, Water Supply Standards, is to establish regulations and standards for the provision of water to development.

**Section 17.516.05 Applicability.** The provisions of this chapter apply to all new development which requires the use of water resources or the provision of water and which requires approval or issuance of a permit by the county, including but not limited to:

- A. Public works projects;
- B. Subdivisions;
- C. Planned Unit Developments.
- D. Parcel Maps;
- E. Division into Large Parcel Maps;
- F. Special Use Permits;
- G. Building Permits;
- H. Projects which require a site plan, improvement plans, or development agreement.

#### **Section 17.516.10 General Provisions.**

- A. Provisions shall be made for the supply of water of adequate quality and quantity to all new lots and habitable buildings which are part of new development.
- B. Water shall be provided to new development by a centralized water supply system when required by Section 17.516.15. Where centralized water service is not required or is unavailable, water shall be provided by individual wells, pursuant to Section 17.516.20.
- C. Adequate fire flow shall be provided to new development for fire protection when required by Table 17.501.15-1. When a centralized service system is unavailable or

inadequate to provide required fire flow to new development, an applicant shall be required to construct and dedicate a standpipe or other suitable water source for fire protection. The County Engineer shall approve alternative fire protection methods, in conjunction with any associated fire departments or water providers.

- D. Water supply, including system design, construction and operation shall take place in compliance with all applicable local, state and federal regulations.
- E. The County shall not issue a certificate of occupancy for any habitable building until such building has been connected to an adequate water supply.
- F. The County shall not approve any development proposal until it has been determined that the provisions for water supply are adequate to accommodate the development and are in compliance with applicable regulations. The County may require the submission of information, as necessary, to evidence the availability of water of adequate quality and quantity and the method of supply of such water to support the new development.

#### **Section 17.516.15 Centralized Water Supply Systems.**

- A. Water shall be provided to new development by a centralized water service system when required by Table 17.501.15-1, when the boundary of a new development is located within 400 feet of an existing main line of a water system, or when otherwise required by the county when deemed reasonably necessary and when consistent with the Master Plan.
- B. The requirement for centralized water service established by subsection A of this section may be waived by the County when it is determined that due to special circumstances, enforcement of this requirement will result in unnecessary hardship to the applicant. To be considered for a waiver, the subject property or proposed lots may not be less than one acre in size if sewage disposal will be provided by individual sewage disposal systems (pursuant to Chapter 17.518, Sewage Disposal Standards). The granting of a waiver shall not create a detriment to the general health, safety and welfare of the public, any natural resources or the intent and purpose of these regulations.
- C. Design, Plan Review and Construction. The design, plan review, and construction of centralized water system infrastructure shall take place in accordance with the Standard Specifications for Public Works Construction (Orange Book) standards, State standards regarding water provision, and all other applicable local, State and Federal regulations. All new centralized water system infrastructure shall be reviewed and approved by the County Engineer. Improvement plans for new infrastructure shall be submitted to the county for review pursuant to Chapter 17.618, Improvement Plans.
- D. Level of Service. A centralized water system shall be designed to accommodate the total population of the proposed development and any additional development in the reasonably foreseeable future which may be served by the system.

#### **Section 17.516.20 Individual Wells.**

- A. Where centralized water service is not required or is unavailable, water shall be provided by individual wells.

- B. Design, Plan Review and Construction. The design, plan review, and construction of individual wells shall take place in accordance with State standards regarding water provision, the County's adopted building codes and all other applicable local, State and Federal regulations.
- C. New individual wells and associated components shall be reviewed and approved by the County Building Department staff. Plans for new infrastructure shall be submitted to the County for review in accordance with Building Department requirements. The Building Department may consult the County Engineer, as necessary, to complete their review.

**Section 17.516.25 Dedication/Relinquishment of Water Rights.** An applicant may be required, in accordance with County or State regulations, to dedicate or relinquish water rights to the County or State as reasonably necessary to insure adequate water supply for a proposed development, as a condition of approval of the development project. The amount of water rights shall be determined by the State Engineer.

**Section 17.516.30 Extension and Over-sizing of Infrastructure.** The County may require that centralized water system infrastructure be oversized or extended through an entire development project, to accommodate future development. When these requirements are utilized, an agreement may be entered into between the County and the developer for reimbursement for oversized or extended improvements. Such an agreement shall be made pursuant to Chapter 17.616, Development Agreements.

**Section 17.516.35 Easements.** Easements shall be dedicated by an applicant to accommodate all centralized water system infrastructure except individual service lines. All easements shall have a minimum width of 10 feet. A larger width may be required when unusual circumstances exist, such as topography or easements used for multiple utilities. The location and dimensions of required easements shall be determined by the Planning Director and County Engineer. Easements should be located along property lines whenever possible.



## CHAPTER 518

### SEWAGE DISPOSAL STANDARDS

#### SECTIONS:

17.518.00	Purpose
17.518.05	Applicability
17.518.10	General Provisions
17.518.15	Centralized Sewer Systems
17.518.20	Extension and Over-sizing of Infrastructure
17.518.25	Easements
17.518.30	Individual Sewage Disposal Systems

**Section 17.518.00 Purpose.** The purpose of Chapter 518, Sewage Disposal Standards, is to establish regulations and standards for the provision of sewage treatment and disposal to development.

**Section 17.518.05 Applicability.** The provisions of this chapter apply to sewage treatment and disposal and which requires approval or issuance of a permit by the county, including but not limited to:

- A. Public works projects;
- B. Subdivisions;
- C. Planned Unit Developments.
- D. Parcel Maps;
- E. Division into Large Parcel Maps;
- F. Special Use Permits;
- G. Building Permits;
- H. Projects which require a site plan, improvement plans, or development agreement.

#### **Section 17.518.10 General Provisions.**

- A. Provisions shall be made for sewage treatment and disposal to be provided to all new lots and habitable buildings which are part of new development.
- B. Sewage disposal shall be provided to new development by a centralized sewer system when required by Section 17.518.15. Where centralized service is not required or is unavailable, sewage disposal shall be provided by individual sewage disposal systems, pursuant to Section 17.518.30.

- C. Sewage disposal, including system design, construction and operation shall take place in compliance with all applicable local, state and federal regulations.
- D. The County shall not approve any development proposal until it has been determined that the provisions for sewage disposal are adequate to accommodate the development and are in compliance with applicable regulations. The County may require the submission of a demand study, geotechnical report, percolation test data or other information, as necessary, to make such determination.
- E. The County shall not issue a certificate of occupancy for any habitable building until such building has been connected to an adequate sewage disposal system.

**Section 17.518.15 Centralized Sewer Systems.**

- A. Sewage disposal shall be provided by centralized sewer system:
  - 1. to lots with an area less than one acre which are supplied water by wells.
  - 2. to manufactured home and RV parks which allow more than one unit per acre and which water is supplied by well(s).
  - 3. when required by Table 17.501.15-1, when the boundary of a new development is located within 400 feet of an existing main line of a centralized sewage disposal system, or when otherwise required by the county when deemed reasonably necessary and when consistent with the Master Plan.
- B. The requirement for provision of sewage disposal by centralized sewer system established by subsection A 3 of this section may be waived by the County when it has been determined that due to special circumstances, enforcement of this requirement will result in unnecessary hardship to the applicant. To be considered for a waiver, the subject property or proposed lots must be in compliance with the lot size requirements established by Section 17.518.30. The granting of a waiver shall not create a detriment to the general health, safety and welfare of the public, any natural resources, or the intent and purpose of these regulations.
- C. Design, Plan Review and Construction. The design, plan review, and construction of centralized sewer system infrastructure shall take place in accordance with the Standard Specifications for Public Works Construction (Orange Book) standards, State standards regarding sewage disposal, and all other applicable local, State and Federal regulations. All new infrastructure shall be reviewed and approved by the County Engineer. Improvement plans for new infrastructure shall be submitted to the county for review pursuant to Chapter 17.618, Improvement Plans.



map approved before January 1, 2000 and is served by a centralized water supply system.

- C. Any person who desires to construct, alter, repair or extend an individual sewage disposal system must first obtain the appropriate permit(s) from the County Building Department.
- D. Design, Plan Review and Construction. The design, plan review, and construction of individual sewage disposal systems shall take place in accordance with the County's adopted building codes, State standards regarding sewage disposal, and all other applicable local, State and Federal regulations.

New individual sewage disposal systems and associated components shall be reviewed and approved by the County Building Department staff. Plans for new infrastructure shall be submitted to the County for review in accordance with Building Department requirements. The Building Department may consult the County Engineer, as necessary, to complete their review.

The following information shall be provided with an application for a permit for an individual sewage disposal system and shall be considered during review: size and shape of the property, slope of natural and finished grades, soil type and classification, depth of ground water, and the proximity of existing or possible future water resources or water supply infrastructure. The Building Department may require additional information as deemed necessary.

- E. Only one building shall be connected to an individual sewage disposal system, unless otherwise allowed by applicable regulations and authorized by the County Engineer in writing. The County Engineer shall determine that the subject system and the size of the subject property is adequate to accommodate the additional usage, pursuant to applicable regulations.
- F. The location and installation of a individual sewage disposal system shall not create a detriment to the general health, safety and welfare of the public, any domestic water supply or any other natural resource.