

Division Four - Development Standards

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Article 400

DEVELOPMENT STANDARDS: TITLE AND CONTENTS

Sections:

110.400.00	Title
110.400.05	Contents

Section 110.400.00 Title. Division Four of Chapter 110, Development Code, is entitled Development Standards.

Section 110.400.05 Contents. Division Four consists of the following articles:

- (a) ARTICLE 400 DEVELOPMENT STANDARDS: TITLE AND CONTENTS
- (b) ARTICLE 402 DENSITY/INTENSITY STANDARDS
- (c) ARTICLE 404 LOT STANDARDS
- (d) ARTICLE 406 BUILDING PLACEMENT STANDARDS
- (e) ARTICLE 408 COMMON OPEN SPACE DEVELOPMENT
- (f) ARTICLE 410 PARKING AND LOADING
- (g) ARTICLE 412 LANDSCAPING
- (h) ARTICLE 414 NOISE AND LIGHTING STANDARDS
- (i) ARTICLE 416 FLOOD HAZARDS
- (j) ARTICLE 418 SIGNIFICANT HYDROLOGIC RESOURCES
- (k) ARTICLE 420 STORM DRAINAGE STANDARDS
- (l) ARTICLE 422 WATER AND SEWER RESOURCE REQUIREMENTS
- (m) ARTICLE 424 HILLSIDE DEVELOPMENT
- (n) ARTICLE 426 SCENIC AREAS (Reserved for Future ordinance)
- (o) ARTICLE 428 ALTERNATIVE ENERGY DEVELOPMENT INCENTIVES
(Reserved for Future Ordinance)
- (p) ARTICLE 430 RIVER CORRIDOR DEVELOPMENT (Reserved for Future Ordinance)

- (q) ARTICLE 432 OPEN SPACE STANDARDS
- (r) ARTICLE 434 REGIONAL DEVELOPMENT STANDARDS WITHIN
COOPERATIVE PLANNING AREAS AND ALL OF WASHOE COUNTY
- (s) ARTICLE 436 STREET DESIGN STANDARDS

[Amended by Ord. 919, provisions eff. 2/1/95; Ord. 939, provisions eff. 11/1/95; Ord 949, provisions eff. 5/1/96; Ord. 1112, provisions eff. 2/15/01; Ord. 1200, provisions eff. 6-6-03.]

Article 402

DENSITY/INTENSITY STANDARDS

[This Article amended in its entirety by Ord. 876, provisions eff. 7/7/93; Ord. 1004, provisions eff. 1/30/98.]

Sections:

110.402.00	Purpose
110.402.05	Standards
110.402.10	Heights: Special Provisions

Section 110.402.00 Purpose. The purpose of this article, Article 402, Density/Intensity Standards, is to set forth the regulations governing the density and intensity of uses on a parcel.

Section 110.402.05 Standards. Part One of Table 110.406.05.1 sets forth the standards for the following:

- (a) The maximum number of dwelling units per gross acre; and
- (b) The maximum heights of buildings and structures.

Section 110.402.10 Heights: Special Provisions.

- (a) **Exceptions.** The maximum height standards do not apply to the following:
 - (1) Church spires, belfries, cupolas, domes, chimneys, flues, antennas, satellite dishes, or water towers, silos, windmills and wind machines, provided that measured height of the structure is limited or the structure is placed on the property to avoid falling across any property line;
 - (2) Parapet walls extending four (4) feet or less above the limiting height on which they rest;
 - (3) Bulkheads, elevator towers, one-story penthouses, water tanks or similar structures, provided that the aggregate floor area of such structures is not greater than one-half (1/2) of the total roof area; and
 - (4) Height of structures for development occurring in the Tahoe area shall be the most restrictive of Tahoe Regional Planning Agency standards and Washoe County standards.
- (b) **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.
- (c) **Accessory Buildings.** The heights for accessory buildings are as set forth in Article 306, Accessory Uses and Structures.

- (d) Antennas. The heights for antennas are as set forth in Article 324, Communication Facilities.
- (e) Additional Restrictions in Navigable Airspace. In addition to the provisions of this article, no structure shall be erected, constructed, altered or maintained, and no tree shall be allowed to grow to height in excess of the applicable height limit established by Federal Aviation Regulation (FAR) Part 77 - "Objects Affecting Navigable Airspace" unless the Federal Aviation Administration (FAA) issues a determination of "No Hazard to Air Navigation" and the Airport Authority of Washoe County determines the structure does not place restrictions on airport operations and Washoe County determines it is otherwise safe and in the public interest.

Article 404

LOT STANDARDS

[This Article amended in its entirety by Ord. 876, provisions eff. 7/7/93; Ord. 899, provisions eff. 5/31/94.]

Sections:

110.404.00	Purpose
110.404.05	Lot Standards
110.404.10	Reductions in Size
110.404.15	Double Counting Areas
110.404.20	Combining Lots
110.404.25	Common Open Space Development

Section 110.404.00 Purpose. The purpose of this article, Article 404, Lot Standards, is to set forth the regulations governing the size and configuration of new lots to be created under the provisions of Division Six, Subdivision Regulations.

Section 110.404.05 Lot Standards. The minimum lot area and lot width are set forth in Part Two of Table 110.406.05.1. The minimum lot area is limited by the ability to maintain the dwelling unit per acre standard set forth in Part One of Table 110.406.05.1.

Section 110.404.10 Reductions in Size. No lot or parcel shall be reduced in area so as to be less in any dimension than is required by the requirements of the regulatory zone in which the lot or parcel is located. Parcels created for public agencies and for utilities regulated by the Public Utilities Commission are exempt from this requirement. Upon cessation of the use, the parcel created for the public agency or utility regulated by the Public Utilities Commission shall be reverted to acreage or abandoned in accordance with the Nevada Revised Statutes. Parcels previously created for this purpose shall be recognized under and subject to the provisions of this section.

[This Section amended by Ord. 1065, provisions eff. 7/1/99.]

Section 110.404.15 Double Counting Areas. No portion of any lot or parcel which is part of the required area for an existing building shall be used as a part of the required area of any other lot, parcel or existing building.

Section 110.404.20 Combining Lots. If two (2) or more lots must be combined to meet the minimum lot area or lot width requirements of this article, the lots shall be legally merged into one (1) lot before a building permit will be issued.

Section 110.404.25 Common Open Space Development. The provisions of Section 110.404.05, Lot Standards, may be modified pursuant to Article 408, Common Open Space Development. This modification may include the reduction in minimum lot sizes as long as the overall density is not increased beyond that permitted in a specific regulatory zone.

Article 406

BUILDING PLACEMENT STANDARDS

Sections:

110.406.00	Purpose
110.406.05	General
110.406.10	TRPA Standards
110.406.15	Double Counting Yards
110.406.20	Combining Lots
110.406.25	Unobstructed Yards
110.406.30	Front Yards
110.406.35	Side Yards
110.406.40	Rear Yards
110.406.45	Lot Width
110.406.50	Fences, Walls or Perimeter Planting

Section 110.406.00 Purpose. The purpose of this article, Article 406, Building Placement Standards, is to set forth the regulations governing the placement of buildings on a lot.

Section 110.406.05 General. The yard requirements and setback dimensions are set forth in Part Three of Table 110.406.05.1. These requirements may be modified pursuant to Article 408, Common Open Space Development. All required yard setbacks are measured from the property line with the following exception: when an access easement traverses a portion of a property and has a total width of twenty (20) feet or more, or is maintained by the County, the required yard setback is measured from the easement edge closest to the proposed structure.

Table 110.406.05.1

STANDARDS

Part One: Density/Intensity Standards										
	LDR	MDR	HDR	LDS	LDS 2	MDS	MDS 4	HDS	LDU	MDU
Dwelling Unit Per Acre (du/ac)	0.1	0.2	0.4	1	2	3h	4h	7a	10b	21c
Height (feet)	35	35	35	35	35	35	35	35	40	70

Part One: Density/Intensity Standards (continued)										
	HDU	GC	NC	TC	I	PSP	PR	OS	GR	GRA
Dwelling Unit Per Acre (du/ac)	42c	n/a	5	n/a	n/a	n/a	n/a	n/a	0.025	0.025
Height (feet)	70	80	60	45	65	65	65	n/a	35	35

Notes:

- a - 7 dwelling units per acre single-family detached; 9 dwelling units per acre for attached single-family and mobile home parks
- b - 10 dwelling units per acre for single-family detached; 14 dwelling units per acre for multi-family and 12 units per acre for mobile home parks
- c - Multi-family
- h - 3 dwelling units per acre single-family detached; 5 dwelling units per acre for both single-family attached and manufactured home parks within areas designated as Trailer (TR) Overlay zone in effect prior to May 26, 1993

Part Two: Lot Size										
	LDR	MDR	HDR	LDS	LDS 2	MDS	MDS 4	HDS	LDU	MDU
Minimum Lot Area (1,000's of sq. ft. unless otherwise indicated)	8ac	4ac	2ac	35	17.5	12	9	5	3.7d	8e
Minimum Lot Width (feet)	250	200	150	120	100	80	70	60	60	60

Part Two: Lot Size (continued)										
	HDU	GC	NC	TC	I	PSP	PR	OS	GR	GRA
Minimum Lot Area (1,000's of sq. ft. unless otherwise indicated)	8f	10	10	10	10	n/a	n/a	n/a	40ac	40ac
Minimum Lot Width (feet)	60	75	75	100	100	100	n/a	n/a	660	660

Notes:

- d - 3,700 square feet for single-family detached and 8,000 square feet with two (2) attached single-family dwelling units
- e - 3,700 square feet for single-family detached and 8,000 square feet with four (4) multi-family units
- f - 3,700 square feet for single-family detached and 8,000 square feet with eight (8) multi-family units
- g - 40 acres nominally = 1/16 section

Table 110.406.05.1 (continued)

STANDARDS

Part Three: Yard and Setback Dimensions										
	LDR	MDR	HDR	LDS	LDS 2	MDS	MDS 4	HDS	LDU	MDU
Front Yard (feet)	30	30	30	30	30	20	20	20	15	15
Side Yards (feet)	50	15	15	12	10	8	7	5	5	5
Rear Yard (feet)	30	30	30	30	30	20	20	20	10	20

Part Three: Yard and Setback Dimensions (continued)										
	HDU	GC	NC	TC	I	PSP	PR	OS	GR	GRA
Front Yard (feet)	20	10	15	20	15	20	20	n/a	30	30
Side Yards (feet)	5	10	15	10	10	15	15	n/a	50	50
Rear Yard (feet)	20	10	20	10	15	20	20	n/a	30	30

Source: Sedway Cooke Associates

[Amended by Ord. 939, provisions eff. 11/1/95; Ord. 1023, provisions eff. 7/1/98; Ord. 1140, provisions eff. 12/31/01; Ord. 1290, provisions eff. 3/24/06; Ord. 1447, provisions eff. 9/9/10; Ord. 1458, provisions eff. 2/4/11; Ord. 1475, provisions eff. 1/12/12.]

Section 110.406.10 TRPA Standards. Requirements for development occurring in the Tahoe area including, but not limited to, building placement standards shall be the most restrictive of Tahoe Regional Planning Agency standards and Washoe County standards.

Section 110.406.15 Double Counting Yards. No required yard or open space around any building shall be considered a yard or open space for any other building on an adjoining lot or parcel.

Section 110.406.20 Combining Lots. If two (2) or more lots must be combined to meet the minimum yard requirements of this article, the lots shall be legally merged into one (1) lot before a building permit will be issued.

[Amended by Ord. 876, provisions eff. 7/7/93.]

Section 110.406.25 Unobstructed Yards. Any yard required by the Development Code shall be open and unobstructed from the ground to the sky except as provided in this article.

Section 110.406.30 Front Yards. Front yards shall comply with the provisions of this section.

- (a) **Through Lots.** On through lots, either end lot line may be considered the front line, except when the access would be from a street classified as a collector or an arterial. The minimum rear yard shall not be less than the required front yard in the regulatory zone in which such lot is located. After development of the lot has occurred, the yard chosen as the front yard shall remain the front yard for all further development on the lot.
- (b) **Interior Lots.** On any interior lot in any residential land use category or, in General Rural or General Rural Agricultural land use categories, the front yard requirement shall be fifteen (15) feet where the slope of the front half of the lot is greater than a two (2) foot rise (or fall) above (or below) the established street

grade for every ten (10) feet of horizontal distance. Plans submitted must be specific enough to establish conformance with these provisions.

- (c) Corner Lots. On a corner lot, all yards abutting streets, other than collectors or arterials, shall be considered as front yards. Corner lots are required to have a side yard.
- (d) Obstructions to Vision. There shall be no fences or other obstruction to vision more than eighteen (18) inches higher than curb level within the visibility triangle defined in Section 110.412.30, Public Safety.
- (e) Architectural Features. Cornices, canopies, chimneys, eaves or other similar architectural features may extend into a required front yard not to exceed two (2) feet.
- (f) Detached Garages. Detached garages may be located behind the required front setback.
- (g) Decks. Decks which are less than eighteen (18) inches in height from the finished grade are not counted as a structure for front yard setback purposes.

[Amended by Ord. 876, provisions eff. 7/7/93; Ord. 939, provisions eff. 11/1/95; Ord. 899, provisions eff. 5/31/94; Ord. 1023, provisions eff. 7/1/98; Ord. 1475, provisions eff. 1/12/12.]

Section 110.406.35 Side Yards. Side yards shall comply with the provisions of this section.

- (a) Outside Stairs. Outside stairs or landing places, if unroofed or unenclosed, may extend into a required side yard for a distance not to exceed three (3) feet.
- (b) Architectural Features. Cornices, canopies, chimneys, eaves or other similar architectural features may extend into a required side yard not to exceed two (2) feet.
- (c) Accessory Structures. Accessory structures may be located in a side yard as provided in Article 306, Accessory Uses and Structures, except that a guest building shall not be located in a side yard.
- (d) Decks. Decks which are less than eighteen (18) inches in height from the finished grade are not counted as a structure for side yard setback purposes.
- (e) Prior Zoning. Side yard requirements for lots created under the zoning in effect prior to May 26, 1993, may use the setbacks of the land use category comparable to the parcel size.

[Amended by Ord. 876, provisions eff. 7/7/93; Ord. 939, provisions eff. 11/1/95; Ord. 1023, provisions eff. 7/1/98.]

Section 110.406.40 Rear Yards. Rear yards shall comply with the provisions of this section.

- (a) Outside Stairs. Outside stairs or landing places, if unroofed or unenclosed, may extend into a required rear yard for a distance of not to exceed five (5) feet.

- (b) Architectural Features. Cornices, canopies, chimneys, eaves or other similar architectural features may extend into a required rear yard not to exceed two (2) feet.
- (c) Accessory Structures. Accessory structures may be located in a rear yard as provided in Article 306, Accessory Uses and Structures.
- (d) Decks. Decks which are less than eighteen (18) inches in height from the finished grade are not counted as a structure for rear yard setback purposes.

[Amended by Ord. 876, provisions eff. 7/7/93; Ord. 939, provisions eff. 11/1/95.]

Section 110.406.45 Lot Width.

- (a) Modification of Standards. The Community Development Director may modify the standards of lot width to a lesser standard when, in his determination, there are compelling environmental considerations of topography or geology which necessitate a minor variation and do not result in parcel configurations inconsistent with the intent of these regulations. Such constraints may include: hillsides, creeks, wetlands, faults, rock outcroppings or other major constraints. The modification of the standard must facilitate superior building sites. This modification may not be granted for subsequent divisions of the same parcel.
- (b) Flag Lots. The “pole” portion of any lot shall not be included either in the required minimum lot size or width calculations. The “pole” portion shall be a minimum of twenty (20) feet in width and a maximum of thirty (30) feet in width.

[Added by Ord. 1140, provisions eff. 12/31/01.]

Section 110.406.50 Fences, Walls or Perimeter Planting.

- (a) Residential Use Types. The maximum height for fences, walls or perimeter planting is limited to four-and-one-half (4.5) feet in the required front yard setback except as noted by Section 110.406.30, Front Yards. The maximum height for fences, walls or perimeter planting for the remainder of the residential property is six (6) feet. Where two (2) or more of a property's frontages constitute front yards on a corner lot, one (1) 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 or perimeter planting can have a maximum height of six (6) feet as long as such fences, walls or perimeter planting are located at least ten (10) feet from the modified side yard property line. Barbed wire or razor wire livestock fencing in front yards is allowed only on lots with a size greater than one (1) acre.
- (b) Commercial and Industrial Use Types. The fences, walls or perimeter planting in commercial and industrial development adjoining residential uses shall be at least six (6) feet but not more than eight (8) feet in height, in accordance with Article 412, Landscaping. The fences, walls or perimeter planting adjoining a street may be a maximum of six (6) feet in height. The fences, walls or perimeter planting adjoining non-residential uses may be a maximum of eight (8) feet in height.
- (c) Specialty Fences. Specialty fences are permitted in all regulatory zones with the following provisions:

- (1) A specialty fence shall only be for the purposes of enclosing a tennis court, racquetball court, basketball court or other court-type recreational activity, and for exotic animals when a fence is pursuant to the issuance of a permit from the Washoe County Exotic Animal Board.
- (2) A specialty fence shall comply with the following provisions:
 - (i) The court or enclosure for which the fence is erected shall be located entirely to the side or rear of the main structure permitted on the property.
 - (ii) The fence may not be greater than ten (10) feet in height.
 - (iii) The fence may not prevent viewing through the fence. It may not be solid.
 - (iv) The fence must be of a color that blends with the background and in no instance may it be of a reflective material.
 - (v) The fence shall not be located closer than five (5) feet to the side or rear property lines.
- (d) Entry Gate and Entry Columns. An entry gate and entry columns are permitted in all regulatory zones and are subject to the following provision:
 - (a) An entry gate and entry columns may exceed the allowable height of the fencing on adjacent fence panels by a maximum of eighteen (18) inches. Lighting fixtures may be placed on top of the entry column in excess of the height limitation.

[Added by Ord. 939, provisions eff. 11/1/95. Amended by Ord. 959, provisions eff. 7/26/96; Ord. 1023, provisions eff. 7/1/98.]

[Section 110.406.45 entitled "Visual Obstructions" amended by Ord. 876, provisions eff. 7/7/93; Ord. 899, provisions eff. 5/31/94 and repealed by Ord. 939, provisions eff. 11/1/95.]

Article 408

COMMON OPEN SPACE DEVELOPMENT

[This Article amended in its entirety by Ord. 876, provisions eff. 7/7/93.]

Sections:

110.408.00	Purpose
110.408.05	Applicability
110.408.10	Applications
110.408.15	Non-Residential Uses
110.408.20	Density and Intensity
110.408.25	Lot and Yard Standards
110.408.30	Site Analysis to Determine Common Open Space and Lot Size Variations
110.408.35	Roads
110.408.40	Parking
110.408.45	Conditions of Approval

Section 110.408.00 Purpose. The purpose of this article, Article 408, Common Open Space Development, is to set forth regulations to permit variation of lot size, including density transfer subdivisions, in order to preserve or provide open space, protect natural and scenic resources, achieve a more efficient use of land, minimize road building, and encourage a sense of community.

Section 110.408.05 Applicability. Common open space development may be allowed in any residential land use category or any general, office or tourist commercial regulatory zone.

Section 110.408.10 Applications. If the provisions of this article are utilized, the application for a tentative subdivision map or a parcel map, as provided in Division Six, shall state that a common open space development is proposed.

Section 110.408.15 Non-Residential Uses. Non-residential uses that serve the residents of a common open space development may be allowed provided they are allowed by, and meet the requirements of, Article 302, Allowed Uses, and are designed to be an integral part of the project.

Section 110.408.20 Density and Intensity.

- (a) **Residential.** The total number of dwelling units in the proposed common open space development shall not exceed the total number of dwelling units allowed by the underlying regulatory zones(s). The gross site area may include more than one (1) parcel.
- (b) **Non-Residential.** The total amount of non-residential space shall not exceed the amount of space allowed by Article 106, Regulatory Zones, or Article 402, Density/Intensity Standards. The amount of non-residential space may be further

restricted if the Planning Commission finds that such restriction is necessary to preserve the primary residential character of the development.

- (c) General. All development shall comply with the height standards in Table 110.406.05.1, Standards.

Section 110.408.25 Lot and Yard Standards. The complete common open space development must comply with the minimum lot width, front yard setbacks, side yard setbacks, and rear yard setbacks in Table 110.406.05.1, Standards, or as an alternative, typical building envelopes shall be shown on the tentative subdivision map or parcel map where these standards are proposed to be varied below the minimum standard.

Section 110.408.30 Site Analysis to Determine Common Open Space and Lot Size Variations. A site analysis showing development opportunities and constraints shall be prepared as a key consideration, along with the project design objectives, to determine the total area covered by lots and roads, lot areas, and the total area to be designated as common open space. The site analysis shall include information and maps, including a site opportunities and constraints map, describing all significant physical and contextual features or factors which may affect the development of the property. The elements of the site analysis shall include, as a minimum, the following information:

- (a) Location Map. A general location map providing the context of location and vicinity of the site.
- (b) Land Use. Current and planned land use on the site and adjacent current, planned and approved, but unbuilt land uses.
- (c) Existing Structures. A description of the location, physical characteristics, condition and proposed use of any existing structures.
- (d) Existing Vegetation. A description of existing vegetation, including limits of coverage, and major tree sizes and types. In the instance of heavily wooded sites, typical tree sizes, types and limits of tree coverage may be substituted.
- (e) Prevailing Winds. An analysis of prevailing winds.
- (f) Topography. An analysis of slopes on the site using a contour interval of five (5) feet, or at a contour interval appropriate for the site and agreed to by the Director of Community Development.
- (g) Soil. An analysis of the soil characteristics of the site using Soil Conservation Service (SCS) information.
- (h) Natural Drainageways. Identification of natural drainageways on and adjacent to the site.
- (i) Wetlands and Water Bodies. Identification of existing or potential wetlands and water bodies on the site.
- (j) Flood Hazards. Identification of existing and potential flood hazards using Federal Emergency Management Agency (FEMA) information.
- (k) Seismic Hazards. Identification of seismic hazards on or near the site, including location of any Holocene faults.

- (l) Avalanche Hazards. An analysis of avalanche and other landslide hazards.
- (m) Sensitive Habitat and Migration Routes. An analysis of sensitive habitat areas and migration routes.
- (n) Significant Views. A description and analysis of all on and off site significant views.
- (o) Easements. A description of the type and location of any easements on the site.
- (p) Utilities. A description of existing or available utilities, and an analysis of appropriate locations for water, power, sanitary sewer and storm water sewer facilities.
- (q) Appropriate Access Points. An analysis of appropriate access points based upon existing and proposed streets and highways and site opportunities and constraints.
- (r) Other Information. All other information deemed appropriate and necessary by the Director of Community Development.

Section 110.408.35 Roads. To the extent possible, common roads and driveways shall be used for access. The roads shall be aligned to follow natural features and topography where possible.

Section 110.408.40 Parking. The parking requirements of Article 410, Parking and Loading, shall apply.

Section 110.408.45 Conditions of Approval. Provisions for the common open space development shall be conditioned upon approval of the tentative subdivision or parcel map.

- (a) Three-Year Maintenance Plan. Provisions shall be made to monitor and maintain, for a period of three (3) years regardless of ownership, a maintenance plan for the common open space area. The maintenance plan for the common open space area shall, as a minimum, address the following:
 - (1) Vegetation management;
 - (2) Watershed management;
 - (3) Debris and litter removal;
 - (4) Fire access and suppression;
 - (5) Maintenance of public access and/or maintenance of limitations to public access; and
 - (6) Other factors deemed necessary by the Planning Commission or the Board of County Commissioners.
- (b) Permanent Preservation and Maintenance. Provisions shall be made for the permanent preservation and ongoing maintenance of the common open space and other common areas using a legal instrument acceptable to the County.

- (c) Screening and Buffering of Adjoining Development. Provisions shall be made to assure adequate screening and buffering of existing and potential developments adjoining the proposed common open space development.
- (d) Common Open Space Restrictions. Designated common open space shall not include areas devoted to public or private vehicular streets or any land which has been, or is to be, conveyed to a public agency via a purchase agreement for such uses as parks, schools or other public facilities.

Article 410

PARKING AND LOADING

Sections:

110.410.00	Purpose
110.410.05	Applicability of Article
110.410.10	Required Parking Spaces
110.410.15	Special Parking Provisions
110.410.20	Location of Required Parking Spaces
110.410.25	Design of Parking Areas
110.410.30	Truck Parking and Loading
110.410.35	Modification of Standards

Section 110.410.00 Purpose. The purpose of this article, Article 410, Parking and Loading, is to regulate parking and loading in order to lessen traffic congestion and contribute to public safety by providing sufficient on-site areas for the maneuvering and parking of motor vehicles that are attracted to and generated by land uses within the County.

Section 110.410.05 Applicability of Article. The provisions of this article shall apply whenever:

- (a) A new structure is constructed;
- (b) An existing structure, including a legal nonconforming structure, is enlarged for any purpose, the parking and loading requirements for the entire structure shall apply; or
- (c) The intensity of use, or expansion of use is changed, the parking and loading requirements for the new use shall apply.

[Amended by Ord. 876, provisions eff. 7/7/93.]

Section 110.410.10 Required Parking Spaces. Off-street parking spaces shall be provided in the quantities set forth in Table 110.410.10.1 through Table 110.410.10.5.

- (a) Description of Use Types. The use types referred to in Table 110.410.10.1 through Table 110.410.10.5 are defined in Article 304, Use Classification System.
- (b) Requirements Cumulative. Where Table 110.410.10.1 through Table 110.410.10.5 set forth more than one (1) requirement for a given use type, those requirements shall be cumulative.
- (c) Spaces Based on Square Footage. The square footage requirements used in Table 110.410.10.1 through Table 110.410.10.5 to calculate parking spaces refer to the total enclosed areas of all buildings on the lot, but excludes the area of spaces having a height of less than seven (7) feet and the area used exclusively for parking and loading.

- (d) Spaces Based on Employees. The employee requirements used in Table 110.410.10.1 through Table 110.410.10.5 to calculate parking spaces refer to the maximum number of employees who could be working at one time when the facility is operating at full capacity.
- (e) Rounding Off Numbers. Whenever the computation of the number of off-street parking spaces required by Table 110.410.10.1 through Table 110.410.10.5 results in a fractional parking space, one (1) additional parking space shall be required for a fractional space of one-half (1/2) or more. A fractional space of less than one-half (1/2) shall not be counted.

Table 110.410.10.1

OFF-STREET PARKING SPACE REQUIREMENTS (Residential Use Types)
(See Section 110.410.10 for explanation)

Residential Use Types (Section 110.304.15)	Spaces Required
Family Residential	
Attached Accessory Dwelling	1 per attached accessory dwelling unit, in addition to other required spaces
Detached Accessory Dwelling	1 per detached accessory dwelling unit, in addition to other required spaces
Detached Accessory Structure	None
Duplex	2 per dwelling unit, 1 of which must be in an enclosed garage
Fabricated Home	*2 per fabricated home
Multi Family	1.6 for 1 bedroom units, 2.1 for 2 bedroom and larger units; 1 of which must be in an enclosed garage or carport
Single Family Attached	2 per dwelling unit, 1 of which must be in an enclosed garage
Single Family Detached	2 per dwelling unit, 1 of which must be in an enclosed garage
Manufactured Home Parks	1.5 per manufactured home, plus 1 per 5 units for guest parking
Group Home	.25 per bed, plus 1 per employee during peak employment shift

Note: * = Article 312, Fabricated Housing, may require 1 parking space to be in an enclosed garage or carport.

Table 110.410.10.2

OFF-STREET PARKING SPACE REQUIREMENTS (Civic Use Types)
(See Section 110.410.10 for explanation)

Civic Use Types (Section 110.304.20)	Spaces Required		
	Per 1,000 Square Feet Building Space	Per Employee During Peak Employment Shift	Other
Administrative Services	4		
Child Care			
Child Daycare	1 if assembly hall included	1	1 off-street loading space for every 8 students
Family Daycare			1 in addition to any other required spaces
Large-Family Daycare		1	1 off-street loading space for every 8 students
Community Center	5	1	
Convalescent Services		1	.25 per bed
Cultural and Library Services	3	1	
Education			
College/University		1	.5 per student of driving age
Elementary/Secondary		1	.25 per student of driving age
Group Care		1	.25 per bed
Hospital Services		1	.5 per bed
Major Services and Utilities			
Major Public Facilities		As specified by use permit	
Utility Services		As specified by use permit	
Nature Center		As specified by use permit	
Parks and Recreation			
Active Recreation		1	
Passive Recreation		1	
Postal Services	2	1	
Public Parking Services		1	
Religious Assembly			1 per 3 seats or 72 lineal inches of pew space plus 1 per 300 square feet of additional public space
Safety Services		1	

Table 110.410.10.3

OFF-STREET PARKING SPACE REQUIREMENTS (Commercial Use Types)
(See Section 110.410.10 for explanation)

Commercial Use Types (Section 110.304.25)	Spaces Required		
	Per 1,000 Square Feet Building Space	Per Employee During Peak Employment Shift	Other
Administrative Offices	4	1	
Adult Entertainment	5	1	
Animal Sales and Services			
Commercial Kennels		1	.25 per animal at design capacity
Commercial Stables		1	.25 per horse at design capacity
Grooming and Pet Stores	2.5	1	
Pet Cemeteries		1	
Veterinary Services, Agricultural	2	1	
Veterinary Services, Pets	4	1	
Automotive and Equipment			
Automotive Repair		1	3 per service bay
Automotive Sales and Rentals	.5	1	
Cleaning	2	1	
Commercial Parking		1	
Equipment Repair and Sales	2	1	
Fabricated Housing Sales	.5	1	
Storage of Operable Vehicles		1	
Truck Stops	4	1	
Building Maintenance Services	2		
Continuum of Care Facilities, Seniors		As specified by use permit	As specified by use permit
Commercial Antennas			1 per antenna tower
Commercial Centers (All Types)			Less than 15,000 square feet: 5 spaces per 1,000 square feet; 15,000 to 400,000 square feet: 4 spaces per 1,000 square feet; more than 400,000 square feet: 5 spaces per 1,000 square feet
Commercial Educational Services		1	.5 per student
Commercial Recreation			
Commercial Campground Facilities		1	
Destination Resorts		1	1 per room
Indoor Entertainment		1	1 per 3 seats
Indoor Sports and Recreation	5	1	
Limited Gaming Facilities	4	1	

Table 110.410.10.3 (continued)

OFF-STREET PARKING SPACE REQUIREMENTS (Commercial Use Types)
(See Section 110.410.10 for explanation)

Commercial Use Types (Section 110.304.25)	Spaces Required		
	Per 1,000 Square Feet Building Space	Per Employee During Peak Employment Shift	Other
Marinas		As specified by use permit	
Outdoor Entertainment		As specified by use permit	
Outdoor Sports and Recreation		As specified by use permit	
Outdoor Sports Club		As specified by use permit	
Unlimited Gaming Facilities	8	1	
Construction Sales and Services	2 for retail and 1 for storage area		
Convention and Meeting Facilities		1	1 per seat if not associated with lodging facilities; .5 per seat otherwise
Eating and Drinking Establishments			
Convenience	10	1	
Full Service	10	1	
Financial Services	3	1	
Funeral and Internment Services			
Cemeteries		1	
Undertaking		1	1 per 3 seats
Gasoline Sales and Service Stations		1	3 per service bay (service bay not credited as required space)
Helicopter Services			
Heliport		1	5 per helicopter space
Helistop		1	5 per helicopter space
Liquor Sales			
Off-Premises	4	1	
On-Premises	10	1	

Table 110.410.10.3 (continued)

OFF-STREET PARKING SPACE REQUIREMENTS (Commercial Use Types)
(See Section 110.410.10 for explanation)

Commercial Use Types (Section 110.304.25)	Spaces Required		
	Per 1,000 Square Feet Building Space	Per Employee During Peak Employment Shift	Other
Lodging Services			
Bed and Breakfast Inns		1	1 per room
Hostels		1	.25 per bed
Hotels and Motels		1	1 per room
Vacation Time Shares			1.6 for 1 bedroom units, 2.1 for 2 bedroom and larger units; 1 of which must be in an enclosed garage or carport
Medical Services	5	1	
Nursery Sales			
Retail	3	1	
Wholesale	3	1	
Personal Services	4		
Personal Storage		1	1 loading space per unit, internal access drives may be used
Professional Services	4	1	
Recycle Center			
Full Service Recycle Center	3	1	
Remote Collection Facility			3 spaces per collective device
Residential Hazardous Substance Recycle Center	3	1	
Repair Services, Consumer	2.5	1	
Retail Sales			
Comparison Shopping Centers	3	1	
Convenience	5	1	
Specialty Stores	3	1	
Secondhand Sales	2.5	1	
Transportation Services		1	

Table 110.410.10.4

OFF-STREET PARKING SPACE REQUIREMENTS (Industrial Use Types)
(See Section 110.410.10 for explanation)

Industrial Use Types (Section 110.304.30)	Spaces Required		
	Per 1,000 Square Feet Building Space	Per Employee During Peak Employment Shift	Other
Custom Manufacturing		1	2 per 1,000 square feet of showroom space
Energy Production		1	
General Industrial			
Heavy		1	
Intermediate		1	
Limited		1	
High Technology Industry		1	
Inoperable Vehicle Storage		1	2 per 1 acre of storage area
Laundry Services	2	1	
Mining Operations		1	
Petroleum Gas Extraction		1	
Salvage Yards		1	2 per 1 acre of storage area
Wholesaling, Storage and Distribution			
Heavy		1	.5 per 1,000 square feet of area open to the public
Light		1	.5 per 1,000 square feet of area open to the public

Table 110.410.10.5

OFF-STREET PARKING SPACE REQUIREMENTS (Agricultural Use Types)
(See Section 110.410.10 for explanation)

Agricultural Use Types (Section 110.304.35)	Spaces Required		
	Per 1,000 Square Feet Building Space	Per Employee During Peak Employment Shift	Other
Agricultural Processing		1	
Agricultural Sales	3	1	
Animal Production		1	
Animal Slaughtering		1	
Animal Slaughtering, Mobile		1	Off-street parking for the mobile facility
Crop Production		No requirement	
Forest Products		1	
Game Farm		1	
Produce Sales		1	3 spaces per produce stand

Sources: Sedway Cooke Associates and Washoe County Department of Community Development.

[Amended by Ord. 876, provisions eff. 7/7/93; Ord. 939, provisions eff. 11/1/95; Ord. 899, provisions eff. 5/31/94; Ord. 1041, provisions eff. 12/1/98; Ord. 1433, provisions eff. 3/5/10; Ord. 1485, provisions eff. 3/27/12.]

Section 110.410.15 Special Parking Provisions.

- (a) **Motorcycle and Bicycle Spaces.** For every four (4) motorcycle or six (6) bicycle parking spaces provided, a credit of one (1) parking space shall be given toward the requirements of this article, provided, however, that the credit for each shall not exceed one-fortieth (1/40) of the total number of automobile spaces required. If determined necessary by the County Engineer, bollards shall be installed to separate and protect motorcycle and bicycle spaces from automobile circulation. The minimum dimensions for motorcycle and bicycle spaces shall be as set forth in the following subsections:
- (1) Motorcycle spaces shall be a minimum of seven (7) feet in length and three (3) feet four (4) inches in width as illustrated in Figure 110.410.15.1.
 - (2) Bicycle spaces shall be a minimum of six (6) feet in length and two (2) feet six (6) inches in width as illustrated in Figure 110.410.15.2.
- (b) **Bicycle Storage.** In commercial and industrial projects with twenty (20) or more required parking spaces, a rack or other secure device for the purpose of storing and protecting bicycles from theft shall be installed. Such devices shall be provided with a minimum capacity of one bicycle per twenty (20) required parking

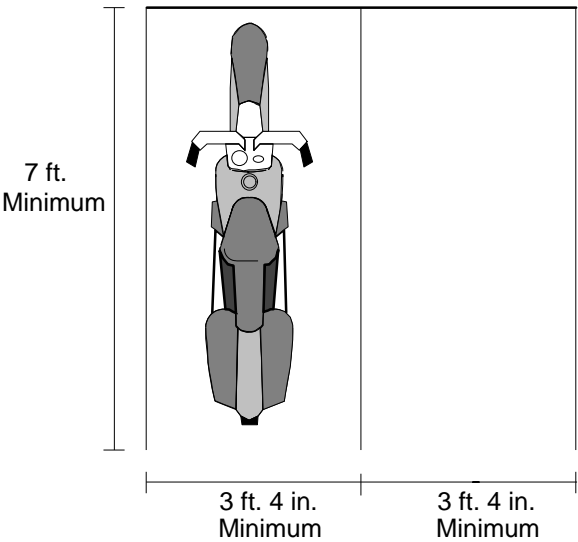
spaces and shall be located so as not to interfere with pedestrian or vehicular traffic.

- (c) Handicapped Parking. In any parking facility serving the public, parking for the handicapped shall be provided as set forth in this subsection.
- (1) Handicapped parking spaces shall be provided in accordance with Table 110.410.15.1. One (1) of every eight (8) required handicapped spaces shall be a van accessible space (a minimum of one (1) van accessible space per parking area).
 - (2) Handicapped parking spaces shall be a minimum of eight (8) feet in width and a minimum of eighteen (18) feet in length, as illustrated in Figure 110.410.15.3.
 - (3) Handicapped spaces shall be provided with an adjacent access aisle, as illustrated in Figure 110.410.15.3. Access aisles shall be a minimum of five (5) feet in width. Van access aisles shall be a minimum of eight (8) 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 (2) designated spaces.
 - (4) Handicapped parking spaces and access aisles shall be level.
 - (5) Handicapped spaces shall be located as near as possible to accessible building or site entrances and shall be located so as to provide convenient access to curb ramps.
 - (6) Each reserved handicapped parking space shall be designated with a stall sign displaying the International Symbol of Accessibility, as illustrated in Figure 110.410.15.4. Each stall sign shall be at least seventy (70) square inches in size. Spaces that are van accessible shall be designated as "Van Accessible."
 - (7) Each reserved handicapped parking space shall meet one (1) of the following stall markings requirements:
 - (i) Each handicapped parking space shall be painted solid blue with a white International Symbol of Accessibility; or
 - (ii) Each handicapped parking space shall be outlined in blue with a three (3) foot square International Symbol of Accessibility painted in a contrasting color.
 - (8) Each reserved handicapped parking space shall be marked with a sign warning drivers of the possibility of towing due to unauthorized use and providing information of recovering towed vehicles. Warning signs shall have minimum dimensions of seventeen (17) inches by twenty-two (22) inches and shall be labeled with lettering of at least one (1) inch in height.
 - (9) A minimum of ninety-eight (98) vertical inches of clearance shall be provided for van accessible spaces and the entire route from parking area ingress/egress points to the parking space.

- (10) As illustrated in Figure 110.410.15.5, a minimum vehicle overhang allowance of twenty-four (24) inches shall be provided between accessible routes and handicapped parking spaces. Said accessible routes shall, at all times, provide users with a minimum width of thirty-six (36) inches of throughway.

Figure 110.410.15.1

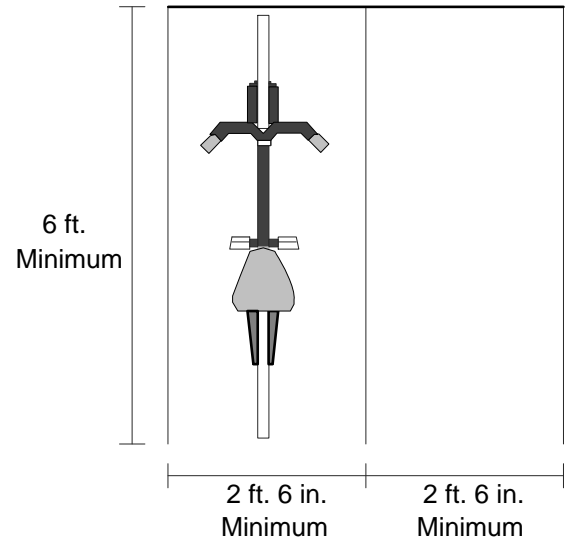
MOTORCYCLE PARKING DIMENSIONS



Source: Sedway Cooke Associates.

Figure 110.410.15.2

BICYCLE PARKING DIMENSIONS



Source: Sedway Cooke Associates.

Table 110.410.15.1

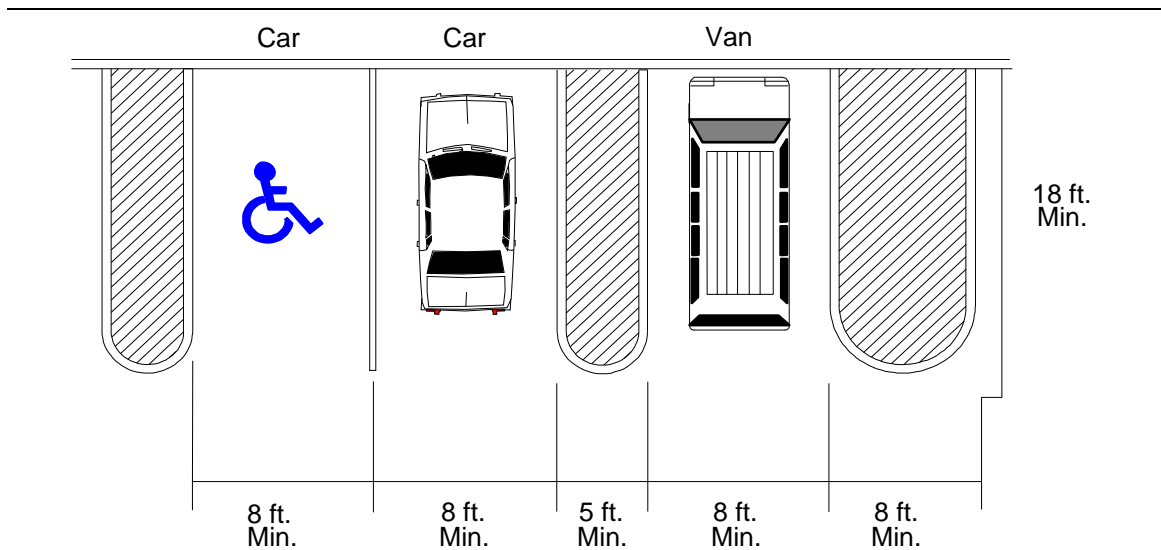
HANDICAPPED ACCESSIBLE SPACES

Spaces in Lot	Required Number of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2 percent of Total
1,001 and over	20 plus 1 per 100 above 1,000

Source: Washoe County Department of Community Development.

Figure 110.410.15.3

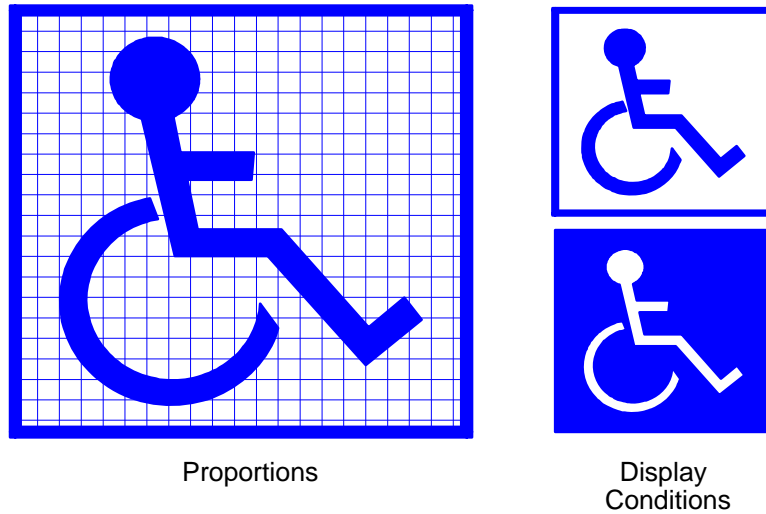
HANDICAPPED PARKING DIMENSIONS



Source: Sedway Cooke Associates.

Figure 110.410.15.4

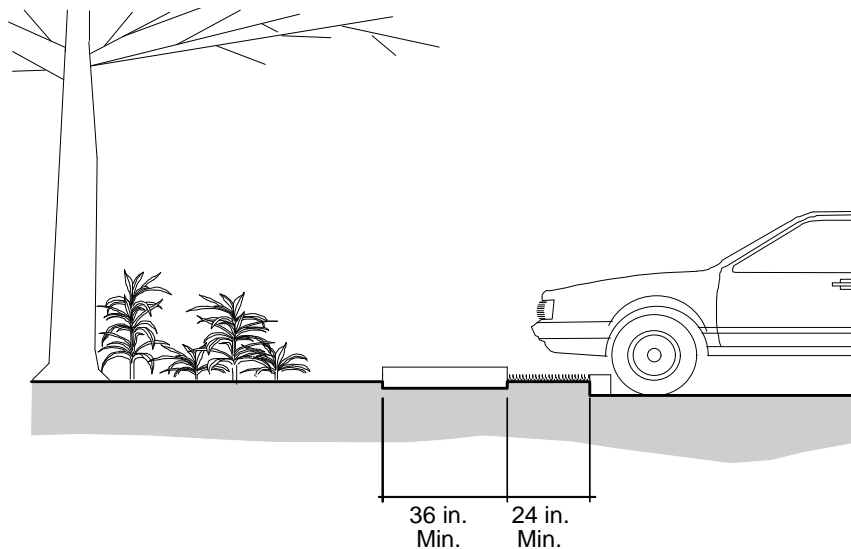
INTERNATIONAL SYMBOL OF ACCESSIBILITY



Source: Sedway Cooke Associates.

Figure 110.410.15.5

ACCESSIBLE ROUTES



Source: Sedway Cooke Associates.

[Amended by Ord. 876, provisions eff. 7/7/93.]

Section 110.410.20 Location of Required Parking Spaces. Required parking spaces shall be located as set forth in this section.

- (a) On Same or Adjacent Lot. For dwellings, motels, automobile-oriented services, and elementary, junior high, and high schools, required parking spaces shall be

provided on the same lot as the main building(s) or on an adjoining lot or lots zoned for the main use of the property.

- (b) Other Uses. For uses not listed in Subsection (a) above, required parking spaces shall be located within three hundred (300) feet of the lot on which the main building is located.
- (c) Adjacent and Off-site Lots. If an adjacent or off-site lot is used to satisfy the parking requirements, the lot(s) shall be secured in such a manner that will provide parking for the life of the project. This requirement does not preclude the use of reciprocal parking agreements, so long as the agreement is in a form acceptable to Washoe County.

Section 110.410.25 Design of Parking Areas. The design standards for off-street parking facilities shall be as set forth in this section.

- (a) Parking Lot Design. Parking lot design and dimensions shall be in accordance with Table 110.410.25.1 and Figure 110.410.25.1.
- (b) Automobile Parking Spaces: Size. Parking space sizes shall be built with an unistall design in accordance with Table 110.410.25.1 and Figure 110.410.25.1.
- (c) Wheel Stops. A wheel stop or curb, if used, shall be placed between two-and-one-half (2-1/2) and three (3) feet from the end of the parking space.
- (d) Striping and Marking. All parking stalls shall be striped and directional arrows shall be delineated in a manner acceptable to the County Engineer. All paint used for striping and directional arrows shall be of a type approved by the County Engineer.
- (e) Surfacing. All parking spaces, driveways and maneuvering areas shall be paved and permanently maintained with asphalt or cement. Bumper guards shall be provided when necessary to protect adjacent structures or properties as determined by the Director of Community Development.
- (f) Landscaping and Screening. All open parking areas shall be landscaped and/or screened according to the standards set forth in Article 412, Landscaping.
- (g) Lighting. All off-street parking areas within commercially-zoned projects shall be provided with exterior lighting which meets the following minimum standards:
 - (1) Proper illumination shall be provided for safety which, at a minimum, shall be the equivalent of one (1) foot candle average of illumination throughout the parking area;
 - (2) All lighting shall be on a time clock or photo-sensor system;
 - (3) Parking lot luminaries shall be high-pressure sodium vapor with 90-degree cut-off and flat lenses; and
 - (4) All lighting shall be designed to confine direct rays to the premises. No spillover beyond the property line shall be permitted, except onto public thoroughfares provided, however, that such light shall not cause a hazard to motorists.

- (h) Access. Access to parking areas shall be provided as follows:
- (1) Access driveways shall have a width of no less than twenty (20) feet;
 - (2) The parking area shall be designed so that a vehicle within the parking area will not have to enter a public street to move from one location to any other location within the parking area; and
 - (3) Vehicular access to arterial streets and highways will be permitted only in accordance with driveway locations and access design to be approved by the County Engineer.
- (i) Parking Aisles. The minimum dimensions for parking aisles (the space required for maneuvering vehicles within a parking lot) shall be as set forth in Table 110.410.25.1 and Figure 110.410.25.1.

Table 110.410.25.1

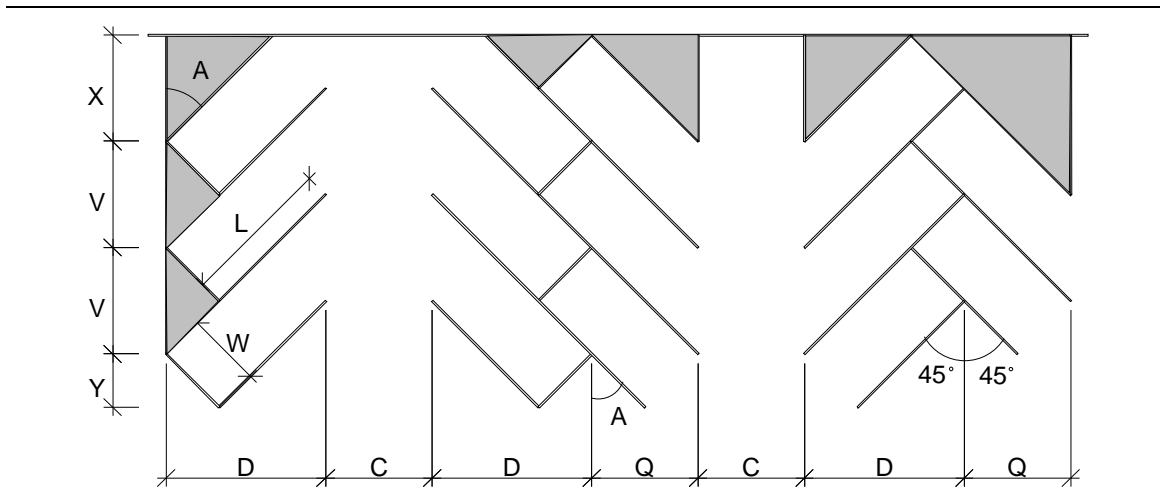
PARKING DIMENSIONS

A (Angle in Degrees)	C	D	L	Q	V	W	X	Y
0	12*	8.5	22	0.0	17.0	8.5	22.5	0.0
15	12*	12.6	17	4.4	32.8	8.5	16.4	2.2
30	12*	15.9	17	8.5	17.0	8.5	14.7	4.3
45	12*	18.0	17	12.0	12.0	8.5	12.0	6.0
60	16*	19.0	17	14.7	9.8	8.5	8.5	7.4
75	20	18.6	17	16.4	8.8	8.5	4.4	8.2
90	24	17.0	17	17.0	8.5	8.5	0.0	8.5

Notes: This table provides dimensions (in feet) of parking spaces and lots. The asterisk (*) indicates the minimum aisle width for two-way traffic is twenty (20) feet. The letters in the column headings refer to dimensions illustrated in Figure 110.410.25.1 and to the following: A = Angle of Parking Spaces; C = Width of Aisle; D = Depth of Stall; L = Length of Stall; Q = Interlock Length of Stall; V = Interlock Width of Stall; W = Width of Stall; X = End of Parking Stall Aisle Width; Y = Perpendicular Width of Stall; and $D = W \cos A + \sin A$; $Q = L \sin A$; $V = W/\sin A$; $X = L \cos A$; and $Y = Q/2$.

Source: Sedway Cooke Associates.

Figure 110.410.25.1
PARKING LOT LAYOUT



Source: Sedway Cooke Associates.

Section 110.410.30 Truck Parking and Loading. Parking and loading space for trucks shall be provided as set forth in this section.

- (a) **Commercial Uses.** For commercial uses, a minimum of one (1) space shall be provided for every use with three thousand (3,000) or more square feet of gross floor area. Additional parking and loading space may be required based on the operating characteristics of the individual use. In such instances, the number of spaces provided shall be determined by the Director of Community Development upon the submittal of site plans and general operation plans.
- (b) **Industrial Uses.** For industrial uses, spaces shall be provided as follows:
 - (1) One (1) space shall be required for each use having three thousand (3,000) to twenty thousand (20,000) square feet of gross floor area;
 - (2) Two (2) loading spaces shall be required for each use having twenty thousand (20,000) to forty thousand (40,000) square feet of gross floor area; and
 - (3) For each twenty thousand (20,000) square feet of gross floor area, or major fraction thereof, over forty thousand (40,000) square feet of gross floor area, one (1) loading space shall be required.
- (c) **Design Standards.** Design of required spaces shall be as follows:
 - (1) Spaces shall be a minimum twenty-five (25) feet in length and fifteen (15) feet in width, and shall have minimum height clearance of fourteen (14) feet;
 - (2) Spaces shall not interfere with vehicular circulation or parking, or with pedestrian circulation; and

- (3) On-site driveways and maneuvering areas may be used in lieu of one (1) of the off-street loading spaces required by this section, as long as maneuvering areas for delivery vehicles are provided.

Section 110.410.35 Modification of Standards. The requirements of this article may be modified by the Director of Community Development in cases in which, due to the unusual nature of the establishment proposed or the development proposal submitted for it, the standards set forth herein may be considered insufficient or excessive. The Director may consider the existence of special transit incentives and services, car pooling programs, and significant use of pedestrian and bicycle access. Decisions of the Director pursuant to this section may be appealed pursuant to Article 808, Administrative Permits.

Article 412

LANDSCAPING

Sections:

110.412.00	Purpose
110.412.05	Applicability
110.412.10	Exemptions
110.412.15	Required Plans
110.412.20	Water Conservation
110.412.25	Existing Vegetation
110.412.30	Public Safety
110.412.35	Residential Use Types
110.412.40	Civic and Commercial Use Types
110.412.45	Industrial and Agricultural Use Types
110.412.50	Parking and Loading Areas
110.412.55	Other Screening Requirements
110.412.60	Planting Standards
110.412.65	Irrigation Standards
110.412.70	General Requirements
110.412.75	Maintenance
110.412.80	Guarantee of Completion

Section 110.412.00 Purpose. The purpose of this article, Article 412, Landscaping, is to establish regulations for the development, installation and maintenance of landscaped areas within Washoe County, without inhibiting creative landscape design. The intent of these regulations is to protect the public health, safety and welfare by:

- (a) Increasing compatibility between residential, commercial and industrial land uses;
- (b) Enhancing the economic viability of the County and the quality of living for residents and visitors by creating an attractive appearance of development along streets and highways;
- (c) Reducing heat, glare, noise, erosion, pollutants and dust by increasing the amount of vegetation;
- (d) Preserving significant ecological communities, and desirable existing trees and vegetation best suited for the local microclimate; and
- (e) Maximizing water conservation through established conservation principles and practices, and through proper landscape and irrigation planning, design and management.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.05 Applicability. The provisions set forth in this article shall apply as follows:

- (a) New Development. This article applies to new development that requires permitting or review by the County.
- (b) Expanding Development. This article applies to expansion of floor area of existing development, except as otherwise provided below:
 - (1) If the expansion is less than fifty (50) percent, this article shall apply to the developable lot area associated with the proposed expansion only and the remainder of the use or structure shall be governed by regulations in force at the time of the original approval; and
 - (2) If the expansion or subsequent expansions cumulatively results in a fifty (50) percent or greater increase, the entire development shall be required to comply with this article, unless the Director of Community Development waives this requirement, in whole or in part, prior to the expansion.
- (c) Duplicate Ordinances. If the provisions of this article are in conflict with other ordinances or regulations, the more stringent limitation or requirement shall prevail to the extent of the conflict. The provisions of this article may be waived by the Director of Community Development for development in areas under the jurisdiction of the Tahoe Regional Planning Agency (TRPA) if the proposed landscaping and impervious surface coverage violates a TRPA Ordinance or Procedure.
- (d) Review of Extenuating Circumstances. The applicant may appeal to the Director of Community Development for special review resulting from extenuating circumstances or physical conditions on the proposed project site.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.10 Exemptions. The following uses are exempt from the provisions of this article:

- (a) Residential Use Types. The required front, side or rear yard areas of existing and new detached single family residential lots, unless front yard landscaping is required under any article found in Division Two, Area Plan Regulations, of the Washoe County Development Code.
- (b) Civic Use Types. Uses classified under the parks and recreation use type are exempt, except for parking and loading areas associated with these uses.
- (c) Commercial Use Types. Uses classified under the commercial recreation: outdoor sports club use type and nursery sales use type are exempt, except for parking and loading areas associated with these uses.
- (d) Industrial Use Types. No uses are exempt. However, the provisions of this article may be waived during the approval process for use types classified under energy production, mining operations, and petroleum gas extraction.
- (e) Agricultural Use Types. Uses classified under the animal production, crop production, forest products, game farms, and produce sales use types are exempt, except for parking and loading areas associated with these uses.

- (f) Open Space Regulatory Zones. Uses classified under the Open Space regulatory zone are exempt.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.15 Required Plans. A site plan, planting plan and an irrigation plan are required, and a soil analysis is strongly encouraged for all non-exempt development. These plans shall be prepared by a licensed landscape architect or other persons permitted to prepare landscaping and irrigation plans pursuant to Nevada Revised Statutes Chapter 623A and submitted to, and approved by, the Director of Community Development.

- (a) Site Plan. A site plan is required to ensure that the proposed landscape improvements are in conformance with the standards and requirements of this article. A copy of the approved site plan shall be kept on the project site until the project is inspected and accepted by the County. A site plan, drawn at a scale appropriate to the proposed project, including dimensions and distances, shall include at a minimum:
- (1) Location and configuration of proposed and existing buildings, and site improvements on a base map with existing and proposed topography; and
 - (2) Location and amount of proposed and existing parking spaces and other paved areas, public rights-of-way and impervious surfaces.
- (b) Planting Plan. A planting plan is required to ensure that the proposed plantings are in conformance with the standards and requirements of this article. The planting plan must include all necessary information to satisfy Section 110.412.60, Planting Standards, of this article. A planting plan shall include at a minimum:
- (1) Location, spacing, size, and genus and/or species of proposed plantings, and identification of existing plants;
 - (2) Existing vegetation, natural features and site improvements on adjoining properties within ten (10) feet of the property line; and
 - (3) Plant list which includes the following: quantity of proposed plants; existing plants to remain; number of proposed trees; number of existing trees to be preserved; amount of paved area; and the amount of turf.
- (c) Irrigation Plan. An irrigation plan is required to ensure sufficient and timely watering necessary for the survival of newly installed plants. A copy of the approved irrigation plan shall be kept on the project site until the project is inspected and accepted by the County. The irrigation plan must include all necessary information to satisfy Section 110.412.65, Irrigation Standards, of this article. An irrigation plan, drawn at a scale identical to the required site plan, shall include at a minimum:
- (1) Location, size and specifications of water source(s), water mains, meter(s), valves and the controller;
 - (2) Temporary or permanent water irrigation systems;

- (3) Specifications of irrigation equipment identified by manufacturer's name and equipment identification number; and
- (4) An approved backflow prevention device is required on all landscape irrigation systems.
- (d) Soil Analysis. A horticultural suitability analysis with appropriate recommendations is strongly encouraged to assist in proper selection of plant materials and soil amendment as necessary to enhance the health and growing capabilities of the plants.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.20 Water Conservation. To promote resource-efficient landscaping for the conservation of water and other natural resources, the following principles and practices are encouraged:

- (a) Practical turf areas;
- (b) The use of water-conserving plant material;
- (c) The grouping of plants with similar water requirements;
- (d) An irrigation system designed to meet plant needs;
- (e) The installation of permeable hard surfaces to encourage groundwater recharge and re-use, and to discourage run-off;
- (f) The use of water harvesting techniques;
- (g) The use of mulches;
- (h) The use of soil amendments based on soil analysis; and
- (i) The use of reclaimed water. When reclaimed water is available and when a distribution master plan indicating the availability of reclaimed water in the future has been adopted by either the County or a special district, the applicant shall incorporate the use of reclaimed water into the project design, except in the vicinity of any location where food is served or consumed.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

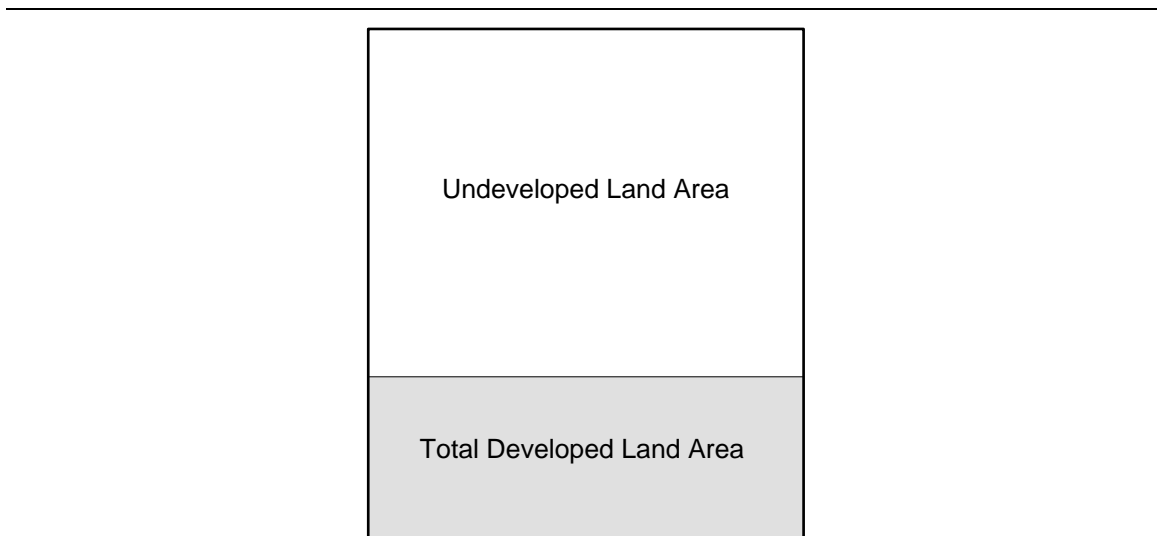
Section 110.412.25 Existing Vegetation. Existing vegetation within the total developed land area, as generally depicted in Figure 110.412.25.1, shall be preserved as set forth in this section and may contribute toward all landscaping required by this article, including:


- (a) Existing Vegetation. Existing vegetation and ecological communities shall be protected and preserved where appropriate and as feasible;
- (b) Preservation of Protected and Endangered Vegetation. Protected and endangered vegetation as defined in the Conservation Element of the Washoe County Master Plan; and

- (c) Preservation of Significant Trees. Existing trees with a caliper greater than six (6) inches, as measured fifty-four (54) inches from grade, shall be preserved if feasible. Protection measures, including non-disturbance around the drip-line and/or root zone, shall be incorporated into the landscaping plan.

Figure 110.412.25.1

TOTAL DEVELOPED LAND AREA



Note:  Area used in calculating the amount of required landscaping and screening.

Source: Sedway Cooke Associates.

[This Section added by Ord. 867, provisions eff. 5/27/93; Ord. 1447, provisions eff. 9/9/10.]

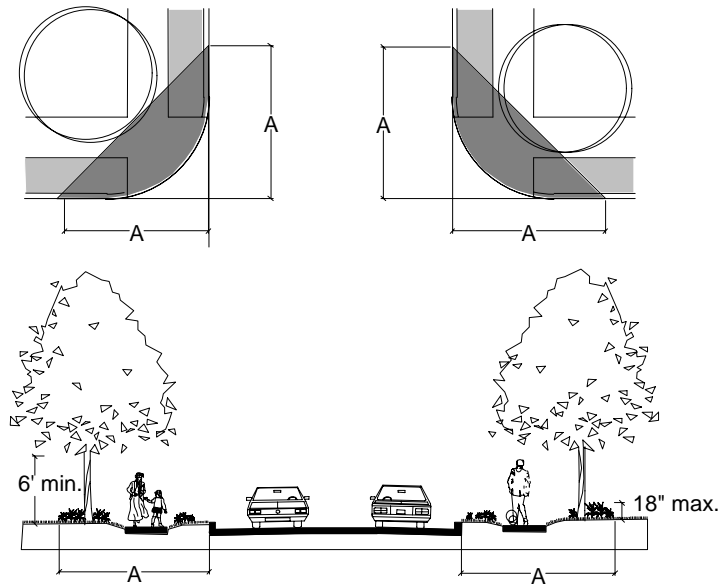
Section 110.412.30 Public Safety. All provisions of this article shall comply with the public safety requirements set forth in this section.

- (a) General. Landscaping shall meet the following safety requirements:
- (1) Landscaping elements shall not be permitted if they pose a public health or safety threat; and
 - (2) The height, spread and growth habit of all plants shall not interfere with or obstruct ease of movement or impede a public right-of-way.
- (b) Special Areas. The use of thorny plants is prohibited along public bicycle and pedestrian paths, and the use of poisonous and/or thorny plants is prohibited on properties used primarily by children such as schools, day care centers and nurseries.
- (c) Intersection Visibility. As illustrated in Figure 110.412.30.1, all trees shall be pruned such that no branches extend lower than six (6) feet above curb level and other plants shall not exceed eighteen (18) inches in height above any street curb under the following conditions:

- (1) Street Intersection: Within a thirty (30) foot visibility triangle.
- (2) Commercial Driveway or Alleyway: Within a fifteen (15) foot visibility triangle.
- (3) Residential Driveway: Within a ten (10) foot visibility triangle.

Figure 110.412.30.1

INTERSECTION VISIBILITY



Note: A = Distance measured from street curb as set forth in Section 110.412.30 (c)(1), (c)(2), and (c)(3).

Source: Sedway Cooke Associates.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.35 Residential Use Types. The following landscaping requirements shall apply to residential uses including duplex and multiplex residential subdivision lots and multi-family developments, except those exempted by Section 110.412.10, Exemptions. Any landscaping required in this section may contribute toward the minimum requirements.

- (a) Coverage. A minimum twenty (20) percent of the total developed land area shall be landscaped.
- (b) Required Yards Adjoining Streets. All required front, rear or side yards which adjoin a public street shall be landscaped and shall include at least one (1) tree for every fifty (50) linear feet of street frontage, or fraction thereof.
- (c) Subdivision Perimeters. New residential subdivisions, regardless of the number of dwelling units per parcel, shall provide at least one (1) tree for every fifty (50) linear feet of perimeter frontage adjoining an arterial or collector identified in the Washoe County Master Plan Streets and Highways System Plan map.

- (d) Model Homes. Model homes for all residential subdivisions shall install landscaping that demonstrates appropriate landscape techniques suitable for the local micro-climate and soil conditions.

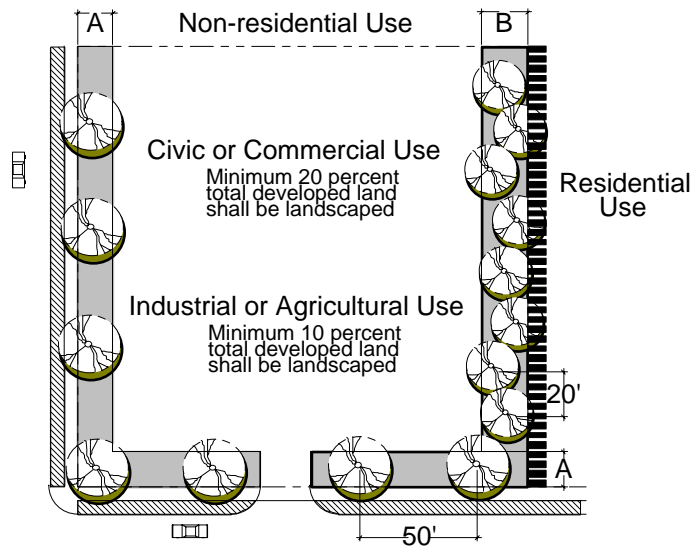
[This Section added by Ord. 867, provisions eff. 5/27/93; Ord. 1447, provisions eff. 9/9/10.]

Section 110.412.40 Civic and Commercial Use Types. The following minimum landscaping requirements shall apply to the total developed land area for civic and commercial uses, except those exempted by Section 110.412.10, Exemptions. The total developed land area is illustrated in Figure 110.412.25.1. Any landscaping required in this section may contribute toward the minimum requirements, including a mixture of building and buffer landscaping. These requirements are generally depicted in Figure 110.412.40.1.

- (a) Coverage. A minimum twenty (20) percent of the total developed land area shall be landscaped. Any disturbance to undeveloped portions of a site shall be mitigated.
- (b) Required Yards Adjoining Streets. All required yards which adjoin a public street shall be landscaped and shall include at least one (1) tree for every fifty (50) linear feet of street frontage, or fraction thereof.
- (c) Landscaped Buffers Adjoining Residential Uses. When a civic or commercial use adjoins a residential use, a landscaped buffer is required as follows:
 - (1) The buffer shall be the width of the required front, side or rear yard for the entire length of the adjoining common property line; and
 - (2) The buffer shall include at least one (1) tree every twenty (20) linear feet of property frontage, or fraction thereof, planted in off-set rows or groupings to achieve maximum screening.
- (d) Screening Adjoining Residential Uses. When a civic or commercial use adjoins a residential use, a solid decorative wall or fence shall be erected along the entire length of the common property line. This wall or fence shall be at least six (6) feet but not more than seven (7) feet in height.

Figure 110.412.40.1

**LANDSCAPING AND SCREENING FOR CIVIC, COMMERCIAL,
INDUSTRIAL AND AGRICULTURAL USE TYPES**



- Notes:
- A = Landscaping in required yard adjoining a street.
 - B = Landscaped buffer adjoining a residential use.
 - = Screening adjoining a residential use.

Source: Sedway Cooke Associates.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.45 Industrial and Agricultural Use Types. The following minimum landscaping requirements shall apply to the total developed land area for industrial and agricultural uses, except those exempted by Section 110.412.10, Exemptions. The total developed land area is illustrated in Figure 110.412.25.1. Any landscaping required in this section may contribute toward the minimum requirements, including a mixture of building and buffer landscaping. These requirements are generally depicted in Figure 110.412.40.1.

- (a) Coverage. A minimum ten (10) percent of the total developed land area shall be landscaped. Any disturbance to undeveloped portions of a site shall be mitigated.
- (b) Required Yards Adjoining Streets. All required yards which adjoin a street shall be landscaped and shall include at least one (1) tree for every fifty (50) linear feet, or fraction thereof.
- (c) Landscaped Buffers Adjoining Residential Uses. When an industrial or agricultural use adjoins a residential use, a landscaped buffer is required as follows:
 - (1) The buffer shall be the width of the required yard for the entire length of the adjoining common property line; and

- (2) The buffer shall include at least one (1) tree every twenty (20) linear feet of property frontage, or fraction thereof, planted in off-set rows or other methods to achieve maximum buffering.
- (d) Screening Adjoining Residential Uses. When any industrial or agricultural use adjoins a residential use, a solid decorative wall or solid decorative fence shall be erected along the entire length of the common property line. This wall or fence shall be at least six (6) feet but not more than seven (7) feet in height.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

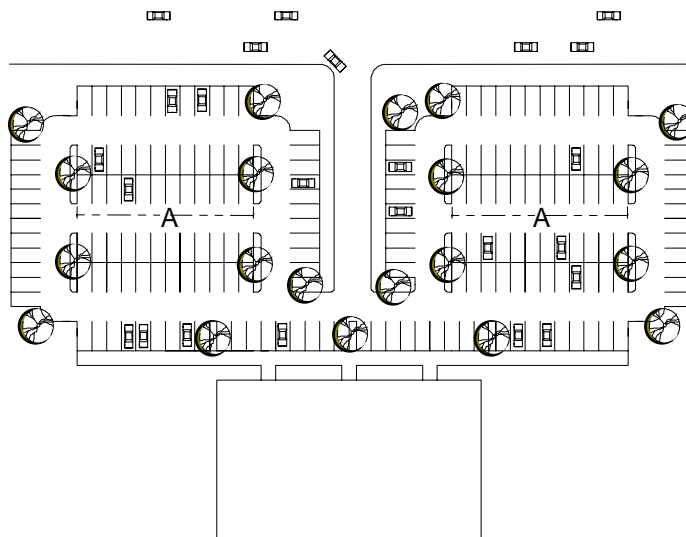
Section 110.412.50 Parking and Loading Areas. In addition to other required landscaping, all parking and loading areas shall provide minimum landscaping as set forth in this section. Any trees required in Sections 110.412.35 through 110.412.45 may contribute toward the minimum coverage requirement.

- (a) Coverage. At least one (1) tree shall be provided for every ten (10) parking spaces, provided the distance between required trees does not exceed twelve (12) spaces in a row and the trees are evenly distributed throughout the paved area, as generally depicted in Figure 110.412.50.1.
- (b) Required Yards Adjoining Streets. When a parking or loading area adjoins a street, a landscaped berm and/or decorative wall or fence shall be provided within all required yards adjacent to the parking or loading area, not to exceed three (3) feet.
- (c) Landscaped Buffers Adjoining Residential Uses. As generally depicted in Figure 110.412.50.2, when a parking or loading area adjoins a residential use, a landscaped buffer is required as follows:
 - (1) The buffer shall be the width of the required yard for the entire length of the adjoining common property line; and
 - (2) The buffer shall include at least one (1) tree every twenty (20) linear feet, or fraction thereof, planted in off-set rows.
- (d) Screening Adjoining Residential Uses. As generally depicted in Figure 110.412.50.2, when a parking or loading area adjoins a rear or non-street side yard of a residential use, a solid decorative wall or fence shall be erected along the entire length of the property line. This wall or fence shall be at least six (6) feet but not more than seven (7) feet in height.
- (e) Existing Parking and Loading Areas. When a parking or loading area existing prior to the effective date of this article is enlarged by one or more expansions in area greater than fifty (50) percent, the minimum landscaping requirements of this article shall be met for the total (existing and enlarged) area.
- (f) Standards. The following standards shall apply within parking and loading areas:
 - (1) Planted areas shall be protected by curb, wheel stops or other appropriate means, to prevent injury to plants from pedestrian or vehicle traffic; and

- (2) Planting areas which abut the side of parking stalls shall include a minimum eighteen (18) inch wide paved strip to allow access to and from vehicles.
- (g) Exceptions. Required landscaping shall not apply where parking and loading areas are:
 - (1) Completely screened from surrounding properties by intervening buildings or structures;
 - (2) Located under, on or within buildings; or
 - (3) Devoted to display parking for automobile dealerships.

Figure 110.412.50.1

REQUIRED TREES WITHIN PARKING AND LOADING AREAS

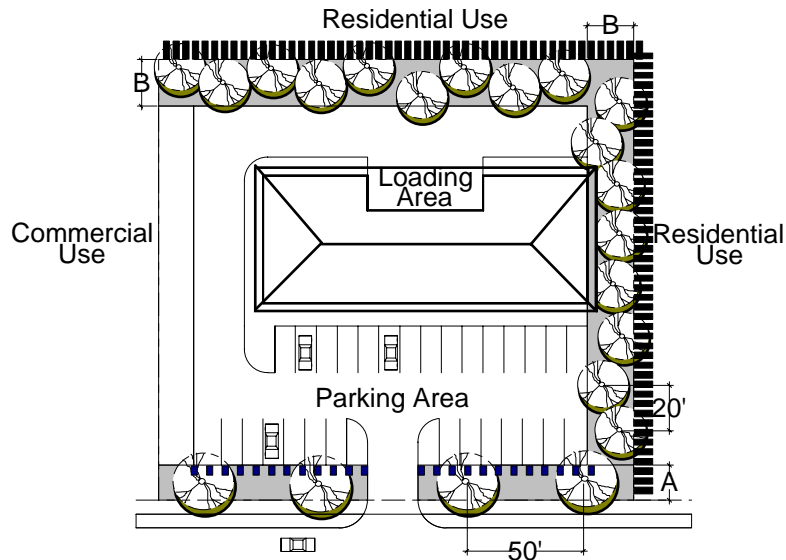


Notes: A = Maximum 12 parking spaces between trees.
Provide at least one tree for every 10 parking spaces (i.e. if 200 parking spaces are provided, then 20 trees are required).

Source: Sedway Cooke Associates.

Figure 110.412.50.2

LANDSCAPING AND SCREENING FOR PARKING AND LOADING AREAS



- Notes:
- A = Landscaping in required yard adjoining a street.
 - B = Landscaped buffer adjoining a residential use.
 - = Screening adjoining a residential use.
 - = Screening of a parking area adjoining a street.

Source: Sedway Cooke Associates.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.55 Other Screening Requirements. In addition to screening requirements established in Sections 110.412.35 through 110.412.50, screens shall comply with the minimum requirements of this section.

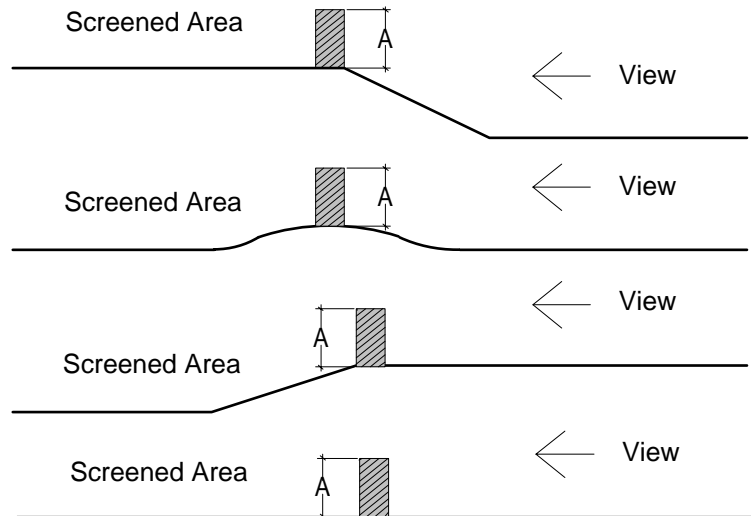
- (a) **Open Storage Areas.** The following screens are required for open storage areas:
- (1) Open storage areas shall be enclosed by a screen at least six (6) feet but not more than seven (7) feet in height;
 - (2) Items stored within one hundred (100) feet of a street or residential use shall not be stacked higher than the required screen;
 - (3) Screens to enclose storage areas between adjoining side or rear yards may be deleted by mutual agreement of the property owners involved;
 - (4) Exterior electrical cage enclosures and storage tanks shall be screened from view from an adjacent street and residential use; and
 - (5) The location of trash enclosures, as specified on the site plan, shall be subject to the approval of the Director of Community Development. Such enclosures and gates shall be of solid construction and shall be in accordance with County standards and the *Uniform Fire Code*.

- (b) Manufactured Home Parks. A decorative wall or fence shall be erected along the entire length of the property line of a manufactured home park as follows:
 - (1) The wall or fence shall be at least six (6) feet but not more than seven (7) feet in height along property lines not adjoining a street.
- (c) Commercial Campground Facilities. In Tourist Commercial designated areas, a decorative wall or fence shall be erected along the entire length of the property line of commercial campground facilities and recreational vehicle parks as follows:
 - (1) When a recreational vehicle park adjoins a street, the wall or fence shall be four (4) feet or more in height; and
 - (2) The wall or fence shall be at least six (6) feet but not more than seven (7) feet in height along property lines not adjoining a street.
- (d) Mechanical Equipment. All mechanical equipment, tanks, ventilating fans or similar equipment, whether located on a roof or on the ground, shall be screened from view from adjoining properties and streets. Screens shall be integrated into the overall architectural style of the associated building and shall be measured from the highest point of the object being screened.
- (e) Swimming Pools. Barriers shall be erected for swimming pools, spas and hot tubs in accordance with the current edition of the adopted Washoe County Building Code as referenced in Chapter 100.
- (f) Materials. Screens shall include the installation and maintenance of at least one (1) or a combination of the following elements:
 - (1) Dense plants, such as hedges;
 - (2) Chain link fencing, except along streets, with inserts of wood, metal or other acceptable material;
 - (3) Decorative fences constructed to maintain an opaque condition. Alternating slats are encouraged to accommodate windy extremes; or
 - (4) Decorative walls consisting of either brick, rock or block, and maintaining a width of at least eight (8) inches.
- (g) Opaqueness. Plants used for screens shall be:
 - (1) Of a type which will provide a year-round barrier at the prescribed height;
 - (2) Planted at a spacing necessary to achieve one hundred (100) percent opacity within five (5) years; and
 - (3) Supplemented or replaced with other dense landscaping or an appropriate fence or wall, if it fails to retain such opaqueness any time after the initial two (2) year period.

- (h) **Height Measurements.** Screening materials shall be located to maximize the benefit of the screen, and prescribed heights shall be measured from finished grade, as illustrated in Figure 110.412.55.1.

Figure 110.412.55.1

PLACEMENT AND MEASUREMENT TECHNIQUES FOR SCREENING MATERIAL



Note: A = Screen height measured from finished grade.

Source: Sedway Cooke Associates.

[This Section added by Ord. 867, provisions eff. 5/27/93; Ord. 1178, provisions eff. 12/6/02.]

Section 110.412.60 Planting Standards. All required landscaping, including parking and loading areas, shall comply with the minimum standards established in this section.

- (a) **Composition.** The use of climatic adaptive planting material is encouraged. A suggested climatic adaptive plant list is available from the Washoe County Cooperative Extension, or any other sources approved by the Director of Community Development.
- (b) **Compatibility.** Development shall relate harmoniously to the surrounding topography and provide for the preservation of natural features such as water courses, wooded areas and rough terrain.
- (c) **Compatible Water Use Zones.** Trees and plants having similar climatic, water, soil and maintenance requirements shall be organized in distinct and compatible planting zones as defined below:
- (1) High water use zones include plants which require moist soils and supplemental water in addition to natural rainfall to survive at maturity;
 - (2) Moderate water use zones include plants which survive on natural rainfall with supplemental water during seasonal dry periods at maturity; and

- (3) Low water use zones include plants which survive on natural rainfall without supplemental water at maturity.
- (d) Nursery Standards. Plants shall meet the standards for sizes and grades of plant materials as listed in the latest edition of the American Standard for Nursery Stock released by the American Association of Nurserymen.
- (e) Non-Interference. The location of trees and vegetation shall not adversely affect utility easements, service lines or solar access of neighboring sites. If necessary, the width of the planting areas shall be increased so that the tree locations do not interfere with utilities or solar access.
- (f) Public Rights-of-Way. Any tree planted within five (5) feet of publicly maintained curbing, pavement or sidewalks shall install a root control barrier as prescribed by the County. Landscaping for a private development may be placed in a public right-of-way subject to the issuance of a valid encroachment permit.
- (g) General. The following general standards shall apply to all new planting areas:
 - (1) Planting areas with trees within parking and loading areas shall be at least eight (8) feet wide at the base of the tree in all directions;
 - (2) Planting areas without trees within parking and loading areas shall be at least five (5) feet wide;
 - (3) Ground cover or mulch shall be used in all planting areas. Turf is not allowed in parking lot tree planters; and
 - (4) Planted areas shall be protected by curb, wheel stops or other appropriate means to prevent injury to plants from pedestrian or vehicle traffic.
- (h) Trees. New trees shall meet the following standards:
 - (1) The composition of trees shall represent a mixture of deciduous and coniferous varieties;
 - (2) At least one-half (1/2) of all evergreen trees shall be at least seven (7) feet in height, and the remainder must be at least five (5) feet in height at the time of planting; and
 - (3) At least one-half (1/2) of the required number of the deciduous trees shall be at least two (2) inch caliper per American Nursery Standards at the time of planting. The remaining number of required deciduous trees shall be at least one (1) inch caliper at the time of planting.
- (i) Shrubs and Hedges. New shrubs and hedges shall meet the following standards:
 - (1) Shrubs shall be comprised of a mixture of sizes, but not less than number one (1) size containers.
- (j) Ground Cover. New ground cover shall meet the following standards:

- (1) Living ground cover shall be planted to achieve a minimum planting area coverage of fifty (50) percent within one (1) year of installation and shall achieve one hundred (100) percent coverage within three (3) years of installation;
 - (2) Wood chips, bark, decorative rock or other appropriate inert materials may also be used provided it does not exceed fifty (50) percent of the total planting area; and
 - (3) Plastic, steel or other appropriate edging material shall be provided around ground cover areas to retain loose materials.
- (k) Turf. Turf, when used appropriately, offers aesthetic appeal, environmental cooling, oxygen production and a safe activity surface for a variety of recreational uses. Areas with turf shall meet the following standards:
- (1) Irrigation for turf areas shall minimize runoff and inadvertent watering of non-turf areas;
 - (2) Use of turf shall be consolidated to those areas that receive significant pedestrian traffic, provide for recreational uses, assist in soil erosion control such as on slopes or in swales, and other functional use areas;
 - (3) Turf areas shall be dethatched and aerated as needed to promote effective water infiltration into the soil, to minimize water runoff and to promote deep, healthy roots;
 - (4) In multi-family residential use types, turf areas shall be provided at a minimum of fifty (50) percent of the required landscaping area in a practical configuration for recreational uses and shall be balanced with other landscaping materials;
 - (5) In commercial and industrial use types, turf areas shall be balanced with other landscaping materials;
 - (6) Turf shall be comprised of drought-resistant and hardy varieties which, when properly installed and maintained, are capable of surviving under conditions of restricted water use;
 - (7) Any turf area must be capable of being watered with minimum overspray or runoff; and
 - (8) Where turf is used in areas subject to erosion or in swales, it shall be sodded rather than seeded.
- (l) Earth Berms. Earth berms shall comply with the following standards:
- (1) An earth berm may contribute toward the prescribed height of any planting, fencing or wall;
 - (2) Mounds of earth used for planting shall not exceed horizontal to vertical slopes of two to one (2:1); and

- (3) Turf planted slopes shall not exceed horizontal to vertical slopes of four to one (4:1).
- (m) Soil Preparation. Soil shall comply with the following standards:
 - (1) Required landscaping shall be installed using a planting soil mix comprised of a type appropriate to the individual proposed plants and the native soil found on the site;
 - (2) Where necessary, soil amendments such as manure, straw, peat moss or compost shall be used to improve water drainage, moisture penetration and water holding capacity as recommended in the soil analysis report pursuant to Section 110.412.15, Required Plans; and
 - (3) Deep ripping and tilling of landscape areas is encouraged to facilitate deep water penetration and soil oxygenation.
- (n) Mulch. Permanent mulch shall be applied to and maintained in all planting areas to assist soils in retaining moisture, reducing weed growth and minimizing erosion as follows:
 - (1) A minimum three (3) inch layer of organic mulch material shall be installed in all planting areas except turf areas and meadow planted areas;
 - (2) Mulch may consist of wood products, stone and other non-toxic recyclable materials;
 - (3) Non-porous materials, such as plastic sheets, shall not be placed under the mulch; and
 - (4) The use of woven types of geofabric weed barriers is required in all planter areas not devoted to turf or meadow planted areas.
- (o) Height Measurements. Prescribed heights shall be measured from finished grade at the base of the plant material.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.65 Irrigation Standards. Required irrigation shall comply with the minimum standards established in this section.

- (a) Separate Water Meter. All irrigation systems required for landscaping of all non-exempt development shall be connected to a water meter installed on the main line of the irrigation system upstream of the control valves to measure water delivery separate from water delivered for other forms of interior or exterior consumptive use.
- (b) Compatible Water Use Zones. Irrigation systems shall be designed to correlate with the composition of trees and plants and their related water use. High water use zones shall be provided with central automatic irrigation systems.
- (c) Coverage Requirements. Coverage requirements apply to all temporary and permanent irrigation systems as follows:

- (1) Spray irrigation systems shall be designed for head-to-head coverage;
 - (2) Sprinkler heads must have matched precipitation rates within each control valve circuit; and
 - (3) Drip systems shall be designed to be expandable to adequately water the mature plants.
- (d) Control Systems. The following requirements apply to all irrigation control systems:
- (1) Controlled irrigation systems shall be operated by an irrigation controller capable of irrigating high water demand areas on a different schedule from low water demand areas;
 - (2) Controllers must have multiple cycle start capacity and a flexible calendar program above to be set to comply with local or water management district restrictions; and
 - (3) Moisture sensor and/or rain shut-off equipment is encouraged to avoid irrigation during periods of sufficient rainfall. Such equipment shall have the capability to override the irrigation cycle of the sprinkler system when adequate rainfall has occurred.
- (e) Cross Connection Devices. All non-exempt development shall have either a pressure vacuum breaker or a reduced pressure principle backflow preventer device installed on the main line of the irrigation system upstream of the control valves.
- (f) Size of Irrigation Lines. Irrigation lines shall be classified as follows:
- (1) Schedule 40 P.V.C. is required for all pressure lines and as sleeving under all paved areas;
 - (2) Lateral line piping shall be installed at least twelve (12) inches underground for non-pressurized irrigation lines;
 - (3) Mainline piping shall be installed at least eighteen (18) inches underground for constant pressure irrigation lines; and
 - (4) Manual and automatic drains shall be used to prevent freeze damage.
- (g) Water Application Schedules. Irrigation system schedules should include the following standards:
- (1) Turf shall be irrigated on separate irrigation schedules; and
 - (2) Sprinkler systems with spray heads should not operate during times of high wind or high temperatures.
- (h) Maintenance. Irrigation systems shall be maintained as follows:

- (1) Irrigation systems shall be maintained regularly to eliminate the waste of water due to loss from damaged, missing or improperly operating portions of the system;
- (2) Controllers shall be adjusted to allow for the seasonal water requirements of the plants; and
- (3) Systems shall be winterized to prevent freeze damage, including draining lines and backflow prevention devices as necessary.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.70 General Requirements. All landscaping and screening shall meet the general requirements of this section.

- (a) **Bonding Value.** Landscaping, irrigation and screening shall be completely installed prior to issuance of a Certificate of Occupancy unless the applicant posts a bond of three (3) dollars per square foot of landscaping at base year value of 1993, or other appropriate financial assurances.
- (b) **Deferrals.** Request for deferrals shall be submitted in writing to the Director of Community Development and shall include the bond amount or other appropriate financial assurances. The request must explain the need for such deferral and the estimated time for completion.
- (c) **Dust Control.** The following dust control measures shall be used:
 - (1) For temporary coverage to control dust for less than one (1) year: hydroseed with fast-growing temporary grasses; apply mulch or weed prevention netting; apply other slope stabilization materials; and install temporary irrigation system, if required, subject to the approval of the Director of Community Development; and
 - (2) For coverage to control dust for more than one (1) year: land clearing shall be minimized and permanent planting as required by this article shall apply.
- (d) **Erosion Control.** Erosion shall be controlled by slowing stormwater runoff and assisting in groundwater recharge as follows:
 - (1) To minimize erosion during construction, straw or other appropriate material shall be applied to slopes susceptible to water runoff; and
 - (2) Erosion shall be controlled on all graded sites which remain vacant prior to building construction.
- (e) **Stormwater Runoff.** Stormwater runoff shall be minimized in landscaped areas as follows:
 - (1) Stormwater detention/retention basins not integrated with paved areas shall be landscaped to enhance the natural configuration of the basin and plants located within the lower one-third (1/3) portion of the basin must withstand periodic submersion;

- (2) Where appropriate, grading and landscaping shall incorporate on-site stormwater runoff for supplemental on-site irrigation;
- (3) Where water is dispersed to natural ground or channels, appropriate energy dissipators shall be installed to prevent erosion at the point of discharge;
- (4) Runoff from disturbed areas shall be detained or filtered by earth berms, planting strips, catch basins or other appropriate methods to prevent sedimentation from the disturbed area from obstructing natural or artificial channels or deposition on paved areas; and
- (5) No earth, organic or construction material shall be deposited in or placed where it may be directly carried into a stream, lake or wetlands area.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.75 Maintenance. All landscaping, irrigation and screening shall be maintained at all times to conform to the regulations established in this article.

- (a) Responsibilities. Landscaping and related equipment including, but not limited to, plants, screens, walkways, benches, fountains and irrigation systems shall be maintained by the applicant or subsequent owner of the property.
- (b) Agreement. Prior to the issuance of a Certificate of Occupancy, the applicant shall file a Maintenance Agreement or access easement to enter and maintain the property, subject to the approval of the County District Attorney. Such a document shall ensure that if the property owner fails to maintain the requirements set forth in this article, the County will be able to file an appropriate lien(s) against the property in order to achieve the required maintenance.
- (c) Plants. Required plants shall be maintained in healthy, vigorous, and disease and pest-free conditions so as to present a neat and healthy appearance free of refuse, debris and weeds. Plants shall be fertilized, cultivated and pruned on a regular basis and sound horticultural principles shall be practiced.
- (d) Staking. Plants shall be staked, tied or otherwise supported as necessary. Supports shall be regularly monitored to avoid damage to plants and removed when appropriate.
- (e) Pruning. Pruning shall be accomplished in accordance with accepted arboriculture standards.
- (f) Turf Edge Trimming. Roadways, curbs and sidewalks shall be edged to prevent encroachment from the adjacent turfed areas. Line trimmers shall not be used to trim turf abutting trees or other plants. All turf within a twenty-four (24) inch radius of any tree trunk shall be removed.
- (g) Replacement. Landscaping which is not maintained in a manner consistent with this article shall be replaced as follows:
 - (1) Replacement includes, but is not limited to, replacing plants damaged by insects, disease, vehicular traffic, vandalism, storm damage and natural disaster or occurrence;

- (2) If the required landscaping is not living within one (1) year of a Certificate of Occupancy, it shall be replaced with equivalent vegetation;
- (3) If the existing landscaping which was preserved is not living within two (2) years of a Certificate of Occupancy, it shall be replaced with equivalent new landscaping; and
- (4) Replacement landscaping shall be installed within thirty (30) days following notification by the Director of Community Development that a violation of this article has occurred.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Section 110.412.80 Guarantee of Completion. To ensure proper installation and compliance with approved plans required in Section 110.412.15, Required Plans, the person responsible for preparation of the required plans, or a qualified designated representative of the individual or firm which prepared the plans, shall conduct a final field inspection prior to issuance of a Certificate of Occupancy. It shall be unlawful to occupy the premises unless the required landscaping, irrigation and screening is installed in accordance with these regulations, or a faithful performance bond or other satisfactory guarantee of completion insuring the faithful performance of all work, is accepted by the Director of Community Development. If any person fails to complete any improvement as specified in the approved plans, and as agreed within the time specified, the Board of County Commissioners may cause the bond to be forfeited in the amount necessary to finish the uncompleted portion of the work.

[This Section added by Ord. 867, provisions eff. 5/27/93.]

Article 414

NOISE AND LIGHTING STANDARDS

Sections:

110.414.00	Purpose
110.414.05	Standards
110.414.10	Measurement
110.414.15	Airport Noise
110.414.20	Exceptions
110.414.21	Light and Glare
110.414.25	Nonconforming Use

Section 110.414.00 Purpose. The purpose of this article, Article 414, Noise and Lighting Standards, is to allow for a pattern of land uses that minimizes the exposure of community residents to excessive noise.

Section 110.414.05 Standards. Sound levels shall not exceed the standards set forth in this section.

- (a) Industrial Development. For property being developed within any industrial zone: seventy-five (75) Ldn at the property line.
- (b) Residential Abutment. For property abutting areas developed residentially, or shown as residential on the area plan maps: sixty-five (65) Ldn at the property line.
- (c) Public/Quasi-Public Facility Abutment. For property abutting local parks, schools, hospitals, group care facilities or facilities providing child care services: sixty-five (65) Ldn at the property line. Interior noise levels shall not exceed 45 Ldn.
- (d) Development with Public/Quasi-Public Facility. For property being developed with a group care facility, school or hospital: sixty (60) Ldn at three (3) feet from any of the building's exterior walls. Interior noise levels shall not exceed 45 Ldn.
- (e) Noise Abatement Near Highways and Railroads. Prior to approving any residential development, applicant(s) shall provide site plans indicating that outside noise levels at the residences shall not exceed a maximum of 65 dB when trains are passing or 65 Ldn next to highways.
- (f) Other. If the sound levels affecting a project are greater than those allowed for project development, the developer or subdivider shall construct a noise attenuation barrier to bring sound levels down to required standards.

Section 110.414.10 Measurement. Measurement of sound levels shall be in accordance with the provisions of this section.

- (a) A-Weighting. Sound levels shall be measured on the A-weighting network of a sound level meter meeting the requirements of USA Standards S14-1971 for General Purpose Sound Level Meters, or the latest revision published by the American National Standards Institute, Inc., using the slow meter response. An additional 10 dB weighting shall be imposed on the sound levels occurring during nighttime hours (10 p.m. to 7 a.m.) to determine the day-night average sound level (Ldn). The meter shall be calibrated and used according to the manufacturer's instructions.
- (b) Location of Measurement. Measurements shall be taken with the microphone located at any point on the property line of the noise source, but no closer than three (3) feet from any wall and not less than three (3) feet above the ground.
- (c) Timing and Number of Measurements. A twenty-four (24) hour measurement shall be taken. The sound level shall be the average of the hourly readings with the Ldn or day-night average sound level weighting.

Section 110.414.15 Airport Noise. All development proposed within the noise contours established for any airport by the Airport Authority of Washoe County shall conform to the Federal Aviation Regulation, Part 150, Land Use Compatibility Guidelines. Prior to the issuance of a building permit for any new structure within the established noise contour area and flight corridors, the property owner shall dedicate an aviation easement to the Airport Authority of Washoe County in such form and substance as established by the Airport Authority.

Section 110.414.20 Exceptions. The following sources of noise are exempt from the regulations of this article:

- (a) Motor vehicles and other noise-generating equipment not under the control of the property;
- (b) Emergency vehicles and equipment;
- (c) Temporary construction, repair or demolition activities occurring between 7:00 a.m. and 7:00 p.m. on any day except Sunday; and
- (d) Any use approved through a variance that specifically reviewed the issue of noise created by the use.

[Amended by Ord. 959, provisions eff. 7/26/96.]

Section 110.414.21 Light and Glare. This section sets forth criteria and standards to mitigate impacts caused by lighting and glare.

- (a) Light. All light sources shall be located and installed in such a way as to prevent spillover lighting onto adjoining properties. The following provisions shall apply to all existing and proposed development:
 - (1) Any lighting facilities shall be so installed as to reflect away from adjoining properties. Covers must be installed on all lighting fixtures and lamps must not extend below the bottom of the cover.
 - (2) Light standard in or within one hundred (100) feet of residential zones shall not exceed twelve (12) feet in height. Additional standard height

may be permitted by the Director of Community Development provided such lights are a sharp cutoff lighting system.

- (3) No permanent rotating searchlights shall be permitted in any regulatory zone, except that an administrative permit may be issued by the hearing examiner for a period not to exceed three (3) days for a temporary searchlight. The administrative permit shall be limited to a maximum of three (3) times in any one (1) calendar year.
- (b) Lighting Design. The style and intensity of lighting shall consider not only function and appearance, but shall reflect the existing character of surrounding areas and shall replicate natural light as much as possible.
- (c) Glare. Reflected glare on nearby buildings, streets or pedestrian areas shall be avoided by incorporating overhangs and awnings, using non-reflective building materials for exterior walls and roof surfaces, controlling angles of reflection, and placing landscaping and screening in appropriate locations.
- (d) Interior Lighting. Where residential uses abut non-residential uses, interior lighting of the non-residential uses shall be controlled at night through the use of timers, window blinds, or other acceptable means. This provision shall apply to all existing and proposed development.
- (e) Conflict with Other Portions of the Development Code. Where another provision of the Development Code may conflict with the provisions of this section, the more restrictive provision shall control.

[Amended by Ord. 919, provisions eff. 2/1/95; Ord. 1234, provisions eff. 5/21/04.]

Section 110.414.25 Nonconforming Use. Any development which was permitted by or conformed to the requirements of the zoning ordinance in effect prior to the effective date of this section shall be considered a nonconforming use subject to the provisions of Article 904, Nonconformance, except for the provisions of Section 110.414.21, Light and Glare.

[Amended by Ord. 919, provisions eff. 2/1/95.]

Article 416

FLOOD HAZARDS

Sections:

110.416.00	Purpose
110.416.05	Limitations of Liability
110.416.10	Applicability
110.416.15	Areas of Special Flood Hazard
110.416.18	Critical Flood Storage Areas
110.416.20	Compliance
110.416.25	Relation to Other Restrictions
110.416.30	Interpretation
110.416.35	Letter of Map Amendment
110.416.40	Application Requirements for Permits
110.416.45	Owner/Developer Responsibilities
110.416.50	County Responsibilities
110.416.55	Standards for Subdivision
110.416.57	Standards for All Development in Critical Flood Zone 1
110.416.60	Construction Standards
110.416.65	Flood Zone Requirements
110.416.70	Flood Hazard Reduction: Prohibited Uses and Structures within Floodways
110.416.75	Appeals
110.416.80	Penalties for Violations

Section 110.416.00 Purpose. The purpose of this article, Article 416, Flood Hazards, is to promote the public health, safety and welfare by establishing guidelines and requirements for the development of property within areas determined to be subject to flood damage.

Section 110.416.05 Limitations of Liability. This section provides for limitations of County liability.

- (a) **Rationale for Article.** The degree of flood protection required by this article is considered reasonable for purposes of complying with the minimum standards required by the Federal Insurance Administration for maintaining eligibility for Washoe County property owners who desire flood insurance, the availability of which, or the rates for which, may be dependent upon the existence of this article, and for maintaining eligibility for the Washoe County area for federal disaster relief.
- (b) **Responsibility of Washoe County.** The degree of flood protection required by this article is not intended to create a standard or duty of care on the part of Washoe County or any other person or entity related to the design, construction, inspection or maintenance of flood or drainage facilities. This article does not imply that land outside flood hazard areas or uses permitted within such areas will be free from flooding or flood damage. Larger floods can and will occur. This article shall not create liability on the part of Washoe County, any officer or employee thereof or the Federal Insurance Administration, for any flood

damages that result from reliance on this article or any administrative decision lawfully made thereunder.

- (c) Flood Control Facilities. Nothing in this article may be construed as a determination that any flood or drainage facility is adequate in any respect including, without limitation, adequacy of design, construction, inspection or maintenance. Failure of any person or entity to comply with this article is not intended to provide a basis for negligence or any other type of claim for relief; failure to comply has the sole effect of jeopardizing eligibility for federal funding or other federal assistance respecting flood damage or flood insurance.
- (d) Property Rights. This article is not intended to alter the rights, obligations or liabilities of property owners who develop real estate in areas subject to this article or in areas subject to flooding. Such legal status shall remain as provided by other law, without reference to this article. The minimum standards of this article do not relieve a property owner of the responsibility to do more than this article requires if more is required to provide adequate protection for the property being developed and for other properties that may be affected.
- (e) Severability. This article and the various parts thereof are hereby declared to be severable. Should any section of this article be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the article as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid.

[Amended by Ord. 1091, provisions eff. 4/28/00.]

Section 110.416.10 Applicability. This article applies to all flood hazard areas, including critical flood storage Zone 1, within the unincorporated areas of Washoe County, pursuant to NRS 543.

[Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1259, provisions eff. 2/4/05.]

Section 110.416.15 Areas of Special Flood Hazard. The flood hazard areas identified by the Federal Insurance Administration through the Federal Emergency Management Agency in a scientific and engineering report entitled "Flood Insurance Study for Washoe County, Nevada, Unincorporated Areas" dated February 1, 1984, with the accompanying Flood Insurance Rate Maps and all subsequent revisions and amendments, are hereby adopted and incorporated into the provisions of this article. The "Flood Insurance Study for Washoe County, Nevada, Unincorporated Areas" with the accompanying Flood Insurance Rate Maps and all subsequent revisions and amendments are on file at the office of the Washoe County Department of Public Works.

[Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.18 Critical Flood Storage Areas. The Washoe County Department of Water Resources maintains detailed information concerning the Truckee Meadows Flood Plain Storage Zones and critical flood storage Zone 1 identified in Policy 3.1.b of the Washoe County Comprehensive Water Management Plan, as amended. These provisions are hereby adopted and incorporated into the provisions of this article.

[Amended by Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.20 Compliance. All structures or land constructed, located, extended, converted or altered after August 1, 1984 shall be in full compliance with this article and other applicable laws and regulations.

Section 110.416.25 Relation to Other Restrictions. This article is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. If those sections or an article of this Development Code or any easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent requirement shall prevail.

Section 110.416.30 Interpretation. In the interpretation and application of this article, all provisions shall be considered as minimum requirements, shall be liberally construed in favor of Washoe County, and shall be deemed to neither limit nor repeal any other powers granted under state or local statute, ordinance or regulation. Definitions contained in Article 920, Definitions for Floodplain Management shall control.

[Amended by Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.35 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 Public Works Director for review. The Public Works 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:
 - (i) The type of structure;
 - (ii) The elevation of the lowest adjacent grade (LAG) to the structure, which must be above the base flood elevation; and
 - (iii) 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.

[Amended by Ord. 876, provisions eff. 7/7/93. Amended by Ord. 1091, provisions eff. 4/28/00.]

Section 110.416.40 Application Requirements for Permits. Any person desiring to construct, locate, extend, convert or alter a structure or alter any land within any flood hazard area must obtain a building permit, grading permit and/or a special use permit. The Washoe County Department of Public Works shall determine whether the proposed development is within any flood hazard area. If the development is within any flood hazard area, the procedures and requirements set forth in Sections 110.416.45 to 110.416.80, inclusive, must be satisfied before either a building permit, grading permit, and/or a special use permit, is issued.

[Amended by Ord. 1091, provisions eff. 4/28/00.]

Section 110.416.45 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 Department of Public Works:
- (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 floodproofed, certified by a Nevada registered engineer or land surveyor;
 - (4) Certification by a Nevada registered engineer that the floodproofing methods used for any nonresidential structure meet the floodproofing criteria in Section 110.416.65;
 - (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 Washoe County. The flood carrying capacity of the unaltered watercourse shall be maintained in the altered watercourse;
 - (6) An operation and maintenance plan for any acceptable flood protection measures (e.g. levees, dams, dikes, reservoirs); and

- (7) Within six (6) months, notify FEMA of changes in the base flood elevation by submitting technical or scientific data to assure that insurance and floodplain management is based on current data.
- (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 Department of Public Works.
- (c) Certification Requirements. The owner or developer is responsible for compliance with all provisions of this article. Additionally, the owner or developer shall provide the Department of Public Works with "as-built" certification by a Nevada registered engineer or land surveyor as to the elevation requirements or, if floodproofing is a permissible means of compliance, shall provide the Department of Public Works with "as-built" certification by a Nevada registered engineer as to the floodproofing requirements for any applicable nonresidential structure. Said 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 Certificate by a Nevada registered engineer or land surveyor constitutes their assurance that compliance with all requirements of this article have been met.

[Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.50 County Responsibilities. The responsibilities of the County are as set forth in this section.

- (a) Floodplain Administrator. The Public Works Director or assigned designee is hereby appointed Floodplain Administrator to administer and implement the requirements set forth for the development in the floodplains.
- (b) Permit Review. The Department of Public Works shall review all permit applications to determine:
 - (1) That the requirements of Sections 110.416.00 to 110.416.80, inclusive, have been satisfied;
 - (2) That the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point; and
 - (3) That construction methods and practices are utilized to minimize flood damage for all proposed construction and other developments.
- (c) Availability of Certifications. The Department of Public Works shall maintain for public inspection and make available as needed for flood insurance policies all certifications required by this article.
- (d) Notification Requirements. The Department of Public Works shall insure that adjacent affected communities and the Nevada Department of Conservation,

Division of Water Planning are notified prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Emergency Management Agency.

- (e) Flood Hazard Area and Critical Flood Storage Zone Delineation. The Department of Public Works shall provide interpretations, where needed, as to the location of the boundaries of the flood hazard areas, critical flood storage zones and the elevation of the base flood, if known.
- (f) Flood Elevation Determination. If base flood elevation data have not been provided in accordance with Section 110.416.15, the Department of Public Works shall obtain, review and reasonably utilize any base flood elevation and floodway data available from federal, state or other acceptable sources as criteria for requiring that new construction, substantial improvements or other improvements in flood hazard areas as shown on the existing Flood Insurance Rate Maps meet the standards in Sections 110.416.55 to 110.416.80. If deemed necessary by the Department of Public Works, the owner or developer may be required to provide an engineered hydrological study to determine the base flood flow and elevations.
- (g) Availability of Plans. The Department of Public Works shall maintain on file all operation and maintenance plans submitted by the developer for every acceptable flood protection measure.

[Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1259, provisions eff. 2/4/05; Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.55 Standards for Subdivision. The standards for subdivisions subject to flood damage are as set forth in this section.

- (a) All new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than fifty (50) lots or five (5) acres, shall provide base flood elevation data.
- (b) All subdivision improvement plans shall identify the flood hazard area, the elevation of the base flood, and the elevation of every proposed structure, pad and adjacent grade. If the site is filled above the base flood, the final pad elevation shall be certified by a Nevada registered engineer or land surveyor and provided to the Department of Public Works.
- (c) All subdivision proposals shall be consistent with the need to minimize flood damage.
- (d) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- (e) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.
- (f) No subdivision improvement shall be placed in a floodway, except as provided in Section 110.416.70.

[Amended by Ord. 1091, provisions eff. 4/28/00.]

Section 110.416.57 Standards for All Development in Critical Flood Zone 1. The standards for development in Critical Flood Zone 1 are set forth in this section.

- (a) Mitigation Required for Displacing Projects. All displacing projects should meet the following requirements:
 - (1) Stormwater discharges from displacing projects should be limited to pre-development conditions relative to peak flows; and,
 - (2) Provide flood storage volume mitigation to achieve no adverse impact.
- (b) Mitigation Methods and Requirements. The mitigation requirements established in (a) above may be met by:
 - (1) Creating one (1) unit of mitigation storage volume for every one (1) unit of floodplain storage volume that is displaced. The mitigation storage volume must occur within:
 - (i) The same flood storage area as the volume displaced; and,
 - (ii) At the same elevation band as the volume displaced; or
 - (2) If mitigation storage volume is proposed to be outside the same flood storage area or the same elevation band, then the mitigation within the Critical Flood Zone 1 must:
 - (i) Create a minimum of one (1) unit of mitigation storage volume for every one (1) unit of floodplain storage volume displaced or as needed to comply with Section 110.416.57(b)(2)(ii); and,
 - (ii) Demonstrate no adverse impact through application of the Truckee River Flood Project Mitigation model.
- (c) Mitigation Storage Volume. The entire amount of mitigation storage volume must be available for flood storage before any flood event. Detention basins required by other ordinances are not eligible to be counted as mitigation storage volume.
- (d) Mitigation Location. Mitigation cannot occur in conflict with and/or at the same location of approved Truckee River Flood Project features as indicated on maps on file in the Truckee River Flood Management Office.
- (e) Mitigation Timing. Mitigation must occur concurrently with or prior to a reduction of flood storage volume.
- (f) Exceptions. This section applies only to the parcels shown on Figures 110.416.57.1-110.416.57.3 and at the time of building permit, the parcels must be zoned as shown on Figures 110.416.57.1-110.416.57.3 for the exceptions to apply.
 - (1) Any construction activity that decreases the volume of flood storage in Zone 1 shall be prohibited.
 - (2) All development located on the parcels shown on Figure 110.416.57.1 shall provide compensatory storage at a one to one (1:1) ratio on the

project site or in a hydrologically connected basin, as determined by the Department of Public Works.

- (3) Compensatory storage may be, but is not required to be, hydrologically connected to onsite drainage designs required under Article 420, Storm Drainage Standards, of the Development Code.
 - (4) No critical facilities will be allowed on parcels shown on Figures 110.416.57.1-110.416.57.3.
 - (5) Compensatory storage on a one-to-one (1:1) ratio may be allowed in an existing hydrologically connected regional storage mitigation facility determined adequate by the Department of Public Works.
 - (6) The elevation of the lowest finished floor shall be based on the most current calculated water surface elevation for the without project condition under the 117-year storm event as determined from the Truckee River Flood Project Hydraulic Model being maintained by the Truckee River Flood Management Project staff for the Truckee River Flood Project facilities.
 - (7) New building structures, or existing structures that are elevated, shall be constructed on piers or vented stem walls that allow flood waters to rise in the crawl space.
- (g) Definitions. For the purposes of this article, the definitions listed hereunder shall be construed as specified in this section.

Critical Flood Zone 1. "Critical Flood Zone 1" means that area depicted as Zone 1 in the Truckee Meadows Floodplain Storage Zone map, Figure 1-2 of the Regional Water Plan dated January 2004.

Displacing Projects. "Displacing projects" means any proposed public or private construction which changes existing grades, imports fill, and/or displaces any volume of flood water in Critical Flood Zone 1 below the water surface indicated in Section 110.416.57(f)(6).

Elevation Band. "Elevation band" means a range of elevation of ten (10) vertical feet from the project's lowest natural elevation as defined in Section 110.416.57(f)(6).

Elevation Map. "Elevation map" means the latest version of the Truckee River Flood Management Project's Ground Elevation and Flood Water Elevation Map Series adopted and administered and updated from time to time pursuant to a cooperative agreement between all jurisdictions who have adopted similar regulations. A copy of the Elevation map will be kept on the Truckee River Flood Management Project website.

Flood Storage Area. "Flood storage area" means those areas designated on the Elevation map. If construction or mitigation is to occur in an area that is not designated as a flood storage area on the Elevation map, then mitigation must occur as provided in (b)(2) of this section.

Mitigation Storage Volume. “Mitigation storage volume” means flood storage volume provided in Critical Flood Zone 1 to offset a displacement of flood water volume as a result of construction activity.

No Adverse Impact. “No adverse impact” means as determined by the application and output of the Truckee River Flood Project Mitigation Model(s), water surface elevation in the Critical Flood Zone 1 within the 1997 water surface elevation as determined by the Elevation maps is not to be raised.

Truckee River Flood Project Mitigation Model. “Truckee River Flood Project Mitigation model” means a hydraulic model as updated from time to time, adopted and administered pursuant to a cooperative agreement between all jurisdictions who have adopted similar regulations. Until such a cooperative agreement is reached, the HEC-RAS Version 4.0 model prepared by the United States Army Corps of Engineers shall be used.

Figure 110.416.57.1

EXEMPTED PARCELS IN CRITICAL FLOOD ZONE 1

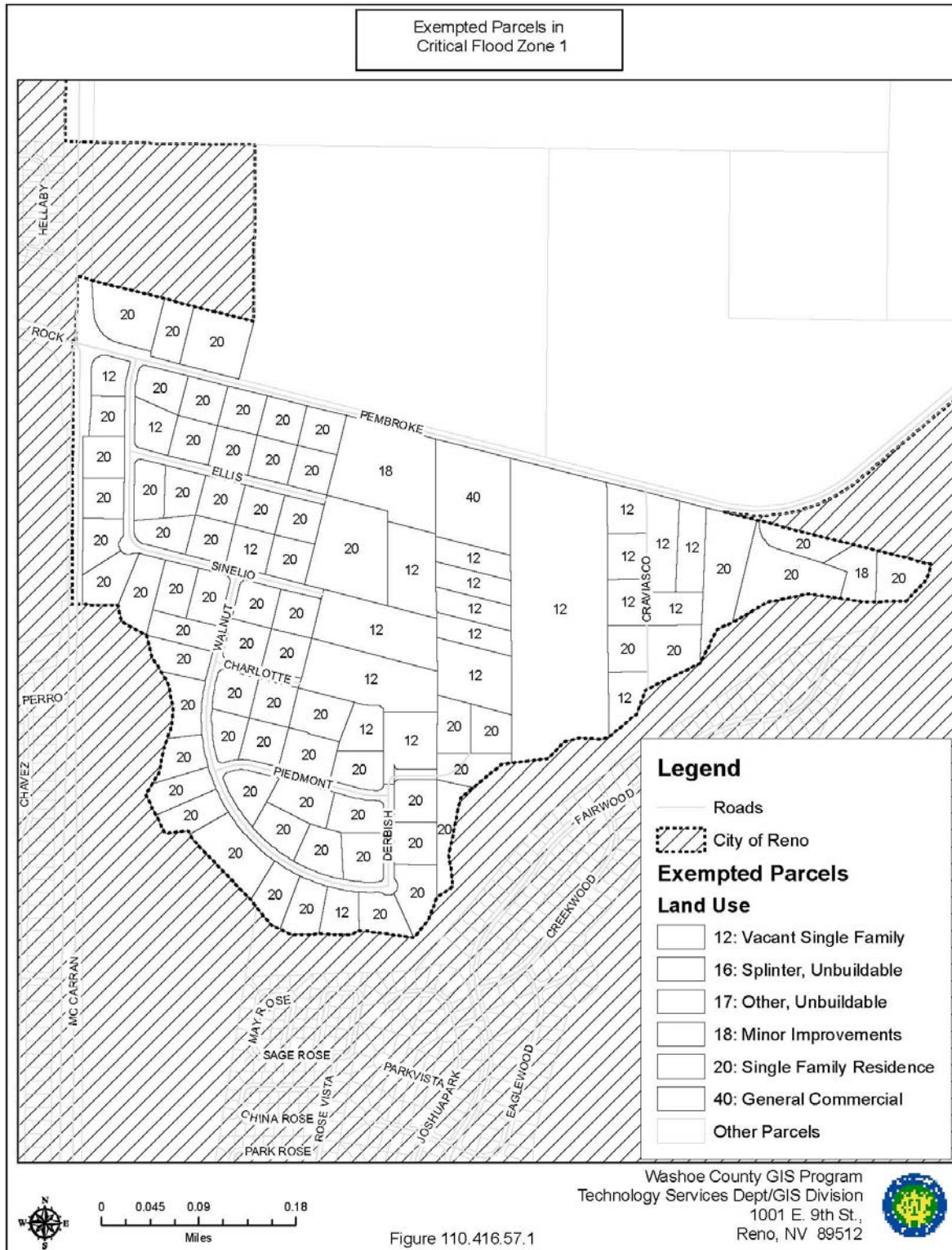


Figure 110.416.57.2

EXEMPTED PARCELS IN CRITICAL FLOOD ZONE 1

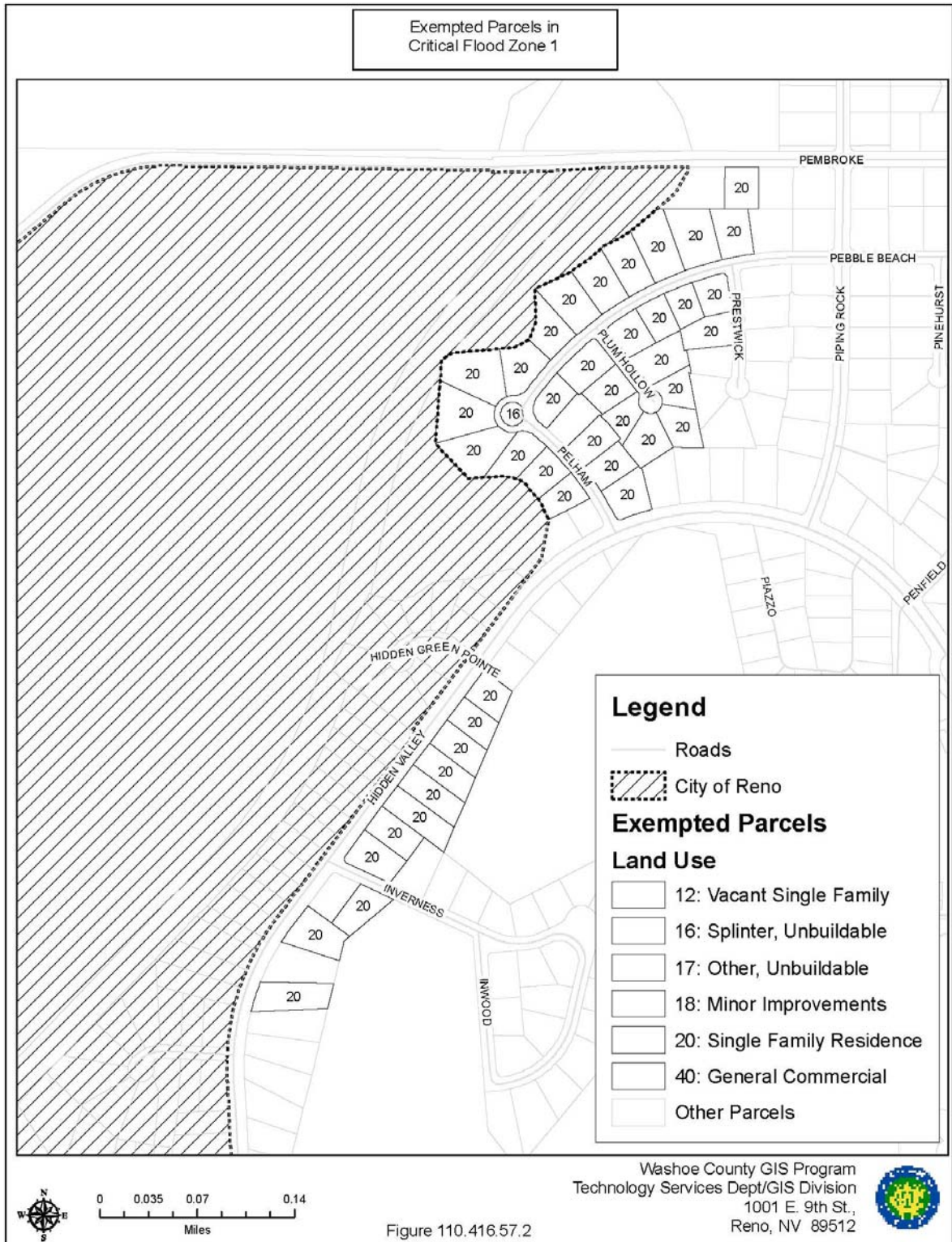
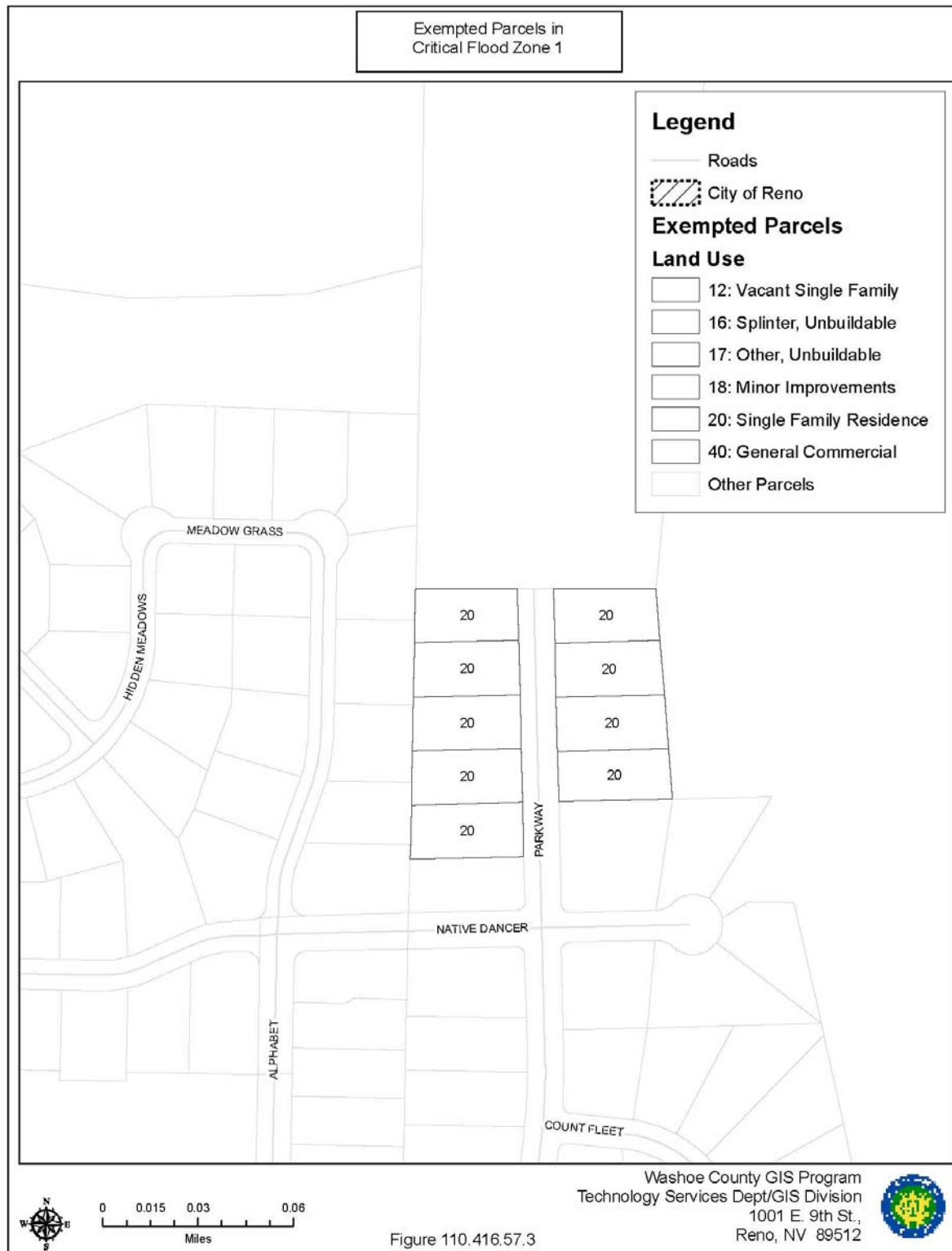


Figure 110.416.57.3

EXEMPTED PARCELS IN CRITICAL FLOOD ZONE 1



[Added by Ord. 1259, provisions eff. 2/4/05; Amended by Ord. 1457, provisions eff. 1/21/11.]

Section 110.416.60 Construction Standards. In all flood hazard areas, the required minimum standards for construction materials and methods are set forth in this section. The terms (as defined by FEMA) are set forth in Article 920.

- (a) All Construction. All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy; and be elevated on stemwalls, pilings, columns or armored fill so that the top of the lowest floor is elevated in conformance with provisions of Section 110.416.65, Flood Zone Requirements.
- (b) Manufactured Homes. All manufactured homes shall meet the anchoring standards of Section 110.416.65, Flood Zone Requirements.
- (c) Materials. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (d) Methods. All new construction and substantial improvements shall use methods and practices that minimize flood damage; and provide adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures.
- (e) Mechanical and Electrical. All elements that function as part of the structure (such as furnace, water heater, air conditioner and other electrical equipment) shall be elevated to one (1) foot or more above the base flood elevation or depth number specified on the Flood Insurance Rate Maps or shall be designed and/or located so as to prevent water from entering or accumulating within components during conditions of flooding.
- (f) Methods of Hydrostatic Equalization. All new construction and substantial improvements, which have fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement shall be certified by a Nevada registered engineer and must meet or exceed the provisions of this subsection.
 - (1) A minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding shall be provided.
 - (2) The bottom of all openings shall be no higher than one (1) foot above original grade. Openings may be equipped with screens, louvers or other cover devices, provided that they permit the automatic entry and exit of floodwaters.
 - (3) The exterior walls of all new construction and substantial improvements which have fully enclosed areas below the lowest floor that are subject to impact forces and drag forces shall also be designed by a Nevada registered engineer to withstand these and all hydrodynamic flood forces.
- (g) Utilities. The construction standards for utilities shall be as set forth below:

- (1) Water and Wastewater Systems. All new and replacement water supply and sanitary sewerage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from systems into floodwaters.
- (2) On-site Systems. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (h) Crawlspace Construction. All new construction and substantial improvements, which have fully enclosed areas below the lowest floor and below the lowest adjacent exterior grade (for frost protection) shall be constructed in accordance with FEMA Technical Bulletin 11-01 and subsequent revisions.

[Added by Ord. 922, provisions eff. retro to 9/30/94. Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.65 Flood Zone Requirements. In all flood hazard areas, elevation and floodproofing 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 (1) foot or more above the base flood elevation unless the construction of a crawlspace is in accordance with Section 110.416.60(h). 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 (1) foot above the depth number specified on the Flood Insurance Rate Maps unless the construction of a crawlspace is in accordance with Section 110.416.60(h). 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:
 - (i) Protect structures from erosion and scour caused by the velocity of the flood flow; and
 - (ii) 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 unless the construction of a crawlspace is in accordance with Section 110.416.60(h). Non-residential structures must meet the standards in subsection (f) of this section.
- (1) A height of at least two (2) feet above the highest adjacent undisturbed ground elevation if no base flood elevation has been determined; or
 - (2) A height of at least one (1) foot above the base flood elevation as determined by an engineered hydrological study provided by the owner or developer, if deemed necessary by the Department of Public Works.
- (d) Fabricated Housing Requirements. All fabricated homes, as specified in Article 312, Fabricated Housing, and additions to fabricated homes shall be constructed using methods and practices in conformance with subsections (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. The foundation shall be designed by a registered engineer.
- (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 one hundred eighty (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 floodproofed to the same appropriate elevations as the top of the lowest floor elevations as indicated in subsection (a), (b), or (c) of this section. All floodproofing measures shall be designed by a Nevada registered engineer. Examples of floodproofing 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.
- (g) Attached or Detached Garage Requirements. All garages, attached or detached, shall either be elevated in conformance with subsection (a), (b) or (c) of this section or shall provide for hydrostatic equalization in accordance with Section 110.416.60(f).

[Renumbered and renamed from Section 110.416.70 entitled "Construction Standards: Elevation and Floodproofing" and amended by Ord. 922, provisions eff. retro to 9/30/94. Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1356, provisions eff. 12/21/07.]

Section 110.416.70 Flood Hazard Reduction: Prohibited Uses and Structures within Floodways.

- (a) Prohibited Floodway Encroachments. Every new encroachment, including fill, new construction, substantial improvement and other development, is prohibited in a designated floodway, except as provided in subsection (b) of this section.
- (b) Exceptions. Improvements may be allowed in the floodway if it is demonstrated through hydrologic and hydraulic analysis and certified by a Nevada registered engineer that the proposed improvements will not result in any increase in flood levels during the occurrence of the base flood discharge, and that the improvements meet the standards in Sections 110.416.55 to 110.416.65 inclusive.

[Renumbered from 110.416.80 by Ord. 922, provisions eff. retro to 9/30/94. Amended by Ord. 1091, provisions eff. 4/28/00.]

Section 110.416.75 Appeals. Appeals shall be as set forth in this section.

- (a) Appeals for Variances. The Board of County Commissioners shall hear and decide appeals and requests for variances from the requirements of this article.
- (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. In passing upon such applications, the Board of County Commissioners shall consider all technical evaluations and all relevant requirements, factors and standards specified in this article and shall also consider 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 facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (4) The importance of the services provided by the proposed facility to the community;
 - (5) The necessity to the facility of a waterfront location, where applicable;
 - (6) The availability of alternative locations that are not subject to flooding or erosion damage and would suffice for the proposed use;
 - (7) The compatibility of the proposed use with existing and anticipated development;

- (8) The relationship of the proposed use to the Master Plan and floodplain management program for that area;
 - (9) The safety of access to the property in times of flood, for ordinary and emergency vehicles;
 - (10) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters 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).
- (d) Issuance of Variance. Variances shall only be issued when in compliance with the provisions of this section.
- (1) A showing of good and sufficient cause such as renovation, rehabilitation or reconstruction. It is not good and sufficient cause for a variance to be issued upon the basis of economic considerations, aesthetics or because variances have been used in the past.
 - (2) A determination that failure to grant the variance would result in exceptional hardship to the applicant.
 - (3) A determination that the granting of a variance will not result in additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization to the public, or conflict with existing local laws or ordinances.
- (e) Extent of Variance. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- (f) Conditions of Variance. Upon consideration of the factors set forth in subsection (c) of this section and the purpose of this article, the Board of County Commissioners may attach such conditions to the granting of variances as it deems necessary to further the purpose of this article.
- (g) Historic Resources. Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places without regard to the procedures set forth in this section.
- (h) Increase in Flood Levels. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (i) Written Notice. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance may be commensurate with the increased risk resulting from the reduced lowest floor elevation. The variance does not remove the obligation by the owner to keep and maintain flood insurance.

- (j) Responsibilities of Department of Public Works. The Washoe County Department of Public Works shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.

[Renumbered from 110.416.85 by Ord. 922, provisions eff. retro to 9/30/94. Amended by Ord. 1091, provisions eff. 4/28/00; Ord. 1447, provisions eff. 9/9/10.]

Section 110.416.80 Penalties for Violations. Any violation of this article shall be enforced as provided in Chapters 110 and 125 of the Washoe County Code, including without limitation prosecution as a misdemeanor.

[Renumbered from 110.416.90 by Ord. 922, provisions eff. retro to 9/30/94. Amended by Ord. 1356, provisions eff. 12/21/07.]

[Previous Section 110.416.60 entitled "Construction Standards: Anchoring," amended by Ord. 876, provisions eff. 7/7/93, repealed by Ord. 922, provisions eff. retro to 9/30/94. Previous Section 110.516.65 entitled "Construction Standards: Materials and Methods" repealed by Ord. 922, provisions eff. retro to 9/30/94. Previous Section 110.416.75 entitled "Construction Standards: Utilities" repealed by Ord. 922, provisions eff. retro to 9/30/94. Previous Map 110.416.18.1 entitled "Truckee Meadows Flood Plain Storage Zones" added by Ord. 1259, provisions eff. 2/4/05 was repealed by Ord. 1356, provisions eff. 12/21/07.]

Article 418

SIGNIFICANT HYDROLOGIC RESOURCES

Sections:

110.418.00	Purpose
110.418.05	Applicability
110.418.10	Exemptions
110.418.15	Perennial Streams Buffer Areas
110.418.20	Critical Stream Zone Buffer Area Development Standards
110.418.25	Sensitive Stream Zone Buffer Area Development Standards
110.418.30	Special Review Considerations
110.418.35	Common Open Space Development
110.418.40	Modification of Standards

Section 110.418.00 Purpose. The purpose of this article, Article 418, Significant Hydrologic Resources, is to regulate development activity within and adjacent to perennial streams to ensure that these resources are protected and enhanced. This article establishes standards for use of land in "critical stream zone buffer area" and "sensitive stream zone buffer area" to preserving and protecting perennial streams within Washoe County to implement a policy of "no net loss" of significant hydrological resource size, function and value. The purpose of requiring perennial stream buffer areas is to recognize that many uses directly adjacent to a hydrologic resource may compromise the integrity of the resource through various negative features endemic to the specific use. Negative activities in the buffer areas may impact the quality or quantity of the existing hydrology, soil characteristics, vegetation communities or topography thereby jeopardizing the resource's functions. The intent of these regulations is to protect the public health, safety and welfare by:

- (a) Preserving, protecting and restoring the natural functions of existing perennial streams in Washoe County;
- (b) Reducing the need for the expenditure of public funds to remedy or avoid flood hazards, erosion, or other situations caused by inappropriate alterations of streams;
- (c) Ensuring the natural flood control functions of perennial streams including, but not limited to, stormwater retention and slow-release detention capabilities are maintained;
- (d) Ensuring stormwater runoff and erosion control techniques are utilized to stabilize existing stream banks, reduce downstream sediment loading, and ensure the safety of people and property;
- (e) Ensuring the natural water quality functions of perennial streams including, but not limited to, pollution filtering, groundwater recharge, nutrient storage, nutrient recycling capabilities, and sediment filtering capabilities are not impacted by existing and proposed developments;

- (f) Encouraging common open space developments to avoid hazardous or environmentally sensitive areas, protect important habitat and open space areas, and minimize impacts on groundwater recharge areas;
- (g) Establishing buffer areas around all significant hydrological resource areas to ensure the resource is not jeopardized or degraded by adjacent offsite development activity;
- (h) Ensuring a no net loss of value, acreage and function of each different significant hydrological resources is adhered to; and
- (i) Identifying, establishing and managing perennial streams as mitigation sites for destroyed or degraded hydrological resources.

[Added by Ord. 1112, provisions eff. 2/15/01.]

Section 110.418.05 Applicability. The provisions set forth in this article shall apply as follows:

- (a) Area of Applicability. The provisions of Article 418 shall apply to all properties containing either perennial streams, or an established buffer area surrounding one of the perennial streams, as identified on Map 110.418.05.1, Significant Hydrologic Resources. All new development that requires permitting or review by the County shall be reviewed for compliance with the significant hydrologic resource standards. No variance to the significant hydrologic resource standards, pursuant to Article 804, Variances, shall be processed or approved. Refer to Section 110.418.40 Modification of Standards.

In determining the location of the above-designated streams, staff shall use:

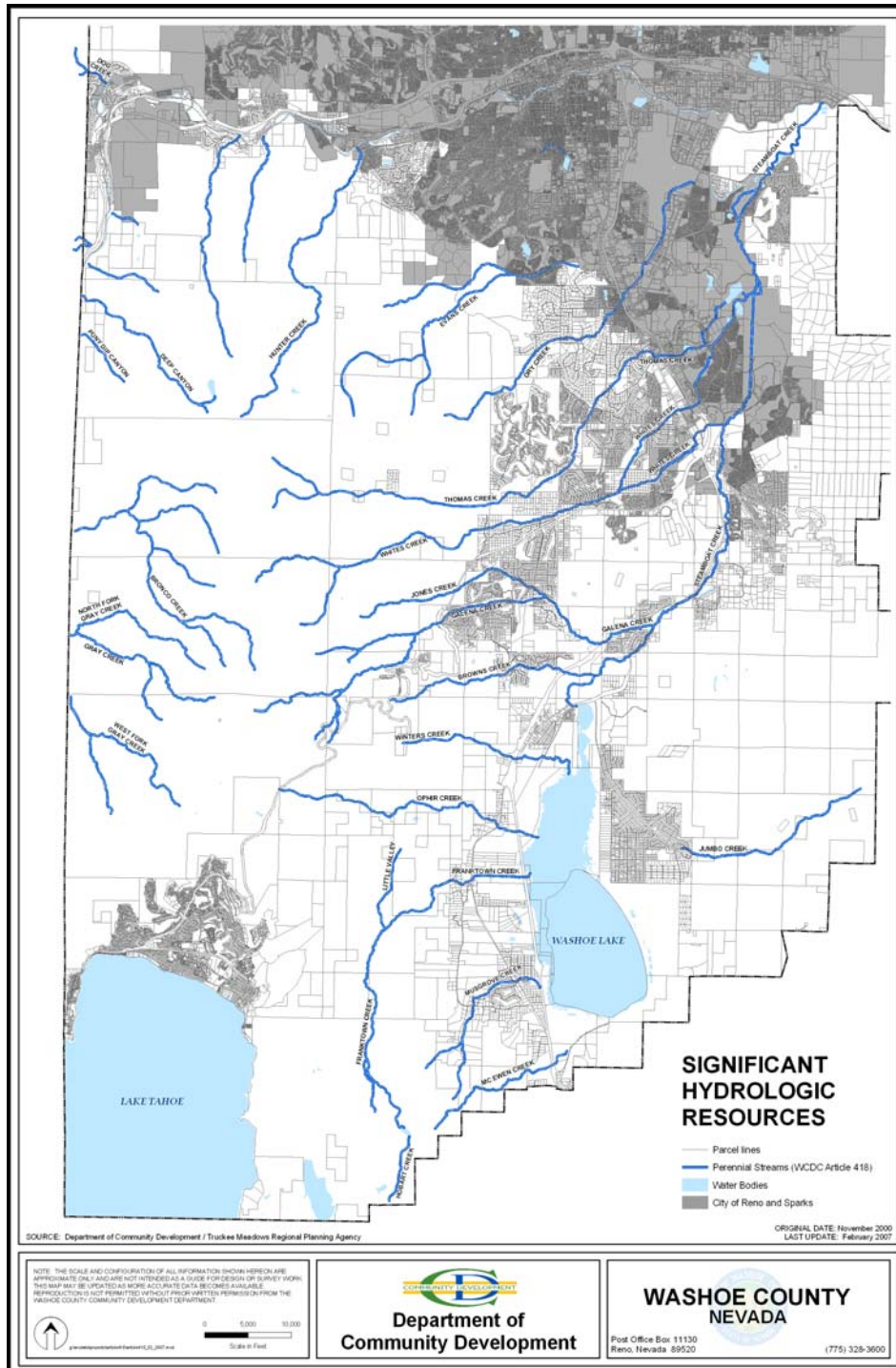
- (1) Published United States Geological Service (USGS) topographic maps, either in 7.5 minute or 15 minute series, to assist in the interpretation of location of significant hydrologic resources.
 - (2) A determination of the location of a perennial stream resulting from a delineation of wetlands and/or waters of the United States made by the United States Army Corps of Engineers under the provisions of Section 404 of the Federal Clean Water Act, shall be considered the perennial stream crossing any parcel of land.
 - (3) Field survey by land surveyor or professional engineer licensed and qualified to perform a survey.
- (b) Relationship to Other Restrictions. The requirements established in this article are not intended to repeal, abrogate, supersede or impair any existing federal, state or local law, easement, covenant or deed restriction. However, if this article imposes greater or more stringent restrictions, the provisions of this article shall prevail. Specifically, if an applicant also acquires authorization under Section 404 of the Clean Water Act from the United States Army Corps of Engineers, the applicant shall meet any greater or more stringent restrictions set forth in this article in addition to and independent of the restrictions of such permit.
- (c) Application of this Article to the Tahoe Planning Area. The provisions of this article may be waived by the Department of Community Development for

development in areas under the jurisdiction of the Tahoe Regional Planning Agency (TRPA) as long as "stream environment zones" are regulated by TRPA.

- (d) Application of this Article to the Truckee River. The provisions of this article do not apply for development along the Truckee River from the California/Nevada state line to the terminus in Pyramid Lake.
- (e) Application of this Article to the High Desert Planning Area. The provisions of this article do not apply for development in the High Desert planning area.
- (f) Impact on Land Use Designations. The provisions of this article shall neither be used as justification for changing a land use designation nor be used to reduce the development density or intensity otherwise allowed by the land use designation of the property, subject to the provisions and limitations of this article.

Map 110.418.05.1

SIGNIFICANT HYDROLOGIC RESOURCES



Source: Department of Community Development and Truckee Meadows Regional Planning Agency.

[Added by Ord. 1112, provisions eff. 2/15/01; graphic updated with Ord. 1378, provisions eff. 8/1/08.]

Section 110.418.10 Exemptions. The following are exempt from the provisions of this article:

- (a) All existing allowable or permitted use of any single family, detached, residential structure, including interior renovation, and replacement upon catastrophic damaging event, and all related accessory uses (e.g. garages, barns, corrals, storage sheds) constructed or under construction with a valid building permit prior to (effective date of this ordinance).
- (b) All projects with an approved special use permit, any map to divide land, design standards handbook and/or development agreement, currently active (not expired) and having obtained approval or having submitted a valid discretionary permit application prior to (effective date of this ordinance).

[Added by Ord. 1112, provisions eff. 2/15/01.]

Section 110.418.15 Perennial Streams Buffer Areas. Perennial stream buffer areas are established to provide adequate setbacks and land use controls to ensure water quality functions of each perennial stream are not jeopardized through development activity. To limit significant impacts adjacent to hydrological resources, two (2) buffer areas are hereby established—the "critical stream zone buffer area" and the "sensitive stream zone buffer area". All proposals to develop uses within the critical stream zone buffer area and/or the sensitive stream zone buffer area shall submit a site plan with precise dimensions depicting the boundary line for the buffer areas.

- (a) Critical Stream Zone Buffer Area. The critical stream zone buffer area shall be all land and water surface within thirty (30) feet from the centerline of the perennial stream. The centerline of the stream shall be determined by either survey from a licensed surveyor or by determination of the thalweg (i.e. the line connecting points of maximum water depth) from a topographic survey, or appropriate USGS 7.5 minute topographic map covering the site.
- (b) Sensitive Stream Zone Buffer Area. The sensitive stream zone buffer area shall be all land and water surface between the critical stream zone buffer area boundary of thirty (30) and one hundred fifty (150) feet from centerline or thalweg of the perennial stream.

[Added by Ord. 1112, provisions eff. 2/15/01.]

Section 110.418.20 Critical Stream Zone Buffer Area Development Standards. All development in the critical stream zone buffer area shall be subject to the following standards:

- (a) Allowed Uses. Uses allowed within the critical stream zone buffer area are limited to those uses necessary for providing community services such as managing and conserving natural resources, and providing recreational and educational opportunities, including:
 - (1) Weed control consistent with state and County laws.
 - (2) Mosquito abatement consistent with state and County laws.
 - (3) Conservation or preservation of soil, water, vegetation, fish and other wildlife habitats.

- (4) Outdoor recreation activities such as fishing, bird watching, hiking and swimming.
 - (5) Education and scientific research including, but not limited to, water quality monitoring and stream flow gauging.
 - (6) Maintenance of an existing public or private road, driveway, structure or facility, including drainage facilities, water conveyance structures, dams, fences, trails, and any public or private utility facility used to provide transportation, electric, gas, water, telephone, telecommunication, or other including individual service connections. Written notice shall be provided to the Department of Community Development at least fifteen (15) days prior to the commencement of work, and all impacts to the critical stream zone buffer area are minimized and disturbed areas are immediately restored to their natural state.
 - (7) Landscape improvements and maintenance of native vegetation is allowed within an established critical stream zone buffer area including the pruning of trees and the removal of dead vegetation and debris. Ornamental landscaping that would require fertilizer or pesticide applications for growth and maintenance is not permitted within the critical stream buffer zone area.
 - (8) Landscaping area requirements in accordance with Article 412, Landscaping, may be satisfied by using the natural, undisturbed or restored critical stream zone buffer area to count towards the required area to be landscaped for new residential, civic, commercial, industrial or agricultural use types. Parking and loading areas on the developed portion of the site shall continue to require landscaping. Open space requirements in accordance with Article 432, Open Space Standards, may be satisfied by using the natural, undisturbed or restored critical stream zone buffer area.
 - (9) Continuation of existing agricultural operations such as the cultivation and harvesting of hay or pasturing of livestock, or change of agricultural practices such as the relocation of an existing pasture fence, which has no greater impact on perennial stream water quality.
 - (10) Perimeter fencing on a property boundary with a valid building permit pursuant to approval by the County Engineer to ensure that obstruction to stream flows has been avoided.
- (b) Permitted Uses Requiring a Board of Adjustment Approved Special Use Permit Subject to the Provisions of Article 810, Special Use Permits. Subject to the regulatory zone in effect for the property establishing the uses as specified in Article 302, Allowed Uses, the following use types may be permitted in the critical stream zone buffer area pursuant to a special use permit being issued by the Washoe County Board of Adjustment according to the provisions of Article 810, Special Use Permits, and this article. Any construction in the critical stream zone buffer area will require submission of a grading plan showing compliance with applicable best management practices as defined by the Washoe County Department of Public Works to minimize stream bank and stream bed erosion. The grading plan shall also be designed to prevent construction drainage and

materials from increasing sedimentation impacts to the stream environment and to minimize impervious surfaces.

- (1) Construction or enlargement of any public or private roads, driveway, structure or facility including drainage facilities, water conveyance structures, dams, trails and any public or private utility facility used to provide transportation, electric, gas, water, telephone, telecommunication or other services.
 - (2) Civic Use Types. Civic uses classified under the utility services, nature center, active recreation, passive recreation and safety services use types may be permitted in the critical stream zone buffer area.
- (c) Prohibited Uses. Due to the incompatible nature of certain uses (i.e. ground disturbance, untreated water discharge, hazardous materials, chemical contamination, scale of use, traffic, etc.) and the potential negative impacts on the perennial stream and adjoining critical stream zone buffer area, all new construction and development uses not listed in either the allowed or permitted section of this article shall not be established in the critical stream zone buffer area.
- (1) Residential, Civic, Commercial, Industrial and Agricultural Use Types. All new residential, civic, commercial, industrial and agricultural use types not listed as allowed or permitted uses are prohibited in the critical stream zone buffer area. Specifically prohibited industrial uses include:
 - (i) Aggregate facilities - permanent.
 - (ii) Aggregate facilities - temporary.
 - (iii) Energy production.
 - (iv) General industrial - heavy.
 - (v) Inoperable vehicle storage.
 - (vi) Mining operations.
 - (vii) Salvage yards.
 - (viii) Wholesaling, storage and distribution - heavy.
 - (2) Parking and Ornamental Landscaping. All new parking and ornamental landscaping areas to fulfill the minimum requirements for new residential, civic, commercial, industrial or agricultural use types shall be prohibited in the critical stream zone buffer area.
 - (3) Fences. In order to prevent livestock from destroying the stream bank slope, all new perpendicular-oriented fences except as provided in Section 110.418.20(a)(10) shall be prohibited in the critical stream zone buffer area. Fencing that is parallel to the stream and is designed to keep livestock from access to the water and stream bank may be permitted after review and approval by the Department of Community Development.

Section 110.418.25 Sensitive Stream Zone Buffer Area Development Standards. All development in the sensitive stream zone area shall be subject to the following standards:

- (a) Allowed Uses. All allowed uses within the critical stream zone buffer area are also allowed in the sensitive stream zone buffer area. Additional allowed uses in the sensitive stream zone buffer area include:
 - (1) Single family, detached residential uses and all related accessory uses associated with the single family residence requiring a building permit issued by the Washoe County Building and Safety Department. Attached or detached accessory dwellings in conformance with Article 306, Accessory Uses and Structures, may also be erected within the sensitive stream zone buffer area. New building structures such as storage sheds and gazebos that, due to their minimum floor area, do not require a building permit issued by the Washoe County Building and Safety Department may also be erected within the sensitive stream zone buffer area.
 - (2) Landscaping area requirements in accordance with Article 412, Landscaping, including ornamental landscape planting, may be satisfied by using the sensitive stream zone buffer area to count towards the required area to be landscaped for new residential, civic, commercial, industrial or agricultural use types. Parking and loading areas on the developed portion of the site shall continue to require landscaping. Open space requirements in accordance with Article 432, Open Space Standards, may be satisfied by using the natural, undisturbed or restored sensitive stream zone buffer area.
 - (3) New fencing, constructed in accordance with Washoe County Code.
- (b) Permitted Uses Requiring a Board of Adjustment Approved Special Use Permit Subject to the Provisions of Article 810, Special Use Permits. Subject to the regulatory zone in effect for the property establishing the uses as specified in Article 302, Allowed Uses, all new use types may be permitted in the sensitive stream zone buffer area pursuant to a special use permit being issued by the Washoe County Board of Adjustment according to the provisions of Article 810, Special Use Permits, and this article. The special use permit requirement is also applicable to construction or enlargement of any public or private roads, driveway, structure or facility including drainage facilities, water conveyance structures, dams, trails, and any public or private utility facility used to provide transportation, electric, gas, water, telephone, telecommunication or other services. New residential, commercial and industrial subdivisions processed in accordance with Article 608, Tentative Subdivision Maps, shall not require the concurrent processing of a special use permit, as long as the "Special Review Considerations" of this article are addressed in the tentative subdivision map review. Any construction in the sensitive stream zone buffer area will require submission of a grading plan showing compliance with applicable best management practices as defined by the Washoe County Department of Public Works to minimize stream bank and stream bed erosion. The grading plan shall also be designed to prevent construction drainage and materials from increasing sedimentation impacts to the stream environment and to minimize impervious surfaces.

- (c) Prohibited Uses. Due to the incompatible nature of certain uses (i.e. ground disturbance, untreated water discharge, hazardous materials, chemical contamination, scale of use, traffic, etc.) and the potential negative impacts on the perennial stream and adjoining sensitive stream zone buffer area, the following uses shall not be established in the sensitive stream zone buffer area:
- (1) Aggregate facilities - permanent.
 - (2) Aggregate facilities - temporary.
 - (3) Energy production.
 - (4) General industrial - heavy.
 - (5) Inoperable vehicle storage.
 - (6) Mining operations.
 - (7) Salvage yards.
 - (8) Wholesaling, storage and distribution - heavy.

[Added by Ord. 1112, provisions eff. 2/15/01, amended by Ord. 1378, provisions eff. 8/1/08.]

Section 110.418.30 Special Review Considerations. In addition to the findings required by Article 810, Special Use Permits, prior to approving an application for development in the critical stream zone buffer area or the sensitive stream zone buffer area, the record at the Board of Adjustment shall demonstrate that the following special review considerations are addressed:

- (a) Conservation of topsoil;
- (b) Protection of surface water quality;
- (c) Conservation of natural vegetation, wildlife habitats and fisheries;
- (d) Control of erosion;
- (e) Control of drainage and sedimentation;
- (f) Provision for restoration of the project site to predevelopment conditions;
- (g) Provision of a bonding program to secure performance of requirements imposed; and
- (h) Preservation of the hydrologic resources, character of the area and other conditions as necessary.

[Added by Ord. 1112, provisions eff. 2/15/01, amended by Ord. 1378, provisions eff. 8/1/08.]

Section 110.418.35 Common Open Space Development. New residential subdivision requests with a protected perennial stream on the property are encouraged to submit in accordance with the provisions of Article 408, Common Open Space Development. A tentative subdivision map that protects the critical stream and the sensitive stream zone buffer areas in a natural, undisturbed or restored state as part of the common open space area is presumed to meet the

required finding as specified in Article 608, Tentative Subdivision Map, Section 110.608.25(e) as follows:

"Fish or Wildlife. That neither the design of the subdivision nor any proposed improvements is likely to cause substantial environmental damage, or substantial and avoidable injury to any endangered plant, wildlife or their habitat".

[Added by Ord. 1112, provisions eff. 2/15/01.]

Section 110.418.40 Modification of Standards. Modification of standards, including interpretation of the applicability of the standards in this section, shall be set forth as follows:

- (a) 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. Appeals shall be processed under the provision of Article 810, Special Use Permits, Section 110.810.50, Appeals.
- (b) Special Exceptions. The Board of County Commissioners shall hear and decide requests for special exceptions from the requirements of this article. In passing upon such applications, the Board of County Commissioners shall consider all technical evaluations and all relevant requirements, factors and standards specified in this article and shall also consider the provisions of this subsection:
 - (1) The potential degradation of the stream environment.
 - (2) The danger to life and property due to flooding or erosion damage.
 - (3) The loss of critical habitat.
- (c) Issuance of Special Exception. Special exceptions shall only be issued when in compliance with the provisions of this section and the Board of County Commissioners finds:
 - (1) A showing of good and sufficient cause such as renovation, rehabilitation or reconstruction of the stream environment; or
 - (2) A determination that failure to grant the special exception would result in exceptional hardship to the applicant, such as deprivation of a substantial use of property and that the granting of a special exception will not result in degradation of the stream environment.
- (d) Extent of Special Exception. Special exceptions shall only be issued upon a determination that the special exception is the minimum necessary to afford relief.
- (e) Conditions of Special Exceptions. Upon consideration of the factors set forth in this section and the purpose of this article, the Board of County Commissioners may attach such conditions to the granting of special exceptions as it deems necessary to further the purpose of this article.

[Added by Ord. 1112, provisions eff. 2/15/01.]

Article 420

STORM DRAINAGE STANDARDS

Sections:

110.420.00	Purpose
110.420.05	Applicability
110.420.10	Relation to Other Standards
110.420.15	Authorization of Alternative Standards
110.420.20	General Requirements
110.420.25	Other Improvements/Requirements (Public and Private)
110.420.30	Drainage Easements
110.420.35	Water Supply Ditches
110.420.40	Setbacks from Drainage Ways

Section 110.420.00 Purpose. The purpose of this article, Article 420, Storm Drainage Standards, is to set forth standards for ensuring that both private and public development provides adequate protection for citizens and property, minimizes and controls erosion and pollution impacts on the natural environment, and minimizes maintenance costs for drainage and flood control systems within Washoe County.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.420.05 Applicability. Per Article 910, Section 110.910.10, any building or structure erected or maintained or any use of property contrary to the provisions of the Development Code (Chapter 110, in its entirety) shall be and is hereby declared to be unlawful and a public nuisance. This includes requirements and publications incorporated therein by reference. Responsibility for enforcement is adopted in Section 110.910.05 of the Development Code.

The provisions of this article 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; and subdivisions utilizing a grading permit;
 - (3) Projects in, containing or abutting a floodplain or Critical Flood Zone 1, stream, lake or major drainage facility; and
 - (4) Other projects as required by the County Engineer.
- (b) Projects that may require a Drainage Report:
 - (1) Parcel Maps;
 - (2) Projects requiring a special use permit;

- (3) Projects requiring a building permit; and
- (4) Projects requiring a grading permit.

[Added by Ord. 908, provisions eff. 10/15/94; Amended by Ord. 1425, provisions eff. 1/22/10.]

Section 110.420.10 Relation to Other Standards. The standards set forth in this article make reference to and shall be used in conjunction with the *Standard Specifications for Public Works Construction* and *Standard Details for Public Works Construction*, American Association of State Highway Transportation Officials (AASHTO) guidelines, the Truckee Meadows Regional Drainage Manual, Truckee Meadows Construction Site Best Management Practices Handbook, Truckee Meadows Structural Controls Design Manual and the Truckee Meadows Low Impact Development Handbook, latest editions.

[Added by Ord. 908, provisions eff. 10/15/94; Amended by Ord. 1425, provisions eff. 1/22/10.]

Section 110.420.15 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 article, 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 Specifications for Public Works Construction*, and 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 the equivalent of the design requirements as set forth in this code; and
 - (2) The alternative standards shall not be used for purposes of mere convenience or economy and the alternative must have equal or better function, quality, and safety.

[Added by Ord. 908, provisions eff. 10/15/94; Amended by Ord. 1425, provisions eff. 1/22/10.]

Section 110.420.20 General Requirements. The requirements set forth in this section shall apply to all development subject to this article.

- (a) The Truckee Meadows Regional Drainage Manual shall be the basis for all drainage design unless it is in conflict with this article, in which case the criteria in this article shall apply.
- (b) Off-site Stormwater Discharge. Discharge of the 100-year storm 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. A major drainage facility is a channel or drainage way that has a drainage basin of one hundred (100) acres or more.
- (c) 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 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, natural water course, or a permanent surface drainage easement capable of conveying the drainage flows.

- (1) Where by reason of terrain or other circumstances the County Engineer 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 110.420.15 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 110.420.35.
- (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) Be in compliance with Development Code Article 418, Significant Hydrologic Resources.
- (e) Flood Storage Zones. Development of property shall not adversely affect the flood storage zones and shall be in compliance with Development Code Article 416, Flood Hazards, and the Critical Flood Storage Ordinance.
- (f) Detention. On-site detention requirements for the 5-year and 100-year storms are as follows:
 - (1) For a 5-year storm, detention of the difference in peak runoff between the developed and undeveloped conditions shall be required; and
 - (2) For a 100-year storm, detention of the difference in peak runoff between the developed and undeveloped conditions shall be required.
- (g) Erosive Soils/Sediment Control. Design of drainage systems in erosive soils may require the following in order to protect against plugging of the drainage system and to minimize maintenance as determined by the County Engineer:
 - (1) Construction of sedimentation basins: The design shall calculate the annual sediment yield (in tons and cubic yards) from all on-site and off-site contributing areas. The calculation for sediment yield can be done using the Revised Universal Soil Loss Equation (RUSLE) or other methods acceptable to the County Engineer;
 - (2) Oversizing of storm drain pipes and ditches;
 - (3) Steepening of pipe and channel grades;
 - (4) Use of self-cleaning channel lining; and

- (5) Rear-yard landscaping.
- (h) Low Impact Development (LID) Handbook. Use of the LID Handbook is encouraged to the maximum extent practicable and should be complementary with Article 420, Storm Drainage Standards. The following are exceptions to the LID Handbook:
 - (1) Porous pavement cannot be used for construction of County streets.
 - (2) LID improvements cannot be used in lieu of curb and gutter, unless specifically approved by the County Engineer.
 - (3) LID features on individual residential lots cannot be considered to reduce calculated stormwater flows unless directed to a central LID collection feature that is maintained by a Homeowners Association (HOA) or other acceptable maintenance organization.
 - (4) LID features shall not cause damage to County owned pavement section or other facilities.
 - (5) LID facilities shall be maintained by HOA's or other approved responsible private party.
- (i) Wetlands. When the U.S. 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 Community Development and the County Engineer. Any construction proposed in the wetland will require a permit from the C.O.E. with a copy provided to the County Engineer prior to construction.
- (j) Waters of the State of Nevada. Any work which requires fill intended 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 County Engineer shall receive a copy of this permission prior to issuance of any permit.
- (k) Construction within a 100-Year Floodplain. Embankments and 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 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 outlined in Section 110.416.70. Development within areas shown on the Flood Insurance Rate Map (FIRM) shall comply with Article 416, Flood Hazards.
- (l) 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 manner of discharge shall be approved by the County Engineer and the discharge must produce no significant adverse impacts to the downhill property. Surface flows should cross a property line within historic drainage ways and in a similar manner and quantity (or less) as the predeveloped conditions.

- (m) 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.
- (n) 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.
- (o) Irrigation Waters. Irrigation waters not controlled by a ditch or utility company and storm drain waters shall be conveyed by separate systems.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1022, provisions eff. 7/1/98; Ord. 1425, provisions eff. 1/22/10.]

Section 110.420.25 Other Improvements/Requirements (Public and Private).

- (a) Minimum Pipe Diameter. Minimum pipe diameter for any public storm drain shall be twelve (12) inches.
- (b) Maintenance Access Roads. Access roads in a minimum easement width of twenty (20) feet shall be constructed in accordance with Development Code Article 436, Street Design Standards, when required by the County Engineer.
- (c) Corrugated Metal Pipe. Corrugated metal pipe is not acceptable for use in County-owned storm drain systems.
- (d) Storm Water Piping. Storm drains to a major drainage facility shall extend, in the direction of flow, at a minimum, to the 100-year flood line and be rip rapped from the outlet to the bottom of the channel. Channel modifications for erosion control shall be designed so that the receiving channel or entering channel will contain the flows without erosion. Channel alignment geometry shall minimize the depositing of stormwater sediment.
- (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 flooding during storms that exceed the 5-year storm, up to and including the 100-year storm.
- (f) Public Drainage Facilities. Constructed public drainage facilities with design flows of sixty (60) cubic feet per second or less shall be piped in accordance with County standards. Constructed drainage facilities with flows exceeding sixty (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 stiffness when design requires a higher pipe support strength is allowed when installed and tested in accordance with procedures in the Standards Specifications for Public Works Construction (Orange Book).
- (h) Headwalls. Standard headwalls or flared end sections shall be placed on the inlet and outlet of all public pipe and culverts. Pipes up to and including seventy-

two (72) inches in diameter shall comply in all cases with County design, size and material standards. Headwalls for pipes exceeding seventy-two (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, as per Washoe County *Standard Details for Public Works Construction*, 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 maximum allowable pipe deflection, at changes in conduit size, and at the end of public lines, unless otherwise approved by the County Engineer.
 - (1) When permitted by the County Engineer, pipe placed on curves (horizontal and vertical) shall meet manufacturer's recommendations 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 at intervals not greater than three hundred (300) feet unless otherwise approved by the County Engineer.
- (l) Catch Basins. Catch basins are to be designed and located in accordance with 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) 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);
 - (3) Oil Socks, or an approved equal, shall be installed within all catch basins to provide pre-treatment for petrochemicals;
 - (4) Sheet flow across intersections is not permitted; and
 - (5) "Bubble up" type outlet basins are not permitted.
- (m) Drainage Facilities Crossing Under County Roadways. Drainage structures crossing under County roadways shall be designed to pass the 100-year storm flow resulting from a fully developed condition within the watershed. A depressed roadway section, or alternative route as approved by the County Engineer, shall be provided in the event stormwater flows overtop the roadway.

- (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 (1) foot above the 100-year flood line. Development within areas shown on the Flood Insurance Rate Map (FIRM) shall comply with Article 416, Flood Hazards.
- (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 collecting runoff from the area of two (2) or more lots are to be paved in accordance with County standards and are to be maintained and perpetuated by the property owners. Paving is not required for common side lot swales serving only two (2) adjacent lots.
 - (2) Standard lot line drainage swales are to be designed to carry the waters generated by a 100-year storm with a maximum six (6) lots contributing run-off to the swale. Discharge from swales shall be conveyed to a public drainage facility. Should it be necessary to provide for drainage from more than six (6) lots and/or to exceed the maximum horizontal or vertical alignment, a modified design capable of conveying the run-off from the 100-year storm may be submitted for review by the County Engineer.
 - (3) Easement requirements for lot drainage swales shall be established as a note on the official plat which reads: "A five (5) foot private drainage easement shall be located along all side and rear lot lines."

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1023, provisions eff. 7/1/98; Ord. 1022, provisions eff. 7/1/98. Renumbered from 110.420.35 and renamed from "Design/Improvement Requirements" amended by Ord. 1425, provisions eff. 1/22/10.]

Section 110.420.30 Drainage Easements. Easements shall be provided in accordance with the provisions set forth in this section.

- (a) Maintenance Access. Drainage easements with improved vehicular access in accordance with County standards shall be provided to publicly and privately owned storm drain manholes, storm drain inlets and outlets, ditches and associated structures not located within an improved street section. The portion of the easement used for vehicular access shall be a minimum of twenty (20) feet or as determined by the County Engineer.
- (b) Easement Widths. Storm drain easements for public and private improvements shall be a minimum width of twenty (20) feet. The easement width shall be determined by pipe or ditch width, required trench clearance, and excavated

trench side slopes not less than one horizontal to one vertical (1:1), and as approved by the County Engineer.

- (c) **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 the boundaries of a development discharge from a public drain system onto or across private property, a permanent easement for access and maintenance shall be created 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 and the County Engineer shall determine if the easement(s) are to be accepted for maintenance.
- (d) **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. Improved vehicular access in accordance with County standards shall be provided when determined necessary by the County Engineer.

[Added by Ord. 908, provisions eff. 10/15/94. Renumbered from 110.420.40 and renamed from "Easements" amended by Ord. 1425, provisions eff. 1/22/10.]

Section 110.420.35 Water Supply Ditches. Water supply ditches shall be designed in accordance with the conditions set forth in this section.

- (a) **Public and Private Storm Drainage Runoff.** No discharge of runoff from a public or private storm drain into a water supply ditch shall be allowed unless otherwise approved by the ditch or utility company and the County Engineer. Post development sheet flow into a water supply ditch shall not exceed pre-development sheet flow.
- (b) **Access.** Where water supply ditches are located within or adjacent to a proposed development, access and maintenance of the ditch shall not be hindered.
- (c) **Improvements within Easements.** Any improvements within the ditch company's easements are subject to the ditch company's approval.
- (d) **Ditch or Watercourse Hazard.** Fencing is required in accordance with Development Code Section 110.610.30(f).

[Added by Ord. 908, provisions eff. 10/15/94. Renumbered from 110.420.45 and amended by Ord. 1425 provisions eff. 1/22/10.]

Section 110.420.40 Setbacks from Drainage Ways.

- (a) The following minimum setbacks for structures shall be maintained from the centerline of drainage ways which are not classified as perennial streams:
 - (1) Fifteen (15) feet from the centerline of incidental drainage ways [drainage area less than one thousand (1,000) acres].
 - (2) Twenty-five (25) feet from the centerline of secondary drainage ways [drainage area one thousand (1,000) to five thousand (5,000) acres].

- (3) Fifty (50) feet from the centerline of major drainage ways [drainage area greater than five thousand (5,000) acres].
- (b) The setbacks may be modified upon submission and approval of plans for construction of improvements to drainage ways in question. Improvements shall provide capacity within drainage ways for the free unobstructed passage of the required flood flow quantity as determined by an approved hydrologic/hydraulic analysis.
- (c) The County Engineer may require that any such improvement conform to any master plan of drainage as may be presently or hereafter adopted by Washoe County.

[Section 110.420.40, was added by Ord. 1500, provisions eff. 11/2/12; the above language was originally added to Article 438, Grading Standards, Section 110.438.90 by Ord. 1236, provisions eff. 5/21/04.]

[Section 110.420.25, Drainage Report Contents, and Section 110.420.30, Site Drainage and Grading Plans, deleted by Ord. 1425, provisions eff. 1/22/10; Section 110.420.40, Setbacks from Drainage Ways, added by Ord. 1500, provisions eff. 11/2/12.]

Article 422

WATER AND SEWER RESOURCE REQUIREMENTS

[This Article amended in its entirety by Ord. 876, provisions eff. 7/7/93; Ord. 1026, provisions eff. 7/1/98.]

Sections:

110.422.00	Purpose
110.422.01	Exceptions
110.422.05	Applicability
110.422.10	Water Resources
110.422.15	Water Rights Satisfaction
110.422.20	Authority to Utilize Dedicated Water Rights and Collect Administrative Fees
110.422.25	Water Facilities
110.422.30	Contracts for Water Rights and Water Facilities
110.422.35	Sanitary Sewer Facilities
110.422.40	Facility Standards

Section 110.422.00 Purpose. Except as set forth below, the purpose of this article, Article 422, Water and Sewer Resource Requirements, is to control the practices and procedures related to the dedication of water resources, water delivery facilities, and sanitary sewer collection facilities for all types of development in the unincorporated portion of the County to insure water supply and sewage treatment to adequately protect the public health and safety.

Section 110.422.01 Exceptions. The provisions of this article do not apply to development within the Tahoe planning area and receiving water and sewer service from any water and/or sewer provider operating within the Lake Tahoe Hydrographic Basin.

Section 110.422.05 Applicability. The provisions of this article shall apply to all permits, approvals or development projects of any kind in the County which require the use of water resources, require water supply delivery, or require sewage treatment. Adequate water resources are required for all new development, including:

- (a) Subdivisions with Individual Wells. Subdivision and parceling of land creating new parcels of forty (40) acres or less, with the potential to be served by individual domestic wells, except that new parcels larger than forty (40) acres may be required to have adequate water resources if a water budget has been adopted for the groundwater basin by the County Commission;
- (b) Subdivisions with Community Water Systems. Subdivision and parceling of land creating new parcels of forty (40) acres or less, with the potential to be served by a community water system;
- (c) Residential Development. Development creating new residential dwellings, including multi-family dwelling units and mobile home dwelling units;

- (d) Non-Residential Development. Development creating new commercial, industrial or civic buildings or uses; and
- (e) Other Development. Development requiring any other permit or approval with the exception of a building permit for a single residence on an existing lot recorded prior to the effective date of Washoe County Ordinance Number 586, which is January 10, 1984.

Section 110.422.10 Water Resources. The development owner or property owner shall be required to dedicate to Washoe County, as a condition precedent to the permit or approval, any water rights reasonably necessary to insure an adequate water supply for the intended or permitted use. The amount of water rights necessary shall be determined by the Washoe County Department of Water Resources, Utility Services Division, and the State Engineer. In the event the state and the County have different requirements under this section, both the County and state requirements, and the most stringent of the two, must be satisfied. The development owner or property owner shall be required to have sufficient water rights transferred to each water well or delivery system.

Section 110.422.15 Water Rights Satisfaction. The dedication of water rights and facilities required by this article will be satisfied if the development owner or property owner enters into an agreement with the County, secured by a performance bond or other undertaking acceptable to the County. The agreement must constitute a binding offer to dedicate, conditioned only upon failure to receive final project approval or, in cases where a building permit is the only approval needed, failure to receive a building permit for the project. No building permit or recordation of a subdivision map shall be granted until dedication is accepted or an agreement conforming to this section has been accepted by the Washoe County Commission. The Department of Water Resources, Utility Services Division, will evaluate the water rights offered for dedication based on, but not limited to, the following criteria:

- (a) Adequacy of Amount. The adequacy of the amount of water resources offered for dedication to the County for the intended use;
- (b) Proximity of Source. The proximity of the hydrologic basin or source of water offered for dedication to the County for the intended use;
- (c) Proof of Ownership. Valid proof of ownership, including a chain of title to the original water right holder, for the water rights offered for dedication to the County;
- (d) Status of Water Right. The priority and yield of the water right, the current manner and place of use, and the status of the permits or certificates issued by the State Engineer, or the status of the water right established in a court decree, which are offered for dedication to the County; and
- (e) Point of Diversion. The ability of the County to obtain from the State Engineer the necessary permits to change the point of diversion, and the manner and place of use of the water right for the intended use.

Section 110.422.20 Authority to Utilize Dedicated Water Rights and Collect Administrative Fees. The Department of Water Resources, Utility Services Division, or any other appropriate County department, division or agency, may:

- (a) Applications to State Engineer. File applications with the State Engineer's Office to change the point of diversion, and the manner and place of use of the

dedicated water rights to put the water resources to beneficial use and to otherwise utilize and maintain the validity of the dedicated water rights; and

- (b) Applicants Responsibilities. Require the development owner or property owner to:
- (1) Pay all State Engineer's Office application fees to transfer the dedicated water rights to the proposed delivery facilities;
 - (2) Allow County personnel to enter the property in order to read water meters on all wells and delivery facilities, or perform other related inspections as necessary;
 - (3) Comply with the terms of the water right permits or certificates as issued by the State Engineer's Office; and
 - (4) Pay reasonable administrative fees and services fees to read and maintain water meters or carry out other activities as necessary to maintain the validity of the dedicated water right. Fees required under this subsection shall be adopted in the special ordinances governing water service.

Section 110.422.25 Water Facilities. The development owner or property owner shall be required to dedicate any facilities for water treatment, supply, storage, transmission and distribution, and appurtenances such as wells, pipelines, pumps and storage tanks located within or outside the property boundary or subdivision which are necessary to insure an adequate water supply to a project or development. This section applies to facilities that will be constructed to serve a project or development, except:

- (a) Single-Family Dwelling. Facilities to serve one single-family dwelling in an existing subdivision;
- (b) Previous Facilities. Facilities which were previously constructed to serve existing users; and
- (c) Utility Facilities. Facilities, whether new or existing which are enlarged or improved in order to serve the proposed development or subdivision, which were owned and operated by a utility on the effective date of Washoe County Ordinance Number 586 dated January 10, 1984, operating under a certificate of public convenience and necessity issued by the Nevada Public Service Commission.

Section 110.422.30 Contracts for Water Rights and Water Facilities. The Water Resources Department, Utility Services Division, may enter into contracts, subject to approval of the Washoe County Commission, permitting the use of the dedicated water rights and facilities by other governmental entities, public and private utilities, and any other persons engaged in providing water service.

Section 110.422.35 Sanitary Sewer Facilities. The development owner or property owner shall be required to dedicate any facilities for sewage collection, treatment and disposal, and appurtenances such as pipelines and pumps located within or outside the property boundary or subdivision which are necessary to insure adequate sanitary sewer collection and disposal to a project or development. This section applies to facilities that will be constructed to serve a project or development, except:

- (a) Single-Family Dwelling. Facilities to serve one single-family dwelling in an existing subdivision;
- (b) Previous Facilities. Facilities which were previously constructed to serve existing users; and
- (c) Utility Facilities. Facilities, whether new or existing which are enlarged or improved in order to serve the proposed development or subdivision, which were owned and operated by a utility on the effective date of Washoe County Ordinance Number 586 dated January 10, 1984, operating under a certificate of public convenience and necessity issued by the Nevada Public Service Commission.

Section 110.422.40 Facility Standards. The following standards apply to all water delivery and sanitary sewer collection facilities:

- (a) Design. The facilities offered for dedication or subject to a dedication agreement must be designed and constructed in accordance with standards and other requirements established by ordinance or recommended by the Department of Water Resources, Utility Services Division, as a condition of either project approval or the issuance of a building permit. Standards and other requirements may include plan checking, design review, inspections, systems testing and other matters to be determined by the Department of Water Resources, Utility Services Division.
- (b) Required Dedications and Acceptance. The facilities required to be dedicated shall be determined by the Department of Water Resources, Utility Services Division. The Department of Water Resources, Utility Services Division, will accept a dedication pursuant to this section if the facilities conform to the requirements of this section and perform as designed.
- (c) Issuance of Permits. Except for permits issued for the construction of facilities to be dedicated, no building permit or special use permit may be issued and no other administrative approval may be granted until the dedication is accepted or an agreement conforming to this article has been executed. Unless issued for the construction of a facility to be dedicated, any permit or approval for which application has been made subsequent to the effective date of Washoe County Ordinance Number 586, which is January 10, 1984, and issued prior to the dedication is void.

Article 424

HILLSIDE DEVELOPMENT

Sections:

110.424.00	Purpose
110.424.05	Applicability
110.424.10	Exemptions
110.424.15	Application Requirements and Procedures
110.424.20	Determination of Developable Area
110.424.25	Protected Open Space Areas
110.424.30	Site Development Standards
110.424.35	Grading and Drainage Standards
110.424.40	Vegetation Preservation and Restoration Standards
110.424.45	Street Standards
110.424.50	Fire Safety Standards

Section 110.424.00 Purpose. The purpose of this article, Article 424, Hillside Development, is to regulate hillsides in a manner different from regulation of flat terrain. This article establishes provisions for developing, preserving and protecting hillsides and ridgelines within Washoe County. The intent of these regulations is to protect the public health, safety and welfare by:

- (a) Minimizing use of slopes subject to instability, erosion, landslide, flood hazards or drainage problems;
- (b) Minimizing the careless alteration of and disruption to the natural topography and landscape;
- (c) Providing safe and adequate vehicular and pedestrian access to and within hillside areas, including emergency access;
- (d) Establishing stormwater runoff and erosion control techniques to minimize adverse water quality impacts resulting from non-point runoff;
- (e) Encouraging innovative grading techniques and building design which respond to the hillside terrain and natural contours of the land;
- (f) Minimizing impacts on existing trees and vegetation which reduce erosion, stabilize steep hillsides, enhance visual quality, protect water quality and preserve critical watershed recharge areas;
- (g) Encouraging the transfer of density to avoid hazardous areas and to protect environmentally sensitive and open space areas; and
- (h) Minimizing impacts on prominent ridgelines, significant viewsheds, canyons and visually prominent rock outcroppings which reflect the visual value and scenic character of hillside areas.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.05 Applicability. The provisions set forth in this article shall apply as follows:

- (a) Hillside and Ridgeline Development. This article applies to all new development that requires permitting or review by the County and meets the following criteria:
 - (1) Properties containing slopes in excess of fifteen (15) percent or greater on 20 percent or more of the site.
- (b) Relationship to Other Articles. The requirements established in this article shall supplement requirements found in other articles of the Washoe County Development Code. If the provisions of this article are in conflict with other statutes, ordinances or regulations, the more stringent limitation or requirement shall prevail to the extent of the conflict.
- (c) Application of this Article to the Tahoe Planning Area. The provisions of this article may be waived by the Director of Community Development for development in areas under the jurisdiction of the Tahoe Regional Planning Agency (TRPA).

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.10 Exemptions. The following use types are exempt from the provisions of this article:

- (a) Residential Use Types. The following residential use types are exempt from the provisions of this article:
 - (1) Minor subdivisions as specified in Article 606, Parcel Maps, are exempt from the provisions of this article with the exception of Section 110.424.45, Street Standards. The exemption of minor subdivisions applies only to the first parcel map on any one parcel. Any subsequent divisions on the original or newly created parcels are not exempt from the provisions of this article.
 - (2) A parcel entitled to one dwelling unit legally recorded as of January 18, 1994, the adoption date of this article.
 - (3) All existing tentative maps and phased final maps, currently unexpired and having obtained preliminary approval prior to January 18, 1994, the adoption date of this article, are exempt from the provisions of this article.
 - (4) All projects with an approved design standards handbook and/or development agreement, currently unexpired and having obtained preliminary approval prior to January 18, 1994, the adoption date of this article, are exempt from the provisions of this article.
- (b) Civic Use Types. Uses classified under the parks and recreation use type are exempt.
- (c) Commercial Use Types. Uses classified under the nursery sales use type are exempt.

- (d) Industrial Use Types. Uses classified under the mining operations use type, excluding aggregate mining operations, and addressed under the provisions of Article 334, Mining, are exempt.
- (e) Agricultural Use Types. Uses classified under the animal production, crop production, forest products, game farms, and produce sales use types are exempt.
- (f) Open Space Regulatory Zones. Uses classified under the open space regulatory zone are exempt.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.15 Application Requirements and Procedures. Supplemental to all other application requirements found in the Washoe County Development Code, the following submittals shall be required for all hillside development:

- (a) Site Analysis. A site analysis, prepared by a qualified engineer, planner, landscape architect or architect shall be submitted. This analysis shall provide the basis for assessing the opportunities and constraints of the site for development and shall be in the form of a design standards handbook incorporating both textual and graphical representations of the requested action. At a minimum, a site analysis shall indicate:
 - (1) Major topographic conditions including ridgelines, ravines, canyons and knolls;
 - (2) Preliminary geological conditions including major rock outcroppings, slide areas and areas underlain with faults that have been active during the Holocene epoch of geological time;
 - (3) Preliminary soil conditions including soil type, expansiveness, slumping, erodibility and permeability;
 - (4) Significant surface hydrological conditions including natural drainage courses, perennial streams, floodplains, wetlands and ponding areas;
 - (5) The location and types of significant vegetation including known rare and endangered plant species and general plant communities;
 - (6) Habitat areas for rare or endangered animal species;
 - (7) Preliminary viewshed analysis including cross sections of views to and from the development site from all major roadways within one (1) mile of the project site, and from major focal points on the project site;
 - (8) How the development responds to the unique conditions of the hillside; and
 - (9) A slope analysis, submitted on a topographic map with contour intervals of at least five (5) feet for planning purposes. This analysis shall indicate the location and amount of land included within the following slope categories, tabulated in acres:

- (i) 0 - 15 percent;
 - (ii) 15 - 20 percent;
 - (iii) 20 - 25 percent;
 - (iv) 25 - 30 percent; and
 - (v) Greater than 30 percent.
- (b) Developable Area Map. A developable area map, prepared pursuant to Section 110.424.20(b).
- (c) Constraint and Mitigation Analysis. A detailed analysis of how the identified constraints will be mitigated and incorporated into the project's design.
- (d) Washoe County Master Plan Amendment. All applicants proposing a hillside development requiring a Washoe County Master Plan amendment shall enter into a development agreement with Washoe County pursuant to Article 814, Development Agreements. Supplemental to all other requirements, development agreements for hillside development shall contain the following:
 - (1) Agreement by the applicant to seek a Washoe County Master Plan amendment;
 - (2) Agreement by Washoe County to process a Washoe County Master Plan amendment request pursuant to the requirements listed in Article 820, Amendment of Master Plan;
 - (3) Site analysis as required under Section 110.424.15(a);
 - (4) Developable area analysis as required under Section 110.424.20; and
 - (5) Calculation and location of density being proposed.
- (e) Detailed Contour Analysis. As determined through a pre-application meeting between the applicant and the Department of Community Development, a topographic map with more or less detailed contour intervals may be required by the Director of Community Development for design purposes.

[Added by Ord. 893, provisions eff. 3/4/94; Ord. 1447, provisions eff. 9/9/10.]

Section 110.424.20 Determination of Developable Area. To determine the location and amount of land suitable to support development, a developable area analysis is required on a hillside property.

- (a) Purpose. The purpose of identifying the developable area of a hillside is to designate those areas suited for development and construction as evidenced by soils, geotechnical, biological and hydrological investigations and studies. A developable area analysis is required to ensure that the proposed project complies with the intent, standards and requirements of this article.
- (b) Developable Area Map. The developable area analysis shall be in the form of a developable area map; shall be drawn at a scale appropriate to the project; shall

identify the location and amount of total land area suitable for development pursuant to Section 110.424.20(c); and shall be prepared by a qualified engineer, planner, landscape architect or architect.

- (c) Determination of Developable Area. Areas considered less suitable for development include:
- (1) Slopes greater than thirty (30) percent, based on a slope analysis pursuant to Section 110.424.15(a);
 - (2) Areas of landslides or landslide potential;
 - (3) Areas underlain with faults that have been active during the Holocene epoch of geological time;
 - (4) Habitat areas of known rare or endangered plant or animal species; and
 - (5) Significant streams, ravines and drainageways.
- (d) Exceptions. Development shall be permitted within areas of a hillside property considered less suitable for development by the Director of Community Development due to extenuating circumstances, provided the applicant can demonstrate that:
- (1) The purposes of this article will not be compromised;
 - (2) Unstable slopes proposed for development will be sufficiently stabilized;
 - (3) Areas of landslide or landslide potential proposed for development will be stabilized;
 - (4) Earthquake resistant structures will be constructed on development sites proposed on potential earthquake areas;
 - (5) Areas of rare and endangered animal or plant habitat proposed for development will be relocated and mitigation measures adhered to; and
 - (6) Significant ridgelines, rock outcroppings, canyons and landforms will be protected to the greatest extent possible.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.25 Protected Open Space Areas. Any portion of a hillside development which has been deemed unsuitable for development pursuant to Section 110.424.20(c) shall be designated as permanent open space and shall be subject to the following provisions:

- (a) Permitted Uses. Uses permitted within the permanent open space areas shall be those that are directly related to the open space function of the land, are necessary to provide community services, or are necessary for the health, safety or welfare of the public. The following uses and facilities shall be permitted in the permanent open space areas:
- (1) Paved and unpaved pedestrian, equestrian and bicycle paths and trails;

- (2) Outdoor recreational uses and facilities such as golfing, skiing, fishing, hunting, boating, swimming, horseback riding, nature observation, community parks and picnic areas;
 - (3) Roads, bridges and culverts for vehicles, pedestrians, bicyclists or equestrians used to provide access to permitted open space uses or to developable areas, pursuant to Section 110.424.20(b);
 - (4) Installation, maintenance and operation of typical utilities; and
 - (5) Dams, swales, detention ponds and impoundment areas, wetlands and wetlands mitigation sites, and other structures necessary to prevent flooding and erosion, and to protect water quality.
- (b) Land Restriction. A deed restriction, easement, offer of dedication, or other conveyance describing limitations placed on the permanent open space areas of the property shall be recorded concurrent with the issuance of a development permit. The restriction shall include provisions for the management and maintenance of the property.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.30 Site Development Standards. This section sets forth development standards to address the physical and technical conditions unique to hillside and ridgeline property. In case of conflict between the provisions of this section and those of any other section of the Washoe County Development Code, the provisions of this section shall prevail unless otherwise determined by the Director of Community Development, County Engineer, or designated staff from the appropriate fire protection agency.

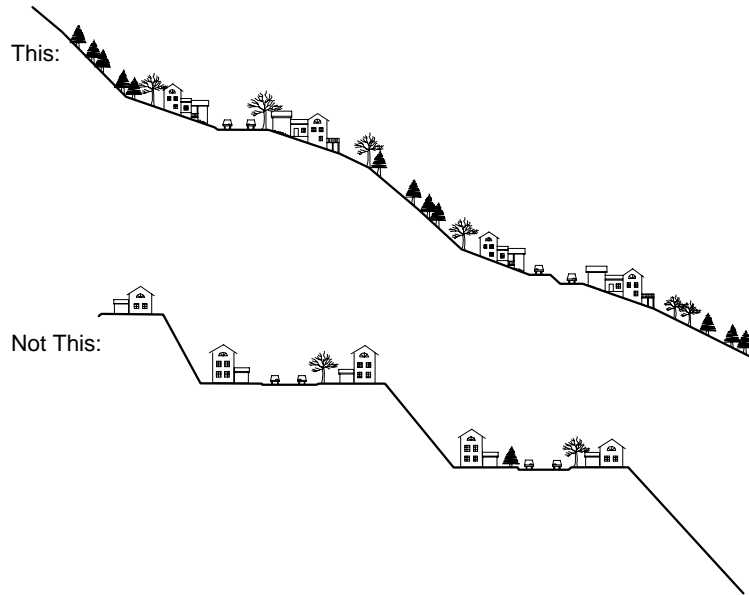
- (a) Building Location. The following standards are intended to encourage compatibility between development and the existing hillside and vegetation character:
- (1) Structures should be located on the natural slope of the land rather than on man-made pads and terraces as shown in Figure 110.424.30.1;
 - (2) Structures should be located in such a manner so as to retain or enhance views, particularly views from public places as identified in the required viewshed analysis pursuant to Section 110.424.15(a) and individual residential dwelling units;
 - (3) Development clusters shall be permitted, where appropriate, to preserve natural features, reduce grading and impervious surface area, increase usable open space areas, and preserve views of the hillsides;
 - (4) The character and profile of the hillside should be preserved by using existing, disturbed areas for building envelopes rather than undisturbed areas; and
 - (5) For projects with multiple buildings, structures should be sited in staggered arrangements and height variation to minimize a "walled" effect.

- (b) Building Design. The following standards are intended to encourage building design that is compatible to the character of hillsides and ridgelines and minimize alteration of the natural landforms:
- (1) Split-pad and stepped foundation shall be encouraged so that buildings step-down or step-up with the natural slope to avoid padding and terracing as shown in Figure 110.424.30.2;
 - (2) The use of decks and small patios shall be encouraged to reduce the amount of grading;
 - (3) Structures shall be designed to blend into the natural character of the hillside by reducing the visual bulk through landscaping, terraced building forms and height variations; and
 - (4) A series of smaller, visually distinct roofs, specifically pitched, gabled and hipped roofs, shall be encouraged to reflect the visual diversity of the natural hillsides.
- (c) Building Height. Buildings shall not exceed the maximum allowable height standards established in Article 402, Density/Intensity Standards.
- (d) Yards. The following standards are intended to ensure sloped yards are adequately maintained by the dwelling unit physically and visually accessing them:
- (1) Cut or fill slopes should be designed such that they are visible from the residence on the property in which they are located as shown in Figure 110.424.30.3. This will encourage property owners to stabilize, maintain and treat slopes to prevent erosion.
 - (2) Slopes adjacent to a roadway should be designed and maintained in a uniform manner.
 - (3) To promote creative site planning design, residential yard requirements as established in Article 406, Building Placement Standards, may be reduced by the Director of Community Development provided the applicant can demonstrate that the reduction:
 - (i) Does not diminish solar access to the primary living space or yard area of an adjoining residence;
 - (ii) Does not block views from adjoining lots and streets beyond that which would have occurred without the reduced yard allowance; and
 - (iii) Is consistent with the natural hillside character.
- (e) Parking and Sidewalks. The following standards are intended to ensure safe and adequate access to residential hillside development areas and to minimize the width of hillside roadways where feasible and as appropriate:

- (1) On lots fronting a street with on-street parking prohibited on both sides of the street, one (1) additional off-street parking space shall be provided per unit;
 - (2) The width of a driveway at curb cut shall not exceed twenty four (24) feet, and the distance between two (2) or more curb cuts on the same property shall be at least twenty (20) feet;
 - (3) To reduce the number of curb cuts, amount of grading, impervious surface area, and site disturbance, use of common driveways shall be encouraged by the Director of Community Development, provided that a common easement maintenance agreement is secured; and
 - (4) Tandem parking may be permitted by the Director of Community Development provided that the applicant can demonstrate that such configuration will reduce the amount of grading.
- (f) Lot Configuration. The following standards are intended to ensure platting of new lots which reflect the natural character of hillside properties as shown in Figure 110.424.30.4:
- (1) Stable and sufficiently usable areas of land for development shall be provided for each created lot;
 - (2) Building envelopes, disturbed areas and areas to remain undisturbed for each created lot shall be shown on the tentative and final maps;
 - (3) Reasonably safe and adequate access from public streets without requiring massive grading or substantial vegetation removal shall be required for each created lot; and
 - (4) Lot patterns which offer a variety of configurations shall be encouraged.
- (g) Fences and Walls. The following standards are intended to minimize the visual effect of excessive fencing and retaining walls in hillside and ridgeline development:
- (1) Multiple retaining walls shall be separated horizontally by a distance equal to at least the height of the lower retaining wall; and
 - (2) A series of smaller retaining walls shall be encouraged rather than one (1) large, uninterrupted wall.
- (h) Significant Natural Features. Significant natural features shall be protected and preserved where appropriate and feasible including, but not limited to, ridgelines, canyons, ravines, streams and creeks, natural drainages and rock outcroppings.
- (i) Open Space and Recreational Trails. Open space areas and recreational trails provided as part of a hillside development proposal shall be consistent with the adopted Washoe County policies and regulations for open space and recreational trails.

Figure 110.424.30.1

BUILDING LOCATION STANDARDS



Note: Encourage use of natural slope; discourage cut and fill development.

Source: Washoe County Department of Community Development.

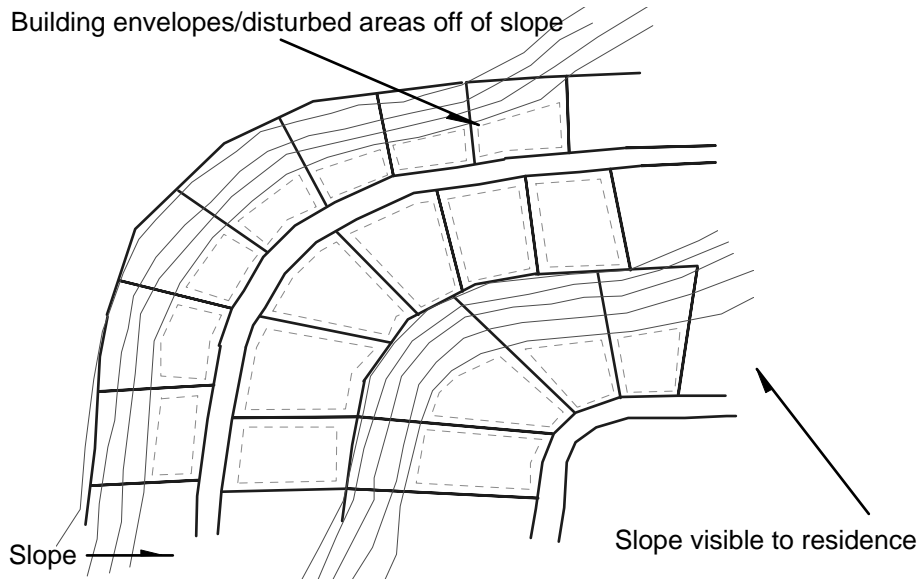
Figure 110.424.30.2

EXAMPLE OF SPLIT PAD AND STEPPED FOUNDATION DESIGN



Source: Washoe County Department of Community Development.

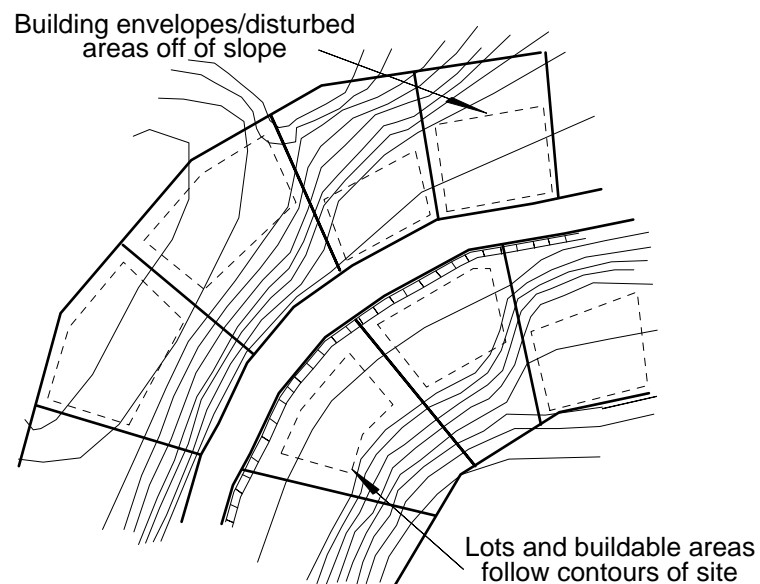
Figure 110.424.30.3
SLOPE OWNERSHIP



Note: Slopes visible from residence on property ensures slope maintenance.

Source: Washoe County Department of Community Development.

Figure 110.424.30.4
BUILDING LOCATION STANDARDS



Source: Washoe County Department of Community Development.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.35 Grading and Drainage Standards. This section sets forth development standards for grading and drainage of hillside and ridgeline properties.

- (a) Grading. These grading standards are applicable to hillside and ridgeline development only if a special use permit for grading is required pursuant to Washoe County Ordinance 811. The following standards are intended to preserve natural topographic features, foster resource preservation and minimize degradation of the visual character of hillsides:
 - (1) Grading shall relate to the natural topography with the natural topography maintained to the greatest extent possible;
 - (2) Where alteration to the natural topography is necessary, graded slopes shall be contoured to provide a smooth and gradual transition of grading and natural slopes, while maintaining the basic character of the terrain;
 - (3) Standard pad grading or terracing which results in grading outside the building footprint and access area shall be discouraged;
 - (4) Grading of knolls, ridgelines or toes of slopes shall be rounded to conform with the natural grade and to provided a smooth transition to the natural slope;
 - (5) Grading shall create varying gradients in order to avoid a "manufactured" appearance;
 - (6) Grading in environmentally sensitive habitat areas shall occur only when necessary to protect, maintain, enhance or restore the habitat; and
 - (7) A slope stability and scarring mitigation plan, certificated by the project engineer, shall be reviewed and approved by the Director of Community Development and the Public Works Department prior to initiation of grading.
- (b) Drainage and Erosion Control. All hillside development shall satisfy current Washoe County Code for drainage and erosion control.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.40 Vegetation Preservation and Restoration Standards. This section sets forth development standards to ensure maximum preservation and restoration of existing trees and vegetation on hillsides and ridgelines, reduce damage from sediment and runoff, improve wildlife habitat, and retain the desirable qualities of hillsides.

- (a) Existing Native Trees and Vegetation. Existing native trees and vegetation shall be retained and integrated into the site development plan to the maximum extent feasible so as to maintain the natural surface drainage system, protect and preserve ecological communities, and enhance the natural scenic and visual quality.
- (b) Disturbed Areas. Where existing trees or plants have been removed from hillside or ridgeline properties, the following standards shall apply:

- (1) Existing vegetation shall not be destroyed, removed or disturbed more than fifteen (15) days before grading is scheduled to begin; and
- (2) All graded or disturbed areas, exposed slopes and areas of soil or landform disturbance not designated for development shall be revegetated and replanted immediately after grading in order to mitigate adverse visual impacts, improve soil conditions, minimize erosion and stabilize necessary cut and fill slopes with plant roots.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.45 Street Standards. This section sets forth development standards to ensure streets and roadways are adequate for serving the unique conditions of hillside areas.

- (a) Applicability. Street standards for hillside and ridgeline properties shall be subject to the provisions of Article 436, Street Design Standards, and be in accordance with a detailed geotechnical engineering investigation that provides recommendations for the following:
 - (1) Design of cut and fill slopes;
 - (2) Design of roadway drainage systems;
 - (3) Protection of slopes from erosion;
 - (4) Pavement and structural design; and
 - (5) Construction procedures and methods to be used during site grading and roadway construction.
- (b) Standards Waiver. The street standards in Article 436, Street Design Standards, may be modified for hillside development if the geotechnical investigation indicates that other roadway cross sections are more suitable for the proposed development. Any modifications to the standards must be designed in accordance with Washoe County Codes and to the satisfaction of the Director of Community Development, County Engineer and staff from the appropriate fire protection agency.

[Added by Ord. 893, provisions eff. 3/4/94.]

Section 110.424.50 Fire Safety Standards. This section sets forth development standards to minimize the potential of fire spread and ensure fire safety to hillside areas through the provision of adequate water supply and sources, fuel breaks and fire-resistant landscaping.

- (a) Water Provisions. The applicant shall demonstrate that adequate fire line water supply, flow and pressure are available and consistent with standards established by the appropriate fire protection agency, and that all applicable fire hydrant requirements have been fulfilled.
- (b) Building Materials. Fire retardant roofing and decking shall be required.
- (c) Fuel Breaks. Fuel breaks shall be provided to reduce the risk of spread of wildfire and the opportunity of ignition, and to assure emergency access to the hillside development. The fuel breaks shall be established around all buildings

and community facilities, and at appropriate intervals and locations within a hillside development in order to provide safer access for fire fighting and to reduce the rate of fire spread, as follows:

- (1) The perimeter of all buildings shall be cleared of underbrush and excess vegetation;
 - (2) Lot size and building placement shall allow adequate clearance of hazardous flammable vegetation; and
 - (3) Fuel breaks shall allow safe access for fire-fighting personnel and equipment.
- (d) Fire-Resistant Planting. In high-risk fire areas, the following standards shall apply:
- (1) Existing fire-resistant and fire-retardant plants shall be retained where feasible;
 - (2) The use of fire-resistant and fire-retardant plants shall be encouraged, and the use of highly flammable plants shall be prohibited;
 - (3) New trees shall be planted at least fifteen (15) feet from existing and proposed structures. Where this setback is infeasible due to yard requirements or other physical constraints, the use of fire-resistant trees shall be required;
 - (4) Trees shall be pruned such that no dead branches or foliage extend lower than six (6) feet above finished grade or within ten (10) feet of a chimney; and
 - (5) Yard areas shall be regularly maintained to remove excessive dry wood, debris, weeds and other highly flammable materials.

[Added by Ord. 893, provisions eff. 3/4/94.]

Article 426

SCENIC AREAS

This section reserved for future ordinance.

Article 428
***ALTERNATIVE ENERGY DEVELOPMENT
INCENTIVES***

This section reserved for future ordinance.

Article 430

RIVER CORRIDOR DEVELOPMENT

This section reserved for future ordinance.

Article 432

OPEN SPACE STANDARDS

Sections:

110.432.00	Purpose
110.432.05	Applicability
110.432.10	Residential Private Open Space
110.432.15	Residential Common Open Space
110.432.20	Commercial Open Space
110.432.25	General Standards
110.432.30	Pedestrian Access and Circulation
110.432.35	Environmentally Sensitive Habitat

Section 110.432.00 Purpose. The purpose of this article, Article 432, Open Space Standards, is to establish regulations to develop, preserve and protect recreational and environmentally sensitive open space areas within Washoe County. The intent of these regulations is to protect the public health, safety and welfare by:

- (a) Protecting existing, and providing new, recreation and scenic areas for the use and enjoyment of residents and visitors;
- (b) Establishing usable space and facilities for outdoor living and recreation;
- (c) Encouraging open space buffers and greenbelt areas to help define boundaries between development areas, communities or neighborhoods so that all development does not run together in a suburban sprawl pattern; and
- (d) Protecting environmentally sensitive habitat.

[Added by Ord. 949, provisions eff. 5/1/96.]

Section 110.432.05 Applicability. This section sets forth the application provisions of this article.

- (a) Application.
 - (1) This article, except for Sections 110.432.20, Commercial Open Space, and 110.432.35, Environmentally Sensitive Habitat, shall apply to all new multi-family development and the expansion of multi-family development except for those uses which are classified as follows:
 - (i) Group home land use types; and
 - (ii) Child care land use types.
 - (2) Section 110.432.20, Commercial Open Space, shall apply to commercial land uses.

- (3) Section 110.432.35, Environmentally Sensitive Habitat, shall apply to all new development and the expansion of development.
- (b) Duplicate Regulations. Unless otherwise specifically stated, if the provisions of this article are in conflict with other statutes, ordinances or regulations, the more stringent limitation or requirement shall prevail to the extent of the conflict.

[Added by Ord. 949, provisions eff. 5/1/96. Amended by Ord. 1485, provisions eff. 3/27/12.]

Section 110.432.10 Residential Private Open Space. This section sets forth development standards to provide sufficient and quality private open space for residential uses in Washoe County. These standards are intended to provide for the development and maintenance of private open space areas which serve the need for leisure, space and privacy.

- (a) Types of Private Open Space. Private open space shall be comprised of one (1) or more of the following:
 - (1) Rear yard;
 - (2) Patio;
 - (3) Balcony;
 - (4) Deck; or
 - (5) Side yard (not at the zero setback).
- (b) Requirement. The amount of private open space required per dwelling unit shall be as follows:
 - (1) Ground floor rear yards shall be at least four hundred (400) square feet;
 - (2) Ground floor patios shall be at least one hundred fifty (150) square feet; and
 - (3) Upper level balconies or decks shall be at least seventy (70) square feet.
- (c) Minimum Dimension. The minimum dimension at any point of a private open space shall be as follows:
 - (1) Ground floor patio or deck shall be at least ten (10) feet wide; and
 - (2) Above- or below-ground floor balcony or deck shall be at least six (6) feet wide.
- (d) Location. Private open space shall be located as follows:
 - (1) Private open space shall be adjacent to, and not more than four (4) feet above or below, the living units it serves except for rooftop private open space;
 - (2) Above-ground floor private open space shall not be located within five (5) feet of an interior side property line; and

- (3) Below-ground floor private open space shall not be located within a required minimum front yard.
- (e) Screening. Residential ground floor private open space shall be screened from adjoining incompatible uses and public rights-of-way pursuant to Article 412, Landscaping.
- (f) Special Provisions for Rooftop Private Open Space. When private open space is located on a roof:
 - (1) Rooftop private open space shall be adjacent to, and not more than one (1) story above or below, the living units it serves;
 - (2) Adequate safety provisions, such as railings or other protective devices, shall be provided, and shall be constructed such that ladder-like use is impossible; and
 - (3) The area occupied by vents and other structures which do not enhance the usability of the space shall not be counted toward the required minimum square footage.

[Added by Ord. 949, provisions eff. 5/1/96.]

Section 110.432.15 Residential Common Open Space. This section sets forth development standards to provide sufficient and quality common open space for residential uses in Washoe County. These standards are intended to provide for the development and maintenance of common open space areas which serve the need for leisure, space and recreation.

- (a) Types of Common Open Space. Common open space may be comprised of one (1) or more of the following:
 - (1) Courtyard;
 - (2) Large lawn area;
 - (3) Playground;
 - (4) Tennis court;
 - (5) Basketball court;
 - (6) Swimming pool; and
 - (7) Similar outdoor recreation facilities as approved by the Director of Community Development.
- (b) Requirement. At least two hundred (200) square feet of common open space shall be required per dwelling unit for developments of twelve (12) or more units.
- (c) Location. Common open space shall be located as follows:
 - (1) The space shall be accessible to all the living units it serves; and

- (2) Not more than twenty (20) percent of the required space may be located on the roof of any building, attached garage or carport.

[Added by Ord. 949, provisions eff. 5/1/96.]

Section 110.432.20 Commercial Open Space. This section sets forth development standards to provide sufficient and quality open space for commercial uses in Washoe County. These standards are intended to provide for the development and maintenance of public open space areas for the use and enjoyment by workers, residents and visitors.

- (a) Types of Commercial Open Space. Commercial open space shall be comprised of one (1) or more of the following:
 - (1) Plaza;
 - (2) Park;
 - (3) Garden;
 - (4) View/sun terrace;
 - (5) Greenhouse;
 - (6) Atrium;
 - (7) Galleria;
 - (8) Arcade; or
 - (9) Similar open space as approved by the Director of Community Development.
- (b) Requirement. All commercial uses shall provide usable public open space in an amount proportional to the building size as follows:
 - (1) For every one hundred (100) gross square foot of non-residential floor area, at least one (1) square foot of public open space shall be provided; and
 - (2) Residential floor area shall be excluded for calculation purposes; however, the requirements set forth in Sections 110.432.10, Residential Private Open Space, and 110.432.15, Residential Common Open Space, shall apply to the residential portion of a mixed-use development.
- (c) Minimum Dimension. The minimum dimension at any point of a commercial public open space area shall be fifteen (15) feet.
- (d) Location. Commercial public open space shall be located on the same site as the building or on private or public property within five hundred (500) feet of the building.
- (e) Standards. Commercial open space shall be:

- (1) Located in such a manner as to provide easy, safe and convenient access to the general public;
- (2) Landscaped and, where appropriate, furnished with a display of public art;
- (3) Protected from excessive heat, wind and sunlight;
- (4) Well lit, if intended for nighttime use;
- (5) Open to the general public at times when it is reasonable to expect public use;
- (6) Designed for user safety and security; and
- (7) Maintained at no public expense.

[Added by Ord. 949, provisions eff. 5/1/96.]

Section 110.432.25 General Standards. This section sets forth standards to ensure the usability of all required open space.

- (a) **Excluded Areas.** The following areas shall not be counted toward the required amount of private or common open space:
 - (1) Hallways;
 - (2) Entrances;
 - (3) Front porches;
 - (4) Off-street parking and loading areas;
 - (5) Driveways; and
 - (6) Loading and service areas.
- (b) **Surface Material.** The surface material shall allow convenient and safe use for outdoor activity and shall consist of any practicable combination of turf, landscaping, flagstone, wood planking, concrete, asphalt, decomposed granite or other serviceable surfacing.
- (c) **Maintenance.** The property owner, or his/her designee, shall permanently maintain all private open space associated with his/her property.

[Added by Ord. 949, provisions eff. 5/1/96.]

Section 110.432.30 Pedestrian Access and Circulation. This section sets forth development standards to allow public access to public open space areas, while protecting the established rights of private property owners.

- (a) **Pedestrian Access and Circulation Plan.** All development subject to this section shall provide for pedestrian access and circulation consistent with provisions set

forth in the appropriate area plan contained in Volume Two: Area Plans of the Master Plan.

- (b) Development Standards. The following development standards shall apply to all required access:
- (1) The edge of all access easements shall be at least twenty-five (25) feet from any existing or proposed residence to provide separation between pedestrian access points and circulation routes, and to protect the privacy and security of residents and homes;
 - (2) Access easements shall be at least ten (10) feet wide and shall include a minimum four (4) foot wide trail;
 - (3) Access through environmentally sensitive habitat areas shall comply with the provisions established in Section 110.432.35, Environmentally Sensitive Habitat;
 - (4) Access improvements such as trails, ramps, railings, viewing areas, restrooms and parking facilities shall be sited and designed to be compatible with the natural character of the surrounding landscape, and to be accessible to people of limited mobility to the maximum extent feasible; and
 - (5) Access signs shall identify access location, destination areas, environmentally sensitive habitat and hazardous conditions, and shall be compatible with the natural character of the surrounding landscape by using appropriate color, size, form and material.

[Added by Ord. 949, provisions eff. 5/1/96. Amended by Ord. 1447, provisions eff. 9/9/10.]

Section 110.432.35 Environmentally Sensitive Habitat. This section sets forth development standards to preserve environmentally sensitive habitat resources in Washoe County.

- (a) Required Survey. A habitat survey, prepared by a qualified biologist or botanist, may be required to determine the exact location of environmentally sensitive habitat areas and to recommend mitigation measures that address potential impacts to the habitat. This survey shall be submitted to the Director of Community Development for all new development that meets one (1) of the following criteria:
- (1) The project site is located within a habitat area of a threatened and endangered fauna or flora species identified in Appendix A of the Conservation Element of the Master Plan, or through on-site investigation and review of resource information; or
 - (2) The project site is or may be located within one hundred (100) feet of a threatened and endangered fauna or flora species identified in the Conservation Element of the Master Plan, and/or has the potential to negatively impact the long-term maintenance of such habitat.
- (b) Survey Contents. All habitat surveys shall include, at a minimum, the following information:

- (1) Survey methodology;
 - (2) Location map and topographical site plan indicating all existing and proposed structures and roads;
 - (3) Any rare and/or endangered plant and animal species, including the habitat envelope and the number of species observed;
 - (4) Delineation of all wetlands, streams and water bodies;
 - (5) Direct threats to habitat resulting from new development;
 - (6) Delineation of a habitat buffer area to be provided along the periphery of the primary habitat; and
 - (7) Mitigation measures to reduce impacts and to allow for the long-term maintenance of environmentally sensitive habitats.
- (c) Development Standards. The following standards are intended to protect, maintain, enhance and restore sensitive fauna and flora habitat:
- (1) No new development shall be permitted within a recognized primary habitat area of an endangered species.
 - (2) Limited new development may be permitted within a recognized habitat buffer area, as defined in the required habitat survey, subject to the following standards:
 - (i) Public access shall be limited to low-intensity recreational, scientific or educational uses, provided that it is strictly managed, controlled and confined to designated trails and paths;
 - (ii) During breeding season, public access and construction activities shall be prohibited or controlled as recommended in the habitat survey;
 - (iii) Alteration of the natural topography shall be discouraged;
 - (iv) Runoff and sedimentation shall not adversely affect habitat areas;
 - (v) Alteration of landscaping shall be discouraged unless the alteration is associated with restoration and enhancement of the habitat;
 - (vi) Where required, necessary permits shall be obtained from the Nevada Department of Wildlife and/or the United States Fish and Wildlife Service;
 - (vii) All portions of the buffer shall be protected pursuant to Article 424, Hillside Development;
 - (viii) Contiguous open space adjacent to habitat shall be encouraged;

- (ix) Potential impacts identified in the habitat survey shall be mitigated to a level of insignificance where feasible; and
- (x) Mitigation measures identified in the habitat survey shall be made conditions of project approval where necessary to mitigate impacts.

[Added by Ord. 949, provisions eff. 5/1/96. Amended by Ord. 1447, provisions eff. 9/9/10.]

Article 434

REGIONAL DEVELOPMENT STANDARDS WITHIN COOPERATIVE PLANNING AREAS AND ALL OF WASHOE COUNTY

Sections:

110.434.00	Introduction
110.434.05	Purpose
110.434.10	Applicability
110.434.15	Definitions
110.434.20	Density
110.434.25	Lot Adjacency Standards
110.434.30	Ridgelines
110.434.35	Earthquake Fault Areas

Section 110.434.00 Introduction. Subsequent to adoption of the updated 2002 Truckee Meadows Regional Plan, the Regional Plan Settlement Agreement Case No. CV02-03469 (hereinafter referred to as “settlement agreement”) was reached that disposed of certain litigation over the Regional Plan and related matters. Among subsequent actions required by the settlement agreement was development of certain specific objective criteria that would establish findings necessary for zone changes within areas defined as “cooperative planning areas” in the Truckee Meadows. This is addressed in Article 822, Provisions for Amendments to Local Master Plans and Zone Changes in Areas Subject to Cooperative Planning Under the Regional Plan Settlement Agreement. The settlement agreement also required development of certain minimum development standards common throughout the entire cooperative planning area to minimize potential negative impacts of new development on existing development within the incorporated and unincorporated areas. These common minimum standards are addressed in this article. Together, Articles 434 and 822 are intended to promote effective implementation of the Truckee Meadows Regional Plan of 2002 by applying specific standards and criteria, and requiring findings during the local zoning and master plan amendment process. Principle #1 of the Regional Plan, adopted May 9, 2002, states that the plan:

“...aims to limit the spread of the urban footprint and direct more development of homes and jobs toward the traditional core of the region—its downtowns, its designated Regional Centers, and its traditional transportation corridors. This strategy will redirect growth that might otherwise occur at the urban fringe; make more efficient use of land, natural resources and community services; save money on infrastructure; reduce dependence on the private automobile; promote multi-modal transportation choices; protect air quality; conserve energy; preserve designated open space; and create more affordable communities. This strategy, which will result in a more compact form of future development, as well as a more diverse mix of uses, will provide a variety of living and working situations, and will promote human, natural and economic capital, strengthen our communities and ensure that the region’s assets are accessible to all.”

[Added by Ord. 1191, provisions eff. 3/21/03.]

Section 110.434.05 Purpose.

- (a) Articles 434 and 822 are intended to implement certain portions of the October 17, 2002 Regional Plan Settlement Agreement and to function as the master documents for the settlement agreement. These standards will be on file with all settlement signatories and the Court.
- (b) The cooperative planning criteria and development standards have been developed and implemented to provide better assurance to the communities and citizens as to what, where, when and how development will occur within their neighborhoods and to what standards or criteria these areas will be developed.
- (c) For the full term of the 2002 Regional Plan, the codes of Reno, Sparks and Washoe County must contain all the provisions specified in Articles 434 and 822. Codes for any of these jurisdictions may exceed these requirements, but they shall contain no provisions that contradict or weaken the effect of these provisions. Any variance to the provisions contained within this article, including any proposed modifications pursuant to special use permit or other special exception, shall be processed only as specified in NRS 278.300 (1)(c) as that statutory provision is implemented in Article 110.804 of the Washoe County Development Code and [the] corresponding provisions of the City of Sparks and City of Reno codes. Specific Plans, Transit Oriented Development, Emerging Employment Centers, Planned Unit Development or any other area within the cooperative planning areas may not be exempted from these provisions. Neither the Regional Plan, nor any of the codes of the three jurisdictions, shall be amended in any way so as to negate the provisions of these articles during the term of the 2002 Regional Plan. Notwithstanding the above, any or all of these provisions may be amended through majority vote of each of the three local governing bodies.

[Added by Ord. 1191, provisions eff. 3/21/03.]

Section 110.434.10 Applicability. These standards apply for the entire term of the 2002 Regional Plan, are part of the settlement of litigation related to that plan, and may be amended only by agreement of all parties to that settlement.

- (a) The standards established in Section 110.434.25 of this article relate to potential negative impacts that may occur at or near the interface between incorporated or extra territorial jurisdiction areas and unincorporated areas outside the spheres of influence. Accordingly, these standards apply only to:
 - (1) New development proposed in cooperative planning areas after October 17, 2002 within five hundred (500) feet of the existing built environment, or within five hundred (500) feet of platted lots.
 - (2) New development within unincorporated Washoe County within five hundred (500) feet of the existing built environment, or within five hundred (500) feet of platted lots.
- (b) The standards established in Sections 110.434.20 and 110.434.35 of this article relate to impacts that can have a more wide-ranging impact on the entire existing developed community. These standards apply to all cooperative planning areas.

[Added by Ord. 1191, provisions eff. 3/21/03. Amended by Ord. 1236, provisions eff. 5/21/04.]

Section 110.434.15 Definitions. The definitions in Article 822 shall apply.

[Added by Ord. 1191, provisions eff. 3/21/03].

Section 110.434.20 Density. To the extent that land in such areas affected by this standard would be buildable under federal, state or local regulations, the full eligible density may be utilized on other locations on the site. However, the codes of all entities must provide that:

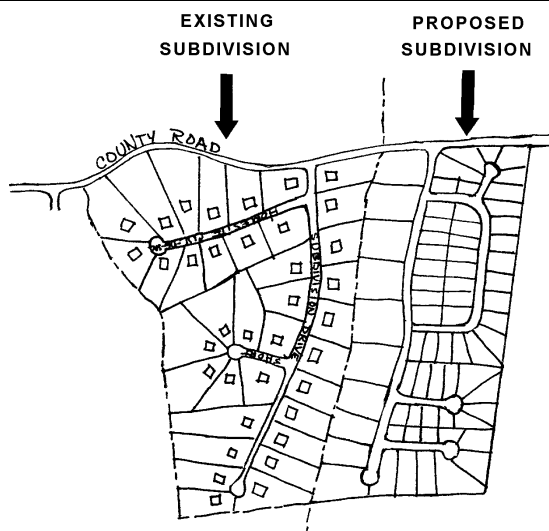
- (a) No density transfers may be allowed from lands that are otherwise undevelopable.
- (b) Any land from which density is transferred in a subdivision map must be deed-restricted for open space, parks or recreational use with Washoe County and the applicable City as parties to the recorded restriction.

[Added by Ord. 1191, provisions eff. 3/21/03.]

Section 110.434.25 Lot Adjacency Standards. Lots proposed within a new subdivision that share a common property line with an established subdivision shall not contain structures that exceed the maximum height of the adjacent equivalent zoning district or land use district.

- (a) Large Lot Single Family Residential to Large Lot Single Family Residential. To provide adequate transition between varying sizes of single-family residential parcels designated one (1) dwelling unit per five (5) acres to one (1) dwelling unit per acre, the minimum adjacent lot size shall be one (1) acre. In no instance will the depth of any proposed lot (the extent of that lot perpendicular to the boundary line) be less than two hundred (200) feet.
- (b) Single Family Residential to Single Family Residential. To provide adequate transition between varying sizes of single-family residential parcels designated as one (1) unit per acre or greater density, one of the following methods shall be utilized:
 - (1) Parcel Size Matching. The minimum lot sizes identified in the land use designation of the immediately adjacent developed subdivision shall be maintained at the edge of the proposed subdivision as depicted in Figure 110.434.25.1. In no instance will the depth of any proposed lot (the extent of that lot perpendicular to the boundary line) be less than that of any existing lot to which it is adjacent.

Figure 110.434.25.1
PARCEL SIZE MATCHING



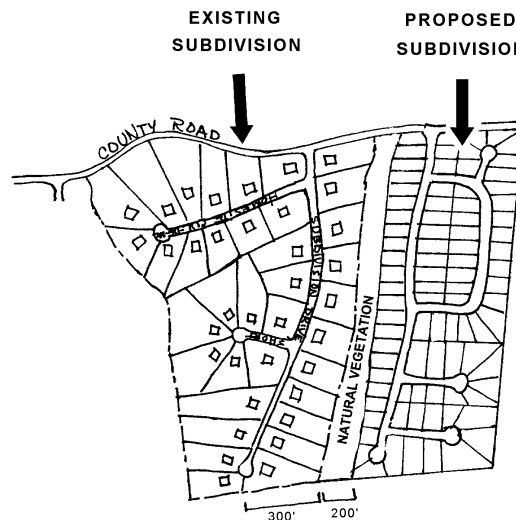
Source: Washoe County Department of Community Development.

Or

- (2) Buffering. A “buffer zone” shall be established. When the buffer remains natural vegetation, the buffer zone shall be equivalent to two hundred (200) feet or the average minimum lot depth of the adjoining developed property, whichever is greater (see Figure 110.434.25.2). The buffer zone may be common open space for the proposed subdivision. This common open space may not contain above ground utility lines but may include paths, equestrian trails, trees or benches. The buffer area and amenities must be maintained by the homeowners association or a lighting and landscaping district established pursuant to NRS 278.478.

Figure 110.434.25.2

BUFFERING



Source: Washoe County Department of Community Development.

- (c) Multi-Family Residential to Single Family Residential. To provide adequate transition between multi-family and single-family residential parcels, the development code standards of the closest cooperative planning agency (City of Reno or City of Sparks) shall apply in those respective jurisdictions as those development code standards existed on October 17, 2002, except where a common code applies to all cooperative planning areas in accordance with standards provided for in the settlement agreement and in Exhibit 3, Initial Criteria for Areas within Extended SOIs of the Regional Plan Settlement Agreement Case No. CV02-03469.
- (d) Single Family Residential and Multi-Family Residential to Non-Residential. To provide adequate transition between non-residential parcels and multi-family residential parcels, and between non-residential parcels and single family residential parcels, the development code standards of the closest cooperative planning agency (City of Reno or City of Sparks) shall apply in those respective jurisdictions as those development code standards existed on October 17, 2002, except where a common code applies to all cooperative planning areas in accordance with Exhibit 3, Initial Criteria for Areas within Extended SOIs of the Regional Plan Settlement Agreement Case No. CV02-03469.

- (e) Non-Residential to Non-Residential. To provide adequate transition between varying uses on parcels designated non-residential, the side and rear setbacks shall be as required by the Washoe County Development Code on October 17, 2002, except where a common code applies to all cooperative planning areas in accordance with Exhibit 3, Initial Criteria for Areas within Extended SOIs of the Regional Plan Settlement Agreement Case No. CV02-03469.

[Added by Ord. 1191, provisions eff. 3/21/03.]

Section 110.434.30 Ridgelines.

- (a) For visually important ridgeline (VIR) areas, the development standards of the applicable VIR area will apply, as developed in accordance with Article 822, Section 110.822.25(j).
- (b) Where at buildout there will be a row of structures along a ridgeline, the setbacks must be staggered with a variation of at least twenty (20) feet in an irregular pattern to avoid creating a visual "wall". Uniformity in structures arrayed along ridgelines is to be discouraged and variation is to be encouraged.
- (c) All other ridgeline design and development standards shall apply for Sparks, Reno and Washoe County as they were respectively in effect on October 17, 2002, except where a common code applies to all cooperative planning areas in accordance with Exhibit 3, Initial Criteria for Areas within Extended SOIs of the Regional Plan Settlement Agreement Case No. CV02-03469.

[Added by Ord. 1191, provisions eff. 3/21/03.]

Section 110.434.35 Earthquake Fault Areas. Development in earthquake fault areas is to be discouraged. No habitable structure, or a structure whose integrity is critical to maintaining the public health and safety, shall be located on a fault that has been active during the Holocene Epoch of geologic time or as determined by a site specific geotechnical study.

[Added by Ord. 1191, provisions eff. 3/21/03.]

[Section 110.434.30 entitled "Grading" added by Ord. 1191, provisions eff. 3/21/03 and repealed by Ord. 1236, provisions eff. 5/21/04.]

Attachment 1

**MULTI-FAMILY RESIDENTIAL TO SINGLE FAMILY RESIDENTIAL
ADJACENCY STANDARDS**

	COUNTY	RENO	SPARKS
STRUCTURE HEIGHT	10du/ac = 40 ft. 21du/ac = 70 ft. 42du/ac = 70 ft. 110.406.05.1	14du/ac = 35 ft 21du/ac = 45 ft 30 du/ac = 45 ft. 18.06.503 Table 2	Duplex = 30 ft. 20du/ac = 30 ft. 29du/ac = 35 ft. 20.76.030, 20.74 and 20.76
SETBACKS	F/ S/ R 10du/ac = 15/5/10 21du/ac = 15/5/20 42du/ac = 20/5/20 110.406.05.1 None None	15ft/30 if street 10 ft. side 20 rear 18.06.503 table two 10 foot side & rear setback then add 1:1 height/setback ratio over 15' Building height for 2 acre site or less and 1:3 height/setback ratio over 15 feet for over 2 acres 18.06.506D	1ft height/ setback ratio 20.76.030, 20.74 and 20.76
LANDSCAPING	20% of site 1 tree/per 50 ft. frontage Living ground cover = 50% in 1 year Trees = mix conifers ½ 7 ft. & ½ 5 ft. tall Deciduous 50% 2" 50% 1" Preservation of Significant Trees Entire abutting setback area 110.412	20% of site 1 tree/per 300 sq.ft. of landscaping Living ground cover = 75% in 3 years Tree = mix 60% large = 10' 60% 2 ½ caliper Existing Tree Preservation Entire abutting setback landscaped 18.06.700	20% 1 tree/per 300 sq.ft. of landscaping 80% max turf Tree mix Conifer = 6 ft. Deciduous = 2" See Design Standards Guidelines 3-.9
SCREENING	6-7 ft. fence Trash Enclosure screened	6 ft solid 5 feet of landscaping adjacent 1 tree/30 ft. Same	Over 6 units SUP, address screening in review 15' periphery landscaping 4 trees, 24 shrubs per 100 lineal feet Same See Design Standards Guidelines 5-8
SIGNAGE	Not addressed	No signage in rear adjacent to single family	Not addressed
DESIGN STANDARDS	None None	Building Façade fenestration Vertical to horizontal articulation	Horizontal/vertical articulation over 50' Roof variation Over 6 Units requires Special Use Permit, see Design Standards 5-4

Attachment 2

**NON-RESIDENTIAL TO SINGLE FAMILY RESIDENTIAL
ADJACENCY STANDARDS**

	COUNTY	RENO	SPARKS
STRUCTURE HEIGHT	NC/O = 60 ft. GC = 80 ft. TC = 45 ft. I = 65 ft. 110.406.05.1	OP & NC = 35 ft. GC = 65 ft. HC 65 ft. I = 55 ft. max. 18.06.503 Table 2	OP & NC = 30 ft. C1 = 30 ft. C2 = 60' TC = No Max I = 55 ft. max. 20.80.030
SETBACKS	F/ S/ R NC/O = 15/15/20 GC = 10/10/10 I = 15/10/15 110.406.05.1 None None	Adjoining Single Family Setback and add: 1:1 height/setback ratio over 15' Building height for 2 acre site or less add 1:3 height/ setback ratio over 15 feet for over 2 acres 18.06.506D	1:1 ratio of height/setback 20.83, .85 and .86
LANDSCAPING	20% of site for commercial, 10% industrial 1 tree/per 50 ft. frontage Living ground cover = 50% in 1 year Trees = mix conifers ½ 7 ft. & ½ 5 ft. tall Deciduous 50% 2" 50% 1" Preservation of Significant Trees	20% of site for OC/GO, NC, 15% for GC and I front yard with add on 18.06.702.1 1 tree/per 300 sq.ft. of landscaping Living ground cover = 75% in 3 years Tree = mix 60% large = 10' 60% 2 ½ caliper Existing Tree Preservation Entire abutting setback landscaped 18.06.700	25% of site for PO, 20% for C1, 15% for C2, 10% for TC 4 trees per 100 lineal feet Minimum 30' on center near residential Minimum planter 10' wide, 1 tree/5 shrubs ea. 25' Tree mix 50% = 6' 50% = 8 ft See Design Standards Guidelines 3.9 Perimeter Landscaping to residential
SCREENING	6-7 ft. fence Trash Enclosure screened	6 ft solid 5 feet of landscaping adjacent 1 tree/30 ft. Same	Solid and architecturally compatible, chain link with slats not allowed Same, metal doors Design Guidelines 3.9 Perimeter landscaping/screening to residential
SIGNAGE	Per sign ordinance	No signage in rear adjacent to single family	Per sign ordinance

Attachment 2 (continued)

**NON-RESIDENTIAL TO SINGLE FAMILY RESIDENTIAL
ADJACENCY STANDARDS**

	COUNTY	RENO	SPARKS
DESIGN STANDARDS	None	Building Façade fenestration	Land Use buffering to residential, segregate to maintain livable residential environment
	None	Vertical to horizontal articulation	No direct line of sight window orientation
	None	Consistent architecture on all sides of structure	Design Guidelines 3-2 through 3-4
LOCATION	Per zoning	Per zoning	Noise, traffic or odor generating activities cannot be near residential uses

Article 436

STREET DESIGN STANDARDS

Sections:

110.436.00	Purpose
110.436.05	Applicability
110.436.10	Relation to Other Standards
110.436.15	Authorization of Alternative Standards
110.436.20	General Requirements
110.436.25	Street Sections
110.436.30	Grades
110.436.35	Street Intersections
110.436.40	Street Crowns
110.436.45	Street Curves
110.436.50	Curbs and Gutters
110.436.55	Arterial Median Openings
110.436.60	Paving
110.436.65	Temporary Patches
110.436.70	Retaining Walls
110.436.75	Street Signs
110.436.80	Hazard Locations
110.436.85	Bus Turnouts
110.436.90	Dead-End Streets
110.436.95	Emergency Access Roads
110.436.100	Improved Maintenance Access
110.436.105	Private Access
110.436.110	Private Streets
110.436.115	Driveways
110.436.120	Cul-de-sacs and Knuckles
110.436.125	Partial Width Streets
110.436.130	Street Extensions
110.436.135	Pedestrian and Bicycle Ways
110.436.140	Street Improvement Plans: General Requirements
110.436.145	Street Improvement Plans: Contents
110.436.150	Street Improvement Plans: Plan and Profile Sheets

Section 110.436.00 Purpose. The purpose of this article, Article 436, Street Design Standards, is to provide safe, properly designed, attractive streets that minimize environmental disturbance, including impacts on water quality, and minimize maintenance costs for the street system within Washoe County.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.05 Applicability. The provisions of this article shall apply to public and private street improvements for projects including, but not limited to, the following:

- (a) Projects that will be subject to this article are:

- (1) Public Works projects;
 - (2) Subdivisions; and
 - (3) Subdivisions utilizing a Grading Permit.
- (b) Projects that may be subject to this article are:
- (1) Projects requiring a site plan review;
 - (2) Projects requiring a special use permit;
 - (3) Projects utilizing a development agreement; and
 - (4) Parcel maps.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.10 Relation to Other Standards. The requirements set forth in this article make reference to and are to be used in conjunction with the following standards and guidelines:

- (a) The *Standard Specifications for Public Works Construction* and the *Standard Details for Public Works Construction*, latest editions;
- (b) The Washoe County Regional Transportation Commission (RTC) *Planning for Transit: A Guide for Community and Site Planning*;
- (c) The Institute of Traffic Engineers (ITE) guidelines;
- (d) The American Association of State Highway and Transportation Officials (AASHTO) guidelines;
- (e) The *Manual of Uniform Traffic Control Devices* (MUTCD); and
- (f) The Americans with Disabilities Act (ADA) standards.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99.]

Section 110.436.15 Authorization of Alternative Standards. The following situations may result in the use of alternative standards:

- (a) In instances where unique topographical or other physical constraints suggest the use of streets and associated systems that are not provided for in this article, the County Engineer may authorize alternative standards, provided that the alternative standards are equivalent standards in accordance with accepted engineering practices, the *Standard Specifications for Public Works Construction*, and the *Standard Details for Public Works Construction*.
- (b) In instances where the street or road is on or eligible for inclusion on the Regional Road Impact Fee (RRIF) Network, these standards do not apply. Prior to commencing planning or design of RRIF Network facilities, a developer shall contact the County Engineer who will convene a meeting with the developer and the Regional Transportation Commission staff to establish appropriate design standards and provide guidance on a RRIF credit agreement application.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99.]

Section 110.436.20 General Requirements. Street design requirements set forth in this section shall apply to all development subject to this article.

- (a) Level of Service. Streets shall be designed to meet a Level of Service (LOS) standard C, or as otherwise provided for by Regional Transportation Commission policy.
- (b) Street Improvements. All public and private streets within a development shall be improved to conform to the standards as set forth in this article.
- (c) Ingress and Egress. Unless otherwise approved by the County Engineer, at least two (2) means of ingress and egress built to County standards shall be provided to serve a subdivision development. Of the two (2) means, one (1) may be constructed to emergency access standards provided in Section 110.436.95, Emergency Access Roads.
- (d) Right-of-Way and Easement Acquisition. All necessary right-of-way or easement acquisition outside the boundaries of a proposed development, including any agreements pertaining to access, drainage, ownership and maintenance, shall be completed prior to the final map approval unless otherwise approved by the County Engineer.
- (e) Streets Adjacent to Property Boundaries. The location of streets adjacent to property boundaries shall comply with the following provisions:
 - (1) Unless otherwise approved by the County Engineer, a street shown by an adopted street pattern or indicated on the Streets and Highways System Plan map that lies along a boundary of a development is to be dedicated and constructed at full width and to County standards; and
 - (2) A proposed street, or streets or access adjacent to or necessary to serve a proposed development, which are not within the boundaries of the development, shall be improved full width with the development in accordance with County standards as required by the County Engineer.
- (f) Additional Right-of-Way. To facilitate turning movements near intersections, additional right-of-way shall be provided to the satisfaction of the County Engineer.
- (g) Partial Width Streets. Where permitted, partial width streets shall comply with the provisions set forth in Section 110.436.125, Partial Width Streets.
- (h) Street Extensions. Street extensions shall comply with the general provisions of this section and the provisions of Section 110.436.130, Street Extensions.
- (i) Asphalt Pavement Structural Section. Asphalt pavement structural sections shall be designed in accordance with AASHTO, Asphalt Institute or other industry standard design methods as may be approved by the County Engineer.
 - (1) Such design sections shall be prepared by a Nevada Registered Civil Engineer and submitted with street improvement plans; and

- (2) Boring logs shall be shown on street improvement plans.
- (j) Traffic Studies. All traffic studies and reports shall be prepared in accordance with current ITE and AASHTO guidelines. Said studies and reports shall be prepared and stamped by a Nevada Registered Civil Engineer experienced in traffic engineering.
- (k) Utilities. All new utilities shall be placed underground consistent with the street specifications provided in this article.
- (l) Construction Traffic. Prior to final map approval, a proposed construction traffic haul route plan shall be submitted to the County Engineer for review and approval. Construction traffic includes all vehicles weighing in excess of 8,000 pounds unladen weight that are used to construct both off-site and on-site improvements.
 - (1) Existing residential streets that will be used as construction haul routes shall be evaluated by a geotechnical study to determine the existing pavement structural section and its load supporting capability; and
 - (2) If the pavement section is inadequate to support the proposed construction loadings but would be adequate in the absence of this construction traffic, the roadway shall be rehabilitated to support the anticipated additional loadings or reconstructed after construction use as needed to restore the existing design life, as approved by the County Engineer.
- (m) Occupancy Permits. A Permit of Occupancy shall be obtained from the Nevada Department of Transportation (NDOT) for access to, from or under roads and highways maintained by the NDOT. Applicant shall submit approved Permits of Occupancy to the County Engineer.
- (n) Signs. Signs and permanent markings shall be in accordance with the requirements of Section 110.436.75, Street Signs.

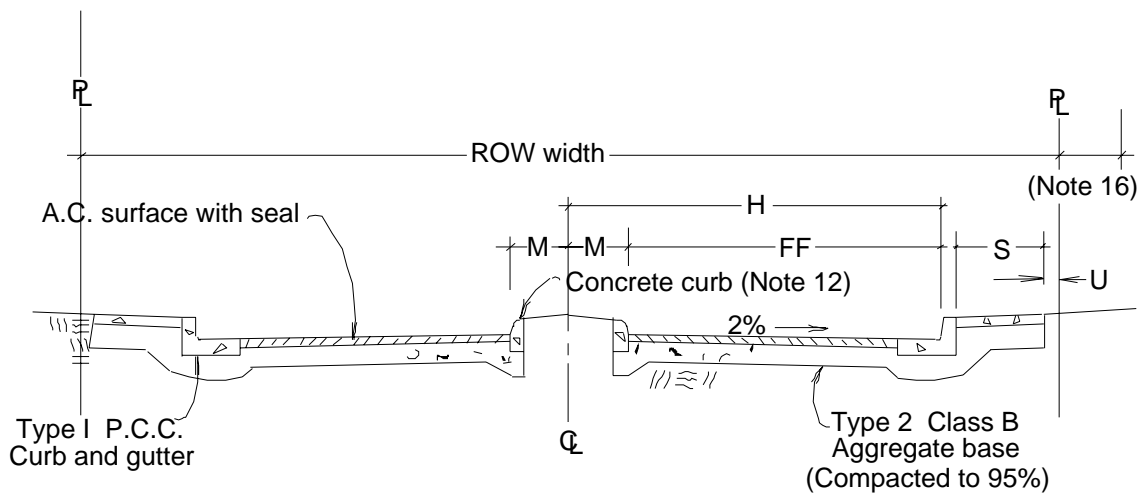
[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99.]

Section 110.436.25 Street Sections. All roadways dedicated and improved in Washoe County shall be constructed in accordance with the street sections for urban, suburban and rural areas illustrated in Tables 110.436.25.1 to 110.436.25.4. These standards are to be used in conjunction with the Land Use and Transportation Element of the Master Plan and the standards set forth in this article.

- (a) Exception. Any roadway that will be in the Regional Roadway Impact Fee Network must be designed in accordance with Regional Transportation Commission standards and conditions as directed under Section 110.436.15(b).
- (b) Variance from Street Sections. The Planning Commission or hearing examiner may consider variations to the Street Section requirements under the provisions of Article 804, Variances, if appropriate considerations warrant different cross-section improvements.

Table 110.436.25.1

ROADWAY SECTIONS - A
GENERAL APPLICATIONS: ARTERIAL HIGHWAYS



ROW	H	FF	M	S	U	ADT Maximum per 2 Travel Lanes	Remarks
100	44	36	8	5	0.5	12,100	Major Arterial
80	35	29.5		4	0.5	10,800	Minor Arterial

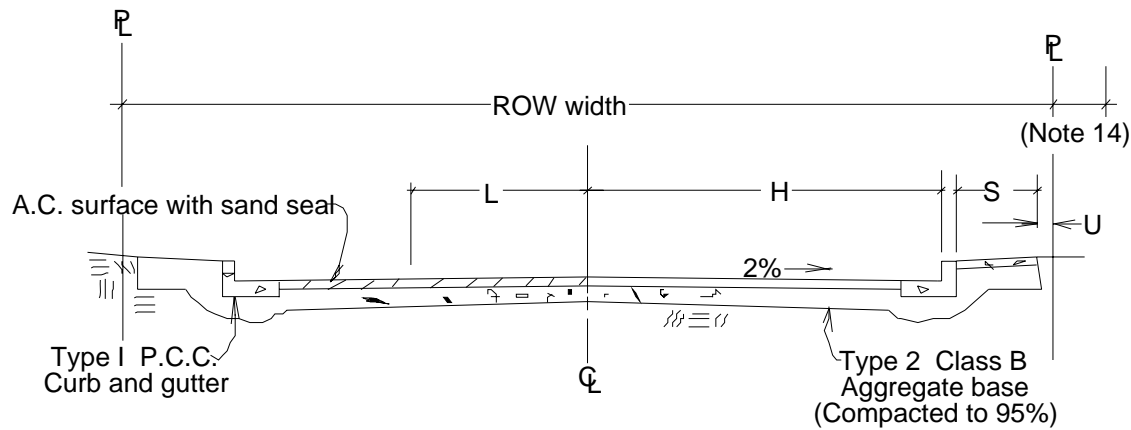
Notes:

- All widths are in feet.
- FF, H and M are measured to the front face of the curb. ROW is right-of-way; ADT is average daily traffic.
- ADT represents the design volume for a two (2) lane facility.
- Bicycle lanes shall be provided in accordance with the Bicycle and Pedestrian Element of the Regional Transportation Plan and to the satisfaction of the County Engineer.
- On street parking not allowed on arterials.
- Structural sections shall be designed by a registered engineer for a twenty (20) year life based on subgrade characteristics, as determined by a geotechnical investigation and anticipated traffic volume. Refer to Section 110.436.60(d) for minimum pavement section thickness.
- All curb and gutter is monolithic concrete and L shaped per standard detail.
- All sidewalk is concrete. Sidewalk shall be placed along both sides for arterials.
- All A.C. surfaces shall be sealed in accordance with Washoe County standards.
- Design of improvements to be done in accordance with Article 420, Storm Drainage Standards, and Article 436, Street Design Standards, of the *Washoe County Development Code*.
- All construction is to be done to current Washoe County standards and specifications.
- Median is concrete curb or other median construction approved by the County Engineer.
- Residential driveway access not allowed.
- Slope easements may be required in certain terrain to accommodate roadway section.
- Typical stripping is for twelve (12) foot lanes.
- A seven and one-half (7.5) foot public utility, traffic control signage and plowed snow easement on both sides of the ROW is required per standard detail.

Source: Washoe County Department of Public Works.

Table 110.436.25.2

ROADWAY SECTIONS - B
GENERAL APPLICATIONS: STREETS SERVING LOT SIZES LESS THAN 0.5 ACRES



ROW	H	S	U	L	B	PL	ADT Maximum per 2 Travel Lanes	Remarks
52	20	5	0.5	12	4	0	9,600	Collector
42	16	4	0.5	11	0	2	1,000	Local

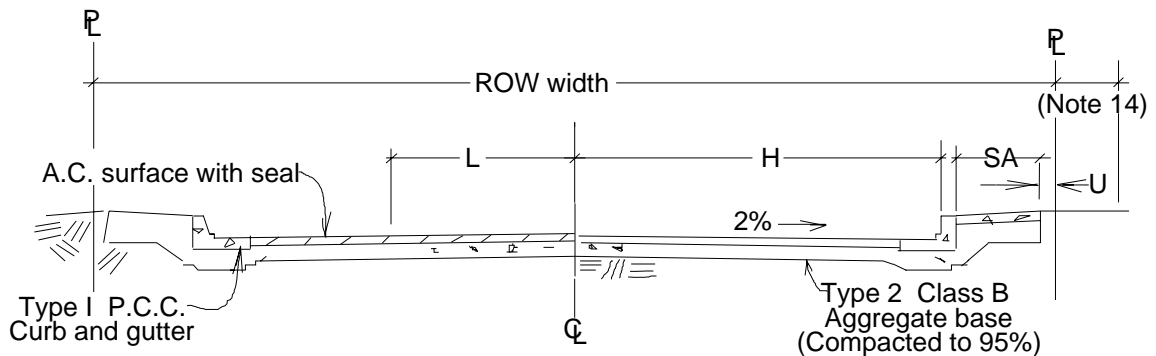
Notes:

- All widths are in feet.
- H is measured to the front face of the curb.
- L is travel lane; S is sidewalk; B is bicycle lane; PL is maximum number of parking lanes allowed; ROW is right-of-way, ADT is average daily traffic.
- ADT represents the design volume for a two (2) lane facility.
- Bicycle lanes shall be provided in accordance with the Bicycle and Pedestrian Element of the Regional Transportation Plan and to the satisfaction of the County Engineer.
- Structural sections shall be designed by a registered engineer for a twenty (20) year life based on subgrade characteristics, as determined by a geotechnical investigation and anticipated traffic volume. Refer to Section 110.436.60(d) for minimum pavement section thickness.
- All curb and gutter is monolithic concrete and L shaped per standard detail.
- Sidewalks are to be provided in accordance with Table 110.436.25.5.
- All A.C. surfaces shall be sealed in accordance with Washoe County standards.
- Residential driveway access not allowed to streets on which ten (10) year ADT design exceeds two thousand (2,000).
- Design of improvements to be done in accordance with Article 420, Storm Drainage Standards, and Article 436, Street Design Standards, of the *Washoe County Development Code*.
- All construction is to be done to current Washoe County standards and specifications.
- Slope easements may be required in certain terrain to accommodate roadway section.
- A seven and one-half (7.5) foot wide public utility, traffic control signage and plowed snow easement on both sides of the ROW is required per standard detail.

Source: Washoe County Department of Public Works.

Table 110.436.25.3

ROADWAY SECTIONS - C
GENERAL APPLICATIONS: STREETS SERVING LOT SIZES 0.5 - 1.5 ACRES

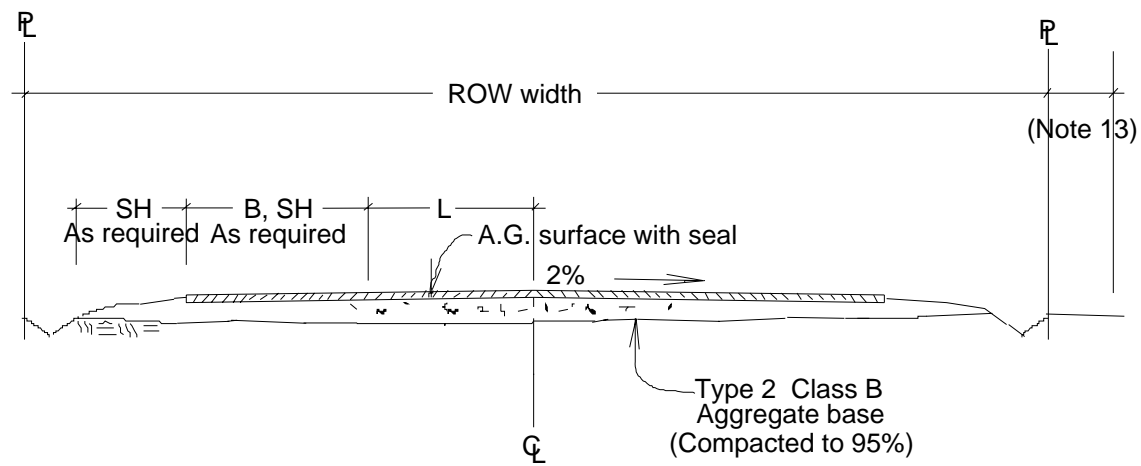


ROW	H	SA	U	L	B	PL	ADT Maximum per 2 Travel Lanes	Remarks
52	20	5	0.5	12	4	0	9,600	Collector
42	16	4	0.5	11	0	2	1,000	Local

- Notes:
1. All widths are in feet.
 2. H is measured to the front face of the curb.
 3. L is travel lane; SA is sidewalk area; B is bicycle lane; ROW is right-of-way; PL is maximum number of parking lanes; ADT is average daily traffic.
 4. ADT represents the design volume for a two (2) lane facility.
 5. Bicycle lanes shall be provided in accordance with the Bicycle and Pedestrian Element of the Regional Transportation Plan and to the satisfaction of the County Engineer.
 6. Structural sections shall be designed by a registered engineer for a twenty (20) year life based on subgrade characteristics, as determined by a geotechnical investigation and anticipated traffic volume. Refer to Section 110.436.60(d) for minimum pavement section thickness.
 7. All curb and gutter is monolithic concrete and L shaped per standard detail.
 8. Sidewalks in residential areas are to be provided in accordance with Table 110.436.25.5.
 9. All A.C. surfaces shall be sealed in accordance with Washoe County standards.
 10. Residential access is not allowed to streets on which ten (10) year design ADT exceeds two thousand (2,000).
 11. Design of improvements to be done in accordance with Article 420, Storm Drainage Standards, and Article 436, Street Design Standards, of the *Washoe County Development Code*.
 12. All construction is to be done to current Washoe County standards and specifications.
 13. Slope easements may be required in certain terrain to accommodate roadway section.
 14. A seven and one-half (7.5) foot wide public utility, traffic control signage and plowed snow easement on both sides of the ROW is required per standard detail.

Source: Washoe County Department of Public Works.

Table 110.436.25.4

ROADWAY SECTIONS - D**GENERAL APPLICATIONS: STREETS SERVING LOT SIZES GREATER THAN 1.5 ACRES**

ROW	L	B	SH	ADT Maximum per 2 Travel Lanes	Remarks
60	12	0	0	9,600	Collector
50	11	0	0	1,000	Local

- Notes:
1. All widths are in feet.
 2. L is travel lane; B is bicycle lane; SH is shoulder; ROW is right-of-way; ADT is average daily traffic.
 3. ADT represents the design volume for a two (2) lane facility.
 4. Bicycle lanes shall be provided in accordance with the Bicycle and Pedestrian Element of the Regional Transportation Plan and to the satisfaction of the County Engineer.
 5. Structural sections shall be designed by a registered engineer for a twenty (20) year life based on subgrade characteristics, as determined by a geotechnical investigation and anticipated traffic volume. Refer to Section 110.436.60(d) for minimum pavement section thickness.
 6. All A.C. surfaces shall be sealed in accordance with Washoe County standards.
 7. Residential access not allowed to streets on which ten (10) year design ADT exceeds two thousand (2,000).
 8. The minimum paved shoulder width shall be two (2) feet, otherwise, the shoulder shall be engineered, Type 2 Class B aggregate base course or A.C. structural section as above, as required by the County Engineer.
 9. Erosion protection required for drainage ditches.
 10. Design of improvements to be done in accordance with Article 420, Storm Drainage Standards, and Article 436, Street Design Standards, of the *Washoe County Development Code*.
 11. All construction to be done to current Washoe County standards and specifications.
 12. Slope easements may be required in certain terrain to accommodate roadway section.
 13. A seven and one-half (7.5) foot public utility, traffic control signage and plowed snow easement on both sides of the ROW is required per standard detail.

Source: Washoe County Department of Public Works.

Table 110.436.25.5

SIDEWALK REQUIREMENTS

Factor	Sidewalk Both Sides	Sidewalk One Side	No Sidewalk
Street function	Collector ⁽¹⁾	Collector	Local/access/ cul-de-sac ⁽³⁾
Traffic volume (ADT)	1,000+	251 to 1,000	250 or less
Comprehensive pedestrian plan ⁽²⁾	Per plan	Per plan	Per plan

- Notes:
1. May be limited to one side if separated from roadway improvements.
 2. Any sidewalk/pedestrianway requirements may be supplemented with a pedestrian circulation plan at the request of the County Engineer.
 3. Proximity of known or anticipated schools, shopping centers, etc., will be anticipated.

Source: Washoe County Department of Public Works.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99, Ord. 1378, provisions eff. 8/1/08; Ord. 1447, provisions eff. 9/9/10.]

Section 110.436.30 Grades. Street design shall comply with the following standards for minimum and maximum grades.

- (a) Minimum Grades. All streets shall have a minimum grade of five-tenths (0.5) of one (1) percent.
- (b) Maximum Grades:
 - (1) Arterials. Arterials shall have a maximum allowable grade of six (6) percent.
 - (2) Residential and Collector Streets. Residential collector and local streets shall have a maximum allowable grade of six (6) percent except as otherwise approved by the County Engineer, because of topographical constraints.
 - (3) Residential Driveways. The maximum grade for a driveway shall be fourteen (14) percent.
 - (4) Street Grade Exceptions. If approved by the County Engineer, the maximum grade for residential and collector streets may be increased as follows:
 - (i) Streets with a northern exposure may be allowed a maximum grade of nine (9) percent.
 - (ii) Streets with a southern exposure may be allowed a maximum grade of ten (10) percent.
 - (iii) All streets with grades greater than eight (8) percent shall be limited to a horizontal length of four hundred (400) feet, and shall

be provided with landings on both ends of the steeper section of the grade. The grade of the landings shall be six (6) percent or less and at least one hundred (100) feet in length.

- (c) Long Grades. On long grades, the steeper grades shall be near the bottom of the ascent wherever possible, with shallower grades near the top of the ascent.
- (d) Street Intersections. Street intersection grades shall conform to the provisions set forth in Section 110.436.35, Street Intersections, and in accordance with Washoe County *Standard Details for Public Works Construction* for grade changes at intersections.
- (e) Horizontal Curvature. Horizontal curves shall be designed in accordance with Section 110.436.45, Street Curves.
- (f) Undulating Streets. "Roller coaster" and "hidden dip" patterns are not allowed on through streets.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.35 Street Intersections. Street intersections shall be designed in accordance with the provisions of this section.

- (a) Street Grades. Street grades at intersections shall be as follows:
 - (1) Intersections shall not be allowed when the grade on the primary street exceeds six (6) percent on streets with a northern exposure and eight (8) percent on streets with a southern exposure, unless otherwise approved by the County Engineer; and
 - (2) Street grades on the minor legs of intersections shall not exceed four (4) percent for a minimum distance of fifty (50) feet, measured from the extension of the face of the curb of the primary street through the intersection as improved to full County standards, unless otherwise approved by the County Engineer.
- (b) Local Streets at Stop Condition. Street intersections of two (2) local streets in a stop condition shall not require a vertical curve at the intersection of the crown section with the street grade.
- (c) No Stop Condition. No stop street intersections shall require a vertical curve transition at the intersection of the crown section with the street grade.
- (d) Intersection Angles. Any street or highway intersecting any other street or highway shall intersect at an angle as near to a right angle as is practicable, but in no event shall it intersect at an angle of less than sixty (60) degrees, unless approved by the County Engineer.
- (e) Offset Intersections. An offset distance of two hundred (200) feet or less separating two (2) local streets shall not be permitted.
- (f) Intersection Grade Change. Grade changes at intersections shall be in accordance with Washoe County *Standard Details for Public Works Construction*.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.40 Street Crowns. Street crowns shall be designed in accordance with the provisions of this section.

- (a) Definition. Unless otherwise approved by the County Engineer, the street crown shall be at the centerline of the traveled way.
- (b) Grade Specifications. The normal street crown grades shall be two (2) percent from the centerline to the lip of the gutter. When approved by the County Engineer, street crown grades may be a minimum of one (1) percent to a maximum of four (4) percent.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.45 Street Curves. Street curves shall be designed in accordance with the provisions of this section. Consideration for adjusting the minimum design speeds may be given if warranted by topographic constraints.

- (a) Vertical Curves. Vertical curves shall be provided wherever the algebraic difference between two (2) intersecting grades is two (2) percent or more, excluding intersections, unless otherwise approved by the County Engineer. Such vertical curves shall be of sufficient length to provide the following:
 - (1) Minimum sight and stopping distances as established by AASHTO; and
 - (2) Minimum Design Speeds as follows:
 - (i) Twenty-five (25) mph (miles per hour) for local and collector streets;
 - (ii) Forty (40) mph for minor arterial streets; and
 - (iii) Fifty (50) mph for major arterials.
- (b) Horizontal Curves. Street design shall be consistent with the horizontal curve provisions set forth in this subsection.
 - (1) Horizontal curve radii shall be determined using the following design speeds:
 - (i) Fifteen (15) mph (miles per hour) for local streets of two hundred fifty (250) average daily trips (ADT) or less;
 - (ii) Twenty-five (25) mph for local and collector streets;
 - (iii) Forty (40) mph for minor arterials; and
 - (iv) Fifty (50) mph for major arterial and expressway streets.
 - (2) Horizontal curvatures shall not be introduced at or near the top of a pronounced crest vertical curve or near the bottom of a pronounced sag vertical curve.

- (3) The minimum design radius shall be determined using the following formula:

$$R_{min} = \frac{V^2}{15(e+f)}$$

R = Centerline radius of roadway.

e = Super elevation rate, decimal (for a normal crown section, e is assumed negative for adverse side). Super elevation may be required by the County Engineer on higher speed streets. Maximum allowable super elevation shall be four (4) percent.

f = Friction factor from Table 110.436.45.1.

V = Design speed (mph)

- (4) The friction factor (f) used in Subsection (b) (3) of this section shall be determined as follows:

(i) All collector and arterial streets shall be designed using the friction factor from the "High Speed Urban Streets" as set forth in Table 110.436.45.1; and

(ii) Local streets shall be designed using the friction factor from the "Low Speed Urban Streets" as set forth in Table 110.436.45.1.

- (5) Stopping sight distances shall be in accordance with AASHTO recommended guidelines.

(c) Curve Separations. Curves on any street, except local streets, shall be separated by a tangent of not less than one hundred (100) feet.

(d) Right Angle Intersections. At each right angle street intersection, the property line at each block corner shall be rounded with a curve that conforms to the curb return radii set forth in Subsection (f) of this section.

(e) Less Than Right Angle Intersections. Where streets intersect at angles of less than right angles or where peculiar conditions of intersection occur, the County Engineer may require a different radius.

(f) Curb Returns. Curb returns shall have minimum face of curb radii as follows:

(1) Twenty (20) feet on local streets;

(2) Twenty-five (25) feet on collector streets;

(3) Thirty (30) feet on minor arterial streets; and

(4) Forty (40) feet on major arterial and expressway streets.

Table 110.436.45.1

AASHTO MINIMUM DESIGN RADIUS CRITERIA

Design Speed V (mph)	f (Friction Factor)	
	Low Speed Urban Streets	High Speed Urban Streets
20	0.30	
25	0.25	
30	0.22	0.16
40		0.15
50		0.14

Source: American Association of State Highways and Transportation Official Publication, *A Policy on Geometric Design of Highways and Streets*, 1984.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.50 Curbs and Gutters. Curbs and gutters shall be provided in accordance with the requirements of this section.

- (a) Installation and Maintenance. When existing improvements are deteriorated or displaced, new curb and gutter shall be installed, including paving between street cut and gutter line on all streets.
- (b) Pedestrian Ramps. Curb returns shall be provided with pedestrian ramps for the handicapped in accordance with County and ADA standards.
- (c) Construction Materials. Curbs and gutters shall be constructed in accordance with the *Standard Specifications for Public Works Construction* and *Standard Details for Public Works Construction*, latest editions, unless otherwise approved by the County Engineer.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.55 Arterial Median Openings. Median openings on arterial streets that have continuous raised center medians shall not be permitted unless all of the provisions of this section are met.

- (a) Major Traffic Generator. The property to be served is a major traffic generator and has a minimum continuous frontage of six hundred (600) feet along a major street, or access easements are recorded to allow use of the opening by a minimum of two (2) properties which combined generate sufficient traffic to warrant the opening.
- (b) Proximity to Arterial Streets. The median opening is not less than seven hundred (700) feet from an intersection with an arterial.
- (c) Proximity to Collector or Local Streets. The median opening is not less than four hundred (400) feet from an intersection with a collector or local street.
- (d) Mid-block Median Openings. The median opening is not less than six hundred (600) feet from any other existing or planned mid-block median opening.

- (e) Sight Distance. Sight distance is adequate for the design speed of the major street.
- (f) Costs. All costs such as base material, pavements, safety lighting, traffic signals, reconstruction, or utility relocation required by a mid-block opening will be borne by the requesting party.
- (g) Design. The design of median openings shall be subject to the requirements and approval of the County Engineer, including storage, lengths and tapers, and in accordance with the AASHTO and/or ITE requirements.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.60 Paving. Design of the structural section for asphalt concrete pavement for public and private streets shall be in accordance with the provisions of this section.

- (a) Consistency. The design of the paving sections shall be in accordance with AASHTO, Asphalt Institute or other industry standard design methods as may be approved by the County Engineer.
- (b) Approvals. All paving shall require the approval of the County Engineer and be confirmed as adequate by the applicable soils investigation.
- (c) Design. The minimum design life of the structural section shall be twenty (20) years. A detailed geotechnical analysis and report shall be submitted to the County Engineer for review and approval. The resultant pavement section thickness shall be based on the geotechnical report and traffic analysis if the report indicates a structural section stronger than the minimum is required.
- (d) Minimum Pavement Thickness. The criteria defining the minimum thickness of the structural sections for asphalt concrete pavement for streets are as follows unless other equivalent minimum structural sections are approved by the County Engineer based on a geotechnical report:
 - (1) Arterial Streets. Asphalt concrete structural sections for arterial streets shall be a minimum of five (5) inches of pavement over six (6) inches of Type 2 Class B aggregate gravel base;
 - (2) Collector Streets. Asphalt concrete structural sections for collector streets shall be a minimum of four (4) inches of pavement over six (6) inches of Type 2 Class B aggregate gravel base;
 - (3) Local Streets. Asphalt concrete structural sections for local streets shall be a minimum of three (3) inches of pavement over six (6) inches of Type 2 Class B aggregate gravel base;
 - (4) Bus Routes. Asphalt concrete structural sections for proposed bus routes shall be a minimum of five (5) inches of full width pavement over six (6) inches of Type 2 Class B aggregate gravel base; and
- (e) Construction Haul Route. All on-site streets, both public and private, which are to be utilized by construction vehicles during development, shall be paved in accordance with the standards contained in Section 110.436.20, General Requirements.

- (f) Seal. A seal for private and public streets shall be placed within twenty (20) days after the asphalt concrete pavement has been constructed unless the temperature is below fifty (50) degrees Fahrenheit or when weather conditions, in the opinion of the County Engineer, would prevent proper construction. The type of seal used shall be determined by the County Engineer.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99.]

Section 110.436.65 Temporary Patches. Temporary patches shall be provided in accordance with the provisions of this section.

- (a) Thickness. Temporary patches shall be a minimum of two (2) inches thick and compacted in accordance with procedures acceptable to the County Engineer.
- (b) Elevation. Temporary patches shall not deviate more than three-fourths (3/4) inch above the existing pavement grade when measured from the bottom of a straight edge laid two (2) feet beyond the patch on both sides of the existing pavement. In no case shall the elevation of the patch be lower than the existing adjacent pavement elevation.
- (c) Loose Material. All loose material shall be removed from the temporary patch site immediately after completion of the patch.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.70 Retaining Walls. All retaining walls shall be constructed in accordance with the provisions of this section.

- (a) Design Calculations. Unless using standard County details, all retaining walls constructed within the public right-of-way and those which are to be maintained by the County shall have a complete set of design calculations submitted with the improvement plans for review. All calculations shall be signed and sealed by a Nevada Registered Civil Engineer.
- (b) Private Retaining Walls. Any retaining walls associated with private streets and constructed on private property shall be reviewed by the Chief Building Inspector and shall be subject to the *Uniform Building Code* (UBC) design criteria and the provisions of this section.
- (c) Anti-Graffiti Treatment. An anti-graffiti treatment shall be applied to all masonry or concrete retaining walls.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.75 Street Signs. Street signs shall conform to the provisions of this section.

- (a) Conformance. Signs and pavement markings shall conform with the most recent edition of the *Manual on Uniform Traffic Control Devices* (MUTCD), published by the Federal Highway Administration.
- (b) Intersections. Street signs designed to County standards shall be installed at all intersections.

- (c) Public Streets and Bikeways. Signs and pavement markings shall be installed on all public streets and bikeways, as required by the County Engineer.
- (d) Posted Speeds. Posted speeds on County streets shall be in accordance with the following subsections, unless designated otherwise by the County Engineer:
 - (1) Twenty-five (25) miles per hour (mph) on local and collector streets;
 - (2) Thirty-five (35) mph on minor arterial streets; and
 - (3) Forty-five (45) mph on major arterial streets.
- (e) Sign Layout. Proposed sign layouts shall be submitted with plans showing other public improvements (e.g. street improvement plans).
- (f) Private Streets. Street signs for private streets shall conform to the following requirements:
 - (1) Regulatory signs shall be installed at the juncture of all public streets with a private street, as approved by the County Engineer. Said sign shall state: "Private Street Not Maintained By County." All regulatory signs shall meet the *Manual on Uniform Traffic Control Devices* standards and be approved by the County Engineer.
 - (2) Private streets may be required by the County Engineer or Fire Marshal to be posted "No Parking" on one (1) or both sides, with the provision and maintenance of such signs being the responsibility of the homeowners or other association.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.80 Hazard Locations. High hazard locations along streets shall be mitigated by the use of protective devices approved by the County Engineer. Street right-of-way and width widening shall be provided where necessary for the installation of such protective devices.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.85 Bus Turnouts. Bus turnouts shall be provided when required by the County Engineer. The design of required bus turnouts shall be in accordance with Regional Transportation Commission (RTC) standards.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.90 Dead-End Streets. All dead-end streets shall be provided with a cul-de-sac in accordance with Section 110.436.120, Cul-de-sacs and Knuckles.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.95 Emergency Access Roads. Emergency access roads shall be designed in accordance with the provisions of this section.

- (a) Placement and Structural Design. Unless otherwise approved by the Fire Marshal, emergency access roads shall comply with the following standards:

- (1) Emergency access roads shall be placed within a minimum thirty (30) foot wide easement; and
 - (2) The roadways shall be a minimum width of twenty (20) feet and structurally designed to support a tandem axle loading of twenty-five (25) tons, with a minimum outside turning radius of forty (40) feet.
- (b) Grades. Grades for emergency access roads shall not exceed the maximum for street grades, unless otherwise approved by the County Engineer.
 - (c) Access. Access to such roadways 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.
 - (d) Surfacing for Temporary Emergency Access Roads. Temporary emergency access roads shall be surfaced with a minimum of six (6) inches of Type 2 Class B aggregate base and sealed with a minimum of eight one-hundredths (0.08) gallon per square yard of asphalt or other alternative approved by the County Engineer, and shall be provided with adequate roadside drainage consistent with County standards, including Article 420, Storm Drainage Standards.
 - (e) Surfacing for Permanent Emergency Access Roads. Permanent emergency access roads shall be paved with a minimum of two and one-half (2.5) inches of asphalt concrete pavement on an engineered gravel base and shall be provided with adequate roadside drainage consistent with County standards, including Article 420, Storm Drainage Standards.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.100 Improved Maintenance Access. Vehicular access for maintenance of County-owned sanitary sewers and storm drainage facilities, and their related appurtenances, shall be designed in general accordance with the provisions of this section.

- (a) Minimum Width. Access ways/roads shall be constructed to a minimum width of twelve (12) feet.
- (b) Structural Design. Access ways shall be constructed to support a tandem axle loading of ten (10) tons.
- (c) Roadside Drainage. Access ways shall be constructed to provide adequate roadside drainage consistent with County standards, including Article 420, Storm Drainage Standards.
- (d) Grades. Improved maintenance access ways shall be constructed with grades not exceeding twelve (12) percent, unless approved by the County Engineer.
- (e) Surfacing for Temporary Maintenance Access Roads. Temporary emergency access roads shall be surfaced with a minimum of four (4) inches of Type 2 Class B aggregate base or other equivalent as approved by the County Engineer.
- (f) Surfacing for Permanent Maintenance Access Roads. Permanent maintenance access roads shall be a four (4) inch minimum thickness Type 2 Class B compacted gravel base on a compacted subgrade and shall be provided with

adequate roadside drainage consistent with County standards, including Article 420, Storm Drainage Standards.

- (g) Snowplows. Snowplow maintenance turnarounds shall be located, and constructed to either permanent or temporary cul-de-sac standards, as determined by the County Engineer.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.105 Private Access. Private access roads serving not more than four (4) lots shall be designed in accordance with the following provisions:

- (a) Minimum Easement Width. Private access easements serving not more than four (4) residential units shall be a minimum of twenty (20) feet in width.
- (b) Improvement. Private access shall be improved to the satisfaction of the County Engineer.
- (c) Drainage. The access roadway shall be provided with adequate roadway drainage consistent with County standards, including Article 420, Storm Drainage Standards.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.110 Private Streets. Private streets for newly created subdivisions shall be designed in accordance with the provisions set forth in this section.

- (a) Street Section. The minimum pavement surface width for a private local street is twenty-two (22) feet and twenty-four (24) feet for a collector designated street. Concrete curb and gutter will be required for a lot size of less than 0.5 acres. The minimum required rights-of-way for these street sections shall be thirty-six (36) and thirty-eight (38) feet, respectively.
- (b) Street Signs. Street signs for private streets shall conform to the provisions of Section 110.436.75, Street Signs.
- (c) Traffic Carrying Capability. Lane widths of private streets shall be capable of safely carrying the projected traffic. This may need to be evidenced by a traffic report prepared by a Nevada Registered Civil Engineer, experienced in traffic engineering, to the satisfaction of the County Engineer.
- (d) Design and Construction. All private streets shall be geometrically designed and constructed to the applicable ITE and AASHTO criteria (e.g. curve radii, maximum slopes, setbacks) to the satisfaction of the County Engineer.
- (e) Right-of-Way. All street widths shall be sufficient to accommodate the projected traffic, attendant drainage, pedestrian demand, utilities, emergency vehicles, delivery and collection vehicles, and any bicycle lanes if planned by the developer, to the satisfaction of the County Engineer. The minimum right-of-way access widths shall be in accordance with Section 110.436.25, Street Sections, and this section.
- (f) Pavement Structural Section. The minimum pavement structural section shall be as provided for in Section 110.436.60, Paving.

- (g) CC&Rs. The conditions, covenants and restrictions (CC&Rs) shall prominently note to the satisfaction of the County Engineer that Washoe County will not assume responsibility for maintenance of the development's private street system or drainage system, or accept the streets for dedication to Washoe County unless the streets meet those Washoe County standards in effect at the time of offer for dedication.
- (h) Security Gates. Private streets that are designed with security gates shall have adequate on-site stacking space. The specific type and size of the stacking areas must be approved by and constructed to the satisfaction of the County Engineer.
- (i) Regulatory Signs. Signs must be posted in accordance with the provisions of Section 110.436.75, Street Signs.
- (j) 100-Year Flood. Private streets that are designed to permit passage of a portion of the 100-year flood over the roadway will be allowed, to the satisfaction of the County Engineer, if the following conditions are met:
 - (1) An alternate roadway access which is not susceptible to overtopping by the 100-year flood exists and is available for use;
 - (2) The overtopped roadway is designed to not be washed out by the 100-year flood; and
 - (3) Public safety will not be compromised.
- (k) Storm Drainage. Private streets for lot sizes of 0.5 acres or greater may be designed to use open drainage systems; all designs must be based on the requirements of Article 420, Storm Drainage Standards.
- (l) Final Map Notes. The applicable notes on the final map shall be modified to reflect the granting of the request for private streets to the satisfaction of the County Engineer. The map shall prominently note the private streets and drainages.
- (m) Turnarounds. Turnarounds shall be provided as needed.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.115 Driveways. Design and construction for driveways, approaches and curb cuts shall be in accordance with County standards and the provisions of this section.

- (a) Provision of Driveways. Where car storage or access for motor vehicles is desired in business, commercial or industrial districts, provisions shall be made for a driveway.
- (b) Commercial Driveways. Spacing from center to center shall be a minimum of two hundred thirty-five (235) feet on major arterials, one hundred fifty (150) feet on minor arterials, and fifty (50) feet on commercial collectors.
- (c) Driveway Approaches. All driveway approaches shall enter properties via a standard curb cut.

- (d) Unused Driveways. Unused driveways shall be replaced with new curb, gutter and sidewalks.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.120 Cul-de-sacs and Knuckles. Cul-de-sacs and knuckles shall be designed in accordance with the provisions of this section.

- (a) Minimum Grades. Minimum grades around cul-de-sacs and knuckle-type intersections shall be one-half of one (0.5) percent.
- (b) Street Crowns. The normal street crown may be increased to a maximum of four (4) percent from the centerline to the lip of the gutter.
- (c) Knuckle Turnouts. Without prior approval by the County Engineer, knuckle turnouts shall not be allowed on through streets or local streets serving more than twenty (20) lots.
- (d) Cul-de-sac Length. Cul-de-sacs shall not exceed fifteen hundred (1,500) feet in length as measured from the end of the cul-de-sac bulb to the intersecting street curb line. A maximum average daily traffic (ADT) of 300 is allowed.
- (e) Cul-de-sac Bulb Radius. The minimum turnaround radius of the cul-de-sac bulb shall be forty-eight (48) feet measured from the radius point to the face of the curb.
- (f) Cul-de-sac Bulb Right-of-Way. Minimum right-of-way for the cul-de-sac bulb shall be forty-eight (48) feet measured from the radius point to the right-of-way line.
- (g) Temporary Cul-de-sacs. Temporary cul-de-sacs shall comply with the provisions of this subsection.
 - (1) When located within the development, temporary cul-de-sacs shall be constructed with the structural section used for the associated street, unless otherwise approved by the County Engineer. Asphalt curbing shall be used.
 - (2) Temporary cul-de-sacs shall be provided with adequate drainage consistent with County standards, including Article 420, Storm Drainage Standards.
 - (3) All temporary cul-de-sacs shall have a minimum radius of forty-eight (48) feet.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.125 Partial Width Streets. Partial width streets shall not be permitted whenever the street is used for access to a development. Where permitted, partial width streets shall comply with the provisions of this section.

- (a) Property Boundaries. The location of partial width streets adjacent to property boundaries shall comply with Section 110.436.20, General Requirements.

- (b) Street Improvement Plans. Partial width streets shall be clearly designated on street improvement plans as required by the provisions of Sections 110.436.140, Street Improvement Plans: General Requirements; 110.436.145, Street Improvement Plans: Contents; and 110.436.150, Street Improvement Plans: Plan and Profile Sheets, as being only a portion of a street and not a street of full width.
- (c) Existing Partial Width Streets. Where a dedicated and recorded partial width street exists adjacent to proposed development, the other portion shall be dedicated with the proposed development to make the street complete.
- (d) Minimum Improvements. Partial width streets which are permitted along the boundary of a development shall be improved at least to half width, but in no instance shall the paved travel way be less than twenty-four (24) feet in width (with no on-street parking). Curb, gutter and sidewalk adjacent to the development, and a minimum two (2) foot shoulder opposite the development, shall be provided. The final width of improvements shall be determined by the County Engineer.
- (e) Grading and Drainage. Provisions for cut and/or fill slopes along the shoulder and any necessary sanitary sewer, storm drain or utility extensions shall be provided and constructed to County standards.
- (f) Future Saw Cut. A two (2) inch by six (6) inch redwood header shall be placed along the open pavement edge, or a one (1) foot additional width shall be added to the pavement for a future saw cut.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.130 Street Extensions. Street extensions shall comply with the provisions of this section.

- (a) Development Boundary. Streets constructed to full width improvements shall be extended to the development boundary for extension to future development, when required by the County Engineer.
- (b) Temporary Cul-de-sac. Streets extending to the development boundary, which are proposed for future extension, shall be provided with temporary cul-de-sacs, when required by the County Engineer,
- (c) Future Development. The future removal of temporary cul-de-sacs and their replacement to full width County standard street improvements shall be provided with the extension of the street by future development.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.135 Pedestrian and Bicycle Ways. Pedestrian and bicycle ways shall be designed in accordance with the provisions of this section.

- (a) Sidewalk Widths. In no instance shall sidewalks be less than four (4) feet in width. In commercial areas, sidewalks shall not be less than five (5) feet in width.

- (b) Bikeway Design. The design of bikeways shall conform to AASHTO *Guide for Development of New Bicycle Facilities*, latest edition, unless otherwise specified by the County Code; *Standard Specifications for Public Works Construction*; *Standard Details for Public Works Construction*; Regional Transportation Commission guidelines; or this section.
- (c) Structural Section. The structural section of public and private bicycle and pedestrian paths shall conform to the following provisions:
 - (1) The structural section shall be based on a soils report recommendation; and
 - (2) The minimum structural section shall be two and one-half (2.5) inches of Type 2 or Type 3 asphalt concrete pavement compacted to ninety-five (95) percent minimum density over an engineered subgrade. Drainage shall be consistent with County standards, including Article 420, Storm Drainage Standards. The pavement shall be sealed in accordance with Washoe County standards.
- (d) Obstructions. No obstruction (i.e. power poles, street lights, signal poles and controls, water meter boxes, pull boxes, mail boxes, etc.) shall be located within sidewalk areas or pedestrian ways, except as allowed by the County Engineer. Any necessary additional right-of-way that may be required for locating such obstructions at the back of sidewalks shall be dedicated or easements provided for, if needed (e.g. for mailboxes).
- (e) Cut and Fill Slopes. Cut and fill slopes shall be set back a minimum of one (1) foot from the back of the sidewalk. If no sidewalk exists, the setback shall be a minimum of five (5) feet from the back of the curb.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.140 Street Improvement Plans: General Requirements. All street improvement plans submitted to the County shall conform to the requirements of this section.

- (a) Plan Size. Plans shall be on standard twenty-four (24) inch by thirty-six (36) inch sheets.
- (b) Plan Information. Each sheet of the plans shall include the north arrow, scale and a title block including the following:
 - (1) The name of the project, owners and type of design shown on the plan;
 - (2) The name and seal of the Nevada Registered Professional Civil Engineer;
 - (3) The date, sheet number and total number of sheets; and
 - (4) Any information necessary to clarify the design.
- (c) Existing Conditions and Improvements. The plans shall clearly indicate, in plan and profile, the distinction between existing conditions and proposed improvements, and shall designate identified improvements as public or private.

- (d) Existing Paving. When showing existing pavement or concrete in relation to new work, suitable shading or delineation shall be made to highlight the proposed new work.
- (e) Adjacent Property. The plans shall show adjacent property owners.
- (f) Certification. All designs shall be certified by a Nevada Registered Professional Civil Engineer. Upon concurrence by the County with the plans, this engineer shall provide the County Engineer with reproducible sepia-mylar copies of the plans and at least one (1) set of prints of the plans, wet stamped and signed.

[Added by Ord. 908, provisions eff. 10/15/94.]

Section 110.436.145 Street Improvement Plans: Contents. The contents of the street improvement plan sheets shall include all items required by the County Engineer and the provisions of this section.

- (a) Title Sheet. Improvement plans shall include a title sheet which shows the entire project or assessment district and includes, at a minimum, the following:
 - (1) Index;
 - (2) Legend;
 - (3) Vicinity map with any city limits shown thereon;
 - (4) Owner;
 - (5) Engineer; and
 - (6) All pertinent notes.
- (b) Utility Index. Improvement plans shall include a utility index which consists of a single sheet of the subdivision or development showing the following:
 - (1) The general location of sanitary sewer and storm drain systems;
 - (2) All manholes and structures identified and numbered; and
 - (3) All improvements indicated as either public or private as appropriate, including all rear lot drainage ways and piping to off-site systems and drainage ways where required.
- (c) Easements. The following right-of-way and easement lines shall be properly dimensioned and noted on the plans:
 - (1) Right-of-way lines on both sides of all streets;
 - (2) Boundaries of lots fronting on both sides of all streets;
 - (3) Drainage and utility easements;
 - (4) Section lines and corners;

- (5) Land grant lines; and
 - (6) Temporary construction easements, both existing and proposed.
- (d) Topography and Improvements. All pertinent topographic features and improvements shall be shown including:
 - (1) Street lines;
 - (2) Curbs, sidewalks and shoulders;
 - (3) Location and size of sanitary sewers, storm drains and drainage ditches;
 - (4) Location and sizes of utilities including water, gas, electrical, telephone lines, utility poles, and fire hydrants; and
 - (5) Structures, houses, trees and other flora, and all other features of the area which may affect the design.
- (e) Proposed Improvements. Where proposed improvements meet existing infrastructure facilities, the plan shall show all of the following for a minimum distance of three hundred (300) feet from any boundary of the development:
 - (1) Pertinent existing elevations;
 - (2) Gutter grades;
 - (3) Centerline of pavement;
 - (4) Sewer and storm drain inverts;
 - (5) Driveway locations; and
 - (6) Traffic signal equipment, detection loops, etc.
- (f) Stationing and Orientation. The stationing on plan and profile shall be from south to north and west to east insofar as practical and shall include:
 - (1) All street centerlines;
 - (2) Beginning of curves;
 - (3) Points of compound curves;
 - (4) End of curves; and
 - (5) Limits of work.
- (g) Curve Data. Curve data shall include:
 - (1) Centerline radius;
 - (2) Length of curve; and

- (3) Delta or central angle and tangent distances.
- (h) Vertical Curves. Vertical curves shall include:
 - (1) The length of the curve;
 - (2) BVC (Beginning of Vertical Curve) and EVC (End of Vertical Curve) station and elevation; and
 - (3) K-value used (rate of vertical curvature).
- (i) Benchmarks. Benchmarks shall be clearly indicated on the plans as to location, description, elevation and datum.
- (j) Typical Section. A typical section(s) for each type of street within the area to be improved shall be a part of the plans and shall include the following:
 - (1) Structural features (delineated);
 - (2) Width of right-of-way;
 - (3) Improvement dimensions and details on both sides of all streets; and
 - (4) Boring logs from the soils report are to be included in the construction plans.
- (k) Cross Sections. Cross sections shall be included in the plans, when directed by the County Engineer. Normally, this would occur in limited areas with unusual topographic features or when special conditions occur that would affect the work.
- (l) Grading and Drainage. Plans shall include existing and proposed drainage conditions according to the following requirements:
 - (1) Existing contours every five (5) feet as fine continuous or dashed lines and proposed contours every five (5) feet as solid lines;
 - (2) All cut and fill slopes;
 - (3) Retaining walls;
 - (4) Street grades in percent;
 - (5) Peak flows, for the 5-year and 100-year storms, entering and leaving the development and disposition of same;
 - (6) The 100-year flood line;
 - (7) Spot elevations on streets, top of curbs, retaining walls, lots and surface drainage improvements;
 - (8) Drainage arrows showing individual lot drainage; and
 - (9) Soil requirements printed thereon.

- (m) Plan and Profile Sheets. Plan and profile sheets shall be prepared in accordance with the requirements set forth in Section 110.436.150, Street Improvement Plans: Plan and Profile Sheets.
- (n) Details. All County standard details being used in the project shall be shown. Any additional details shall be shown as necessary for clarification of the improvements. Any necessary general notes shall be provided, including the following note: "All construction shall conform to County standards."
- (o) Permit. A Revocable Permit shall be obtained from the Nevada Department of Transportation for any facilities encroaching upon a state right-of-way or for any drainage disposal on the right-of-way. (Allow a minimum of 30 days for obtaining a permit.)
- (p) Drawings of Record. Drawings of record noting all of the changes in the improvements constructed from the design plan shall be provided. The drawings of record shall be submitted on a reproducible sepia-mylar reproduced from the original drawings that have been stamped and sealed thereon by a Nevada Registered Civil Engineer verifying the drawings of record conditions. The distance from the nearest sanitary sewer manhole to each "Y" or "T" intersection, and to the terminus of each service at the property line shall be shown.
- (q) Private Streets. The County will not assume maintenance responsibility for access and drainage facilities and their associated structures located outside the limits of dedicated street rights-of-way or public easements, or which are not constructed to County standards for public facilities. Private facilities for access and drainage located on private street, lots or parcels are to be owned and maintained by the property owners.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99.]

Section 110.436.150 Street Improvement Plans: Plan and Profile Sheets. Plan and profile sheets shall conform to the requirements set forth in this section.

- (a) Scale. Minimum vertical scale shall be 1" = 10' and minimum horizontal scale shall be 1" = 40'.
- (b) Streets and Access Roads. All information for streets and access roads shall be located on the plan and profile sheets in accordance to the provisions of this subsection.
 - (1) Name of street(s);
 - (2) Plan sections shall show the following information:
 - (i) Monuments;
 - (ii) Right-of-way widths;
 - (iii) Improvements;
 - (iv) Traffic control devices;
 - (v) Intersecting street(s);

- (vi) Centerline stationing;
 - (vii) Horizontal curve data and stationing;
 - (viii) Benchmark locations and elevations; and
 - (ix) Existing facilities.
- (3) Profile sections shall show the following information:
- (i) Existing and proposed grades along centerline, including tangency slopes;
 - (ii) Vertical curve elevations and data;
 - (iii) Station and elevation of intersecting street(s); and
 - (iv) Existing facilities.
- (c) Storm Drains. If located within a public street section, all information for storm drains on the street plan and profile sheets shall be shown in accordance with the provisions of this subsection.
- (1) Plan sections showing storm drainage facilities shall include the following information:
- (i) Location of pipe in relation to street centerline and/or easements and property lines;
 - (ii) Type and location of manholes and catch basins, showing the station and number and rim elevations of each;
 - (iii) Size, class and type of pipes;
 - (iv) Type, location and 5-year storm flow of inlet and outlet structures;
 - (v) Location and type of maintenance access roads to manholes or structures, where required;
 - (vi) Typical channel section, where required;
 - (vii) Benchmark locations and elevations; and
 - (viii) Existing utilities.
- (2) Profile sections showing storm drainage facilities shall include the following information:
- (i) Existing and finished surface grades and pipe profile showing type, size, slope, Q^5 (Volume of runoff from 5-year storm event), velocity at Q^5 , and the hydraulic grade line if the pipe is under pressure;

- (ii) For channels, the depth of flow for the 5-year and 100-year storms;
 - (iii) Manhole station, number, rim elevation, and invert elevation of all pipes entering or exiting and distance between manholes; and
 - (iv) Existing utilities with pertinent elevations.
- (d) Sanitary Sewers. If located within a public street section, all information for sanitary sewers shall be shown on the street plan and profile sheets in accordance with the provisions of this subsection.
 - (1) Plan sections showing sanitary sewers shall include the following information:
 - (i) Location of pipe in relation to street centerline and/or easements and property lines;
 - (ii) Type and location of manholes, showing the station and number and rim elevation of each;
 - (iii) Size, class and type of pipe;
 - (iv) Service lateral locations with reference to station and property lines;
 - (v) Location and type of maintenance access roads, where required;
 - (vi) Benchmark locations and elevations; and
 - (vii) Existing utilities.
 - (2) Profile sections showing sanitary sewers shall include the following information:
 - (i) Existing and finished surface grades;
 - (ii) Pipe profile showing type and class, size, slope and velocity at peak flow;
 - (iii) Manhole station, number, rim elevation, and invert elevation of all pipes entering or exiting;
 - (iv) Distance between manholes; and
 - (v) Existing utilities with pertinent elevations.

[Added by Ord. 908, provisions eff. 10/15/94. Amended by Ord. 1064, provisions eff. 5/28/99.]

Article 438

GRADING STANDARDS

Sections:

110.438.00	Purpose
110.438.05	Scope
110.438.10	Permits Required
110.438.15	Grading Fees
110.438.20	Exempted Work
110.438.25	Definitions
110.438.30	Hazards
110.438.35	Major Grading Permit Thresholds
110.438.36	Major Grading Permit Application Requirements
110.438.37	Minor Grading Permit Thresholds
110.438.38	Minor Grading Permit Application Requirements
110.438.39	Financial Security for Grading
110.438.40	Unpermitted Grading, Stop Activity Order, Notice of Violation and Enforcement, Penalties and Procedures
110.438.41	Serial Grading Not Requiring Grading Permits
110.438.45	Grading of Slopes
110.438.50	Cuts
110.438.55	Fills
110.438.60	Setbacks
110.438.65	Drainage and Terracing
110.438.70	Erosion Control
110.438.75	Grading Inspection
110.438.77	Phasing and Stabilization of Grading
110.438.80	Notification of Completion of Work
110.438.85	Grading within Floodplains and Drainage Ways
110.438.95	Grading Plan for Tentative Maps
110.438.100	NDEP Permits

Section 110.438.00 Purpose. The purpose of this article is to safeguard life, limb, property and the public welfare as well as set standards that conserve the natural character of our hillsides and minimize disruption of the natural landscape, by regulating grading on private and public property.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.05 Scope. This article sets forth rules and regulations to control grading which includes clearing and grubbing, excavation, grading and earthwork construction, fills and embankments; establishes the administrative procedure for issuance of permits; establishes the administrative procedure to respond to grading completed without first obtaining appropriate permits and provides for approval of plans and inspection of grading construction. The appropriate American Society for Testing and Materials (ASTM) materials testing standards or equivalent as approved by the County Engineer will be used as required to verify grading and earthwork construction. This article is enforceable by the County Engineer, Director of Community Development and the County Building Official as appropriate.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.10 Permits Required. Except as specified in Section 110.438.20, no person shall do any grading in excess of fifty (50) cubic yards of material or 10,000 square feet of grading without first having obtained a grading permit from the Building Official as enforceable under the powers of Chapter 100 and from the Department of Community Development and the County Engineer as enforceable under the powers of Chapter 110. A separate permit shall be obtained for each site, and may cover both excavations and fills.

Table 110.438.10.1

Permits Required*

Grading of any amount within a special flood hazard area as defined by the County Engineer or within any drainage facility as defined herein	Grading permit** issued by Washoe County and possibly special use permit*** depending upon the amount proposed to be graded
Grading of fifty (50) cubic yards or less or ten thousand (10,000) square feet of grading or less (outside a special flood hazard area as defined by the County Engineer and outside of any drainage facility)	No permit required
Minor grading as defined at Section 110.438.37*	Grading permit issued by Washoe County
Major grading as defined at Section 110.438.35(a)	Special use permit approved by the Washoe County Board of Adjustment, or Planning Commission, followed by a grading permit issued by Washoe County

* Except as provided for in Section 110.438.20, Exempted Work.

** A grading permit is an administrative approval through the Department of Building and Safety with the approval of the Department of Community Development and the Engineering Division.

*** A special use permit requires the approval of the Board of Adjustment or Planning Commission after a public hearing.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.15 Grading Fees. Grading fees shall be in accordance with Chapter 100.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.20 Exempted Work. Exemption from the permit requirements of this article shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this article or any other laws or ordinances of this jurisdiction. A grading permit is not required for the following:

- (a) An excavation below finished grade for basements and footings of a building, retaining wall or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from such excavation or exempt any excavation having an unsupported height greater than five (5) feet after the completion of such structure.
- (b) Cemetery graves.

- (c) Refuse disposal sites controlled by other regulations.
- (d) Excavations for wells.
- (e) Excavations for utilities serving individual properties.
- (f) Mining, quarrying, excavating, processing or stockpiling of rock, sand, gravel, aggregate or clay where established and provided for by law, provided such operations do not affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property.
- (g) Exploratory excavations under the direction of soil engineers or engineering geologists.
- (h) Surface grading for leveling and maintaining existing roadways and driveways.
- (i) Excavation for sanitary septic systems.
- (j) Surface grading which does not alter the contour of the land for crop production use type.
- (k) Clearing of vegetation within the recommended defensible space distance of a structure for fire protection, upon the approval of a defensible space plan by the applicable fire agency, in conformance with the currently adopted International Wildland-Urban Interface Code.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.25 Definitions. For the purposes of this article, the definitions listed hereunder shall be construed as specified in this section.

Approval. “Approval” shall mean a determination in writing that the proposed work or completed work conforms to this article in the opinion of the County Engineer, Director of Community Development, Board of Adjustment or Planning Commission as identified in the applicable code section.

As-Graded. “As-graded” is the extent of surface conditions on completion of grading.

Bedrock. “Bedrock” is in-place solid rock.

Bench. “Bench” is a relatively level step excavated into earth material.

Bench Width. “Bench width” is measured from the closest points of two (2) adjacent retaining walls, as shown in Figure 110.438.25.BW.

Borrow. “Borrow” is earth material acquired from an off-site location for use in grading on a site.

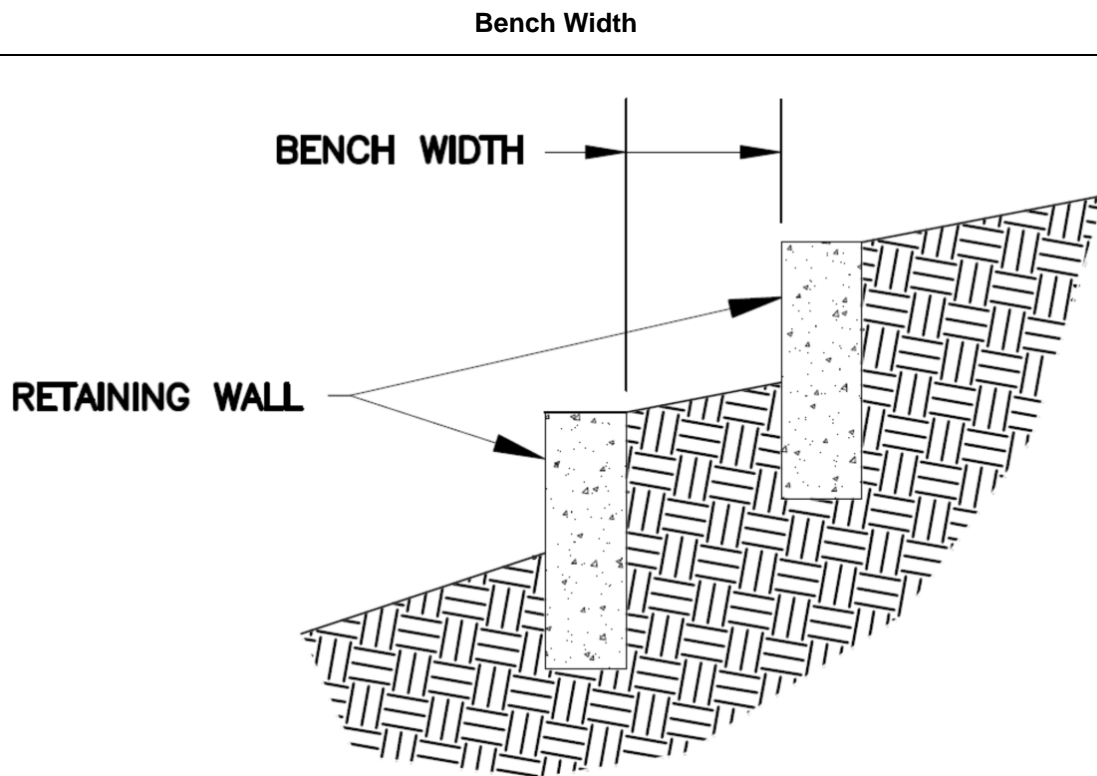
Civil Engineer. “Civil engineer” is a professional engineer registered in Nevada to practice in the field of civil works.

Civil Engineering. “Civil engineering” is the application of the knowledge of the forces of nature, principles of mechanics and the properties of materials to the evaluation, design and construction of civil works.

Clearing. "Clearing" means the removal of surface vegetation from an area or tract of land.

Cut. "Cut" means a portion of land surface which earth has been removed or will be removed by excavation.

Figure 110.438.25.BW



Source: Washoe County Engineering Division

Compaction. "Compaction" is the densification of a fill or subgrade by mechanical means.

Denuded. "Denuded" means an area that has been divested of covering or made bare.

Drainage Facility. "Drainage facility" means an engineered water conveyance facility which can include but not be limited to a paved or unpaved graded swale, a paved or unpaved graded ditch, a gutter, a culvert, a trench drain, a catch basin, a drop inlet, a bio retention swale, a detention/retention basin, an infiltration basin, a dam, a pond (especially those in a series), a wetland or a natural drainage-way with the approval of the County Engineer.

Earth Material. "Earth material" is any rock, natural soil or fill or any combination thereof.

Earthen Structure, Permanent. "Permanent earthen structure" means earthen material placed so as to create a berm, bench or similar structures:

- (1) Which the plans show will remain at the completion of the work; or,
- (2) Which will remain for more than one (1) year under separate permit and approvals for purposes of storage until a use for the soil is found elsewhere.

Earthen Structure, Temporary. "Temporary earthen structure" means earthen material placed so as to create a berm, bench or similar structures that the plans show will not remain at the completion of the work.

Engineering Geologist. "Engineering geologist" is a geologist experienced and knowledgeable in engineering geology.

Engineering Geology. "Engineering geology" is the application of geologic knowledge and principles in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

Erosion. "Erosion" is the wearing away of the ground surface as a result of the movement of wind, water or ice.

Excavation. "Excavation" is the mechanical removal of earth material.

Existing Grade. "Existing grade" is the grade prior to new grading activity.

Fill. "Fill" is a deposit of earth material placed by artificial means.

Final Stabilization. "Final stabilization" means the placement of permanent structures, pavement, parking areas, landscaped areas, revegetation and other required improvements upon areas previously disturbed by grading activity.

Finish Grade. "Finish grade" is the final grade of the site that conforms to the approved plan.

Gabion. "Gabion" means a container or basket fabricated of thick galvanized wire, filled with stone.

Geotechnical Engineer. See "soils engineer."

Grade. "Grade" is the vertical location of the ground surface.

Grading. "Grading" is any clearing, excavation, cutting, filling, or other disturbance of the natural state of the landform or natural vegetation and/or any combination thereof.

Grading, Major. "Major grading" is defined in Section 110.438.35.

Grading, Minor. "Minor grading" is defined in Section 110.438.37.

Key. "Key" is a designed compacted fill placed in a trench excavated in earth material beneath the toe of a proposed fill slope.

Professional Inspection. "Professional inspection" is the inspection required by this code to be performed by a civil engineer, soils engineer or engineering geologist licensed in Nevada. Such inspections include that performed by persons supervised by such engineers or geologists and shall be sufficient to form an opinion relating to the conduct of the work.

Retaining Wall Height. "Retaining wall height" is the exposed height of the retaining wall from finished grade at the bottom of the wall to the top of the wall (see Figure 110.438.25.RWH).

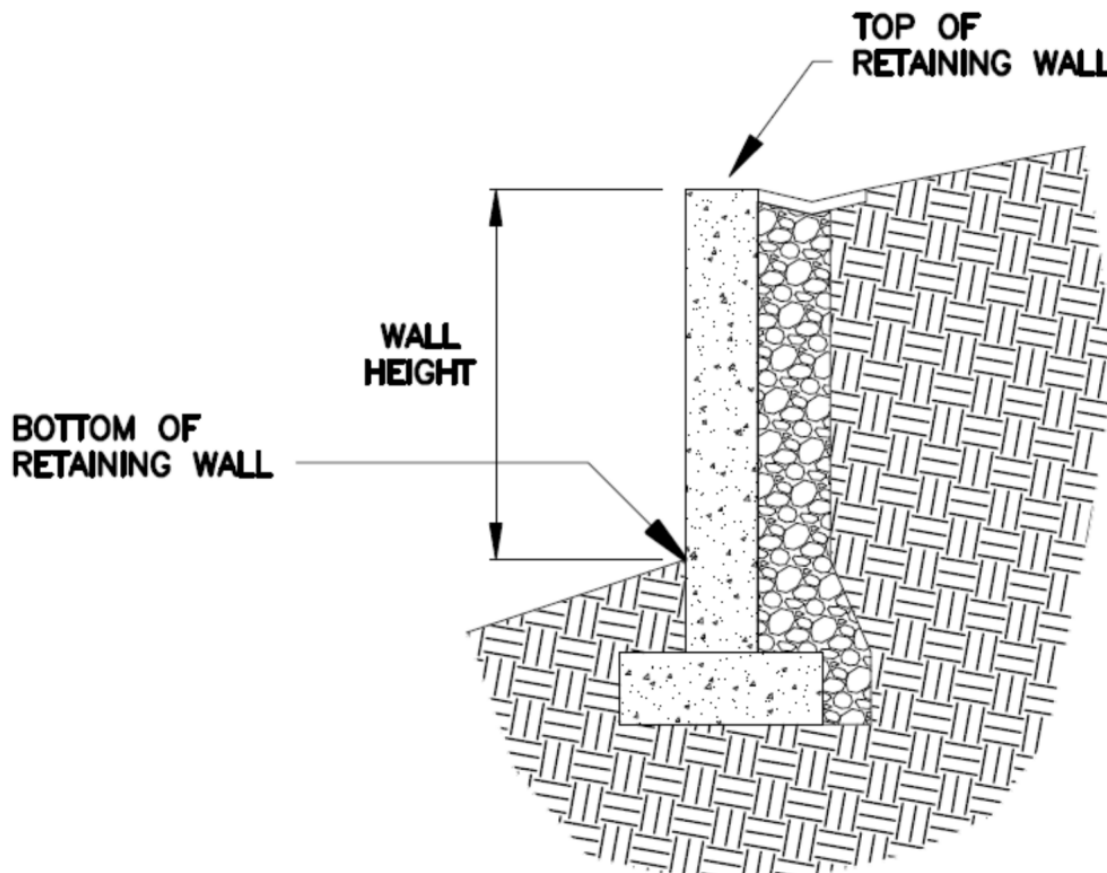
Riprap. "Riprap" consists of large pieces of angular rock (usually six (6) to thirty (30) inches in diameter) which have undergone only primary crushing and sizing; or larger, uncrushed pieces. Riprap is used to permanently stabilize slopes and construct erosion-control structures.

Rough Grade. “Rough grade” is the stage at which the grade approximately conforms to the approved plan.

Site. “Site” is any lot or parcel of land or contiguous combination thereof, under the same ownership, where grading is performed or permitted.

Figure 110.438.25.RWH

Retaining Wall Height



Source: Washoe County Engineering Division

Slope. “Slope” is an inclined ground surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance.

Soil. “Soil” is naturally occurring superficial deposits overlying bedrock.

Soils Engineer (or Geotechnical Engineer). “Soils engineer” or “geotechnical engineer” is an engineer experienced and knowledgeable in the practice of soils engineering (geotechnical engineering).

Soils Engineering (Geotechnical Engineering). “Soils engineering” or “geotechnical engineering” is the application of the principles of soils mechanics in the investigation, evaluation and design of

civil works involving the use of earth materials and the inspection or testing of the construction thereof.

Special Flood Hazard Area. "Special flood hazard area" means the land area covered by the floodwaters of the base flood is the Special Flood Hazard Area (SFHA) on NFIP (National Flood Insurance Program) maps. The SFHA is the area where the NFIP's floodplain management regulations must be enforced and the area where the purchase of flood insurance is mandatory.

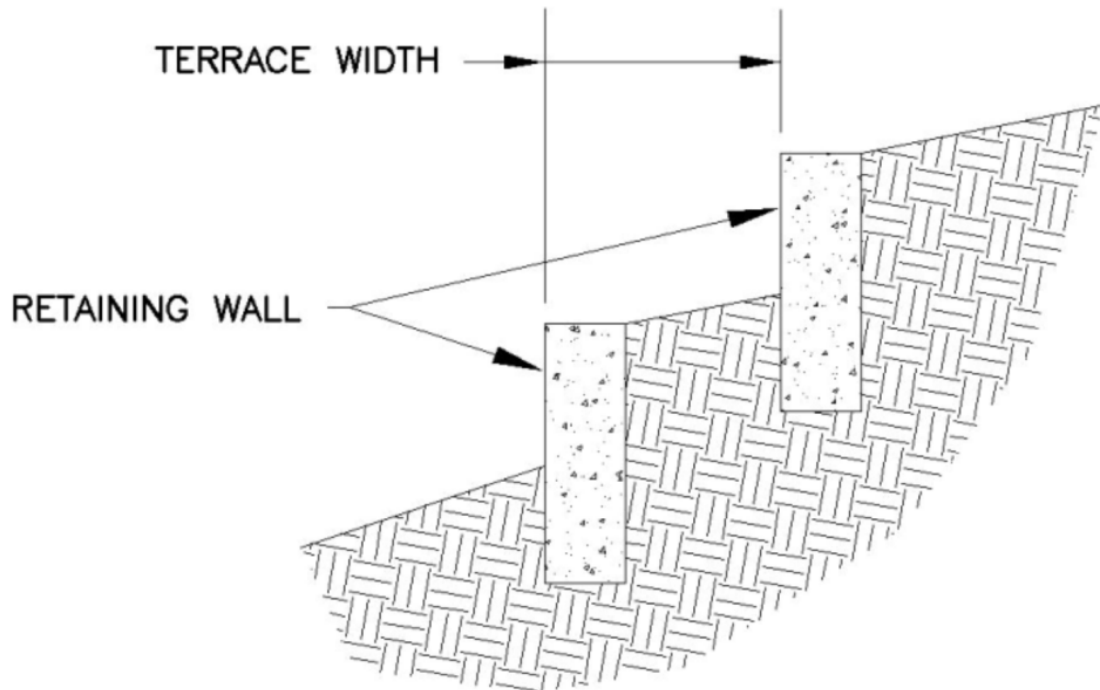
Stabilized Soil. "Stabilized soil" means earth or soil treated by the application of other materials such as rock, chemical palliatives or vegetation to inhibit creation of dust and erosion by wind or water.

Terrace. "Terrace" is a relatively level step constructed in the face of a graded slope surface for drainage and maintenance purposes.

Terrace Width. "Terrace width" the width of a relatively level step constructed in the face of a graded slope or between two (2) retaining walls (see Figure 110.438.25.TW).

Figure 110.438.25.TW

Terrace Width



Source: Washoe County Engineering Division

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.30 Hazards. Whenever the Building Official or County Engineer determines that any existing excavation or embankment or fill on private property has become a hazard to life and limb, or endangers property, or adversely affects the safety, use or stability of a public way or

drainage channel, the owner of the property upon which the excavation or fill is located, or other person or agent in control of said property, upon receipt of notice in writing from the Building Official or County Engineer, shall within the period specified therein repair or eliminate such excavation or embankment to eliminate the hazard and to be in conformance with the requirements of this code.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.35 Major Grading Permit Thresholds.

- (a) Major Grading Permits (Grading Requiring a Special Use Permit). A special use permit, pursuant to Article 810, is required for all major grading. Major grading is any clearing, excavating, cutting, filling, grading, earthwork construction, earthen structures and storage of earth, including fills and embankments that meet or exceed any one (1) or more of the following thresholds (for the purposes of this section the County Engineer shall determine the slope of the project area):
 - (1) Grading on slopes of less than (flatter than) fifteen (15) percent:
 - (i) Area:
 - (A) Grading of an area of one (1) acre (43,560 square feet) or more on parcels less than six (6) acres in size; or
 - (B) Grading of twenty (20) percent or more (up to a maximum of four (4) acres) of the area of the parcel on parcels six (6) acres or greater in size; or
 - (C) Grading of and area of more than four (4) acres on a parcel of any size; or
 - (ii) Volume:
 - (A) Excavation of five thousand (5,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site, or;
 - (B) Importation of five thousand (5,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site; or
 - (2) Grading on slopes of fifteen (15) percent or greater (steeper):
 - (i) Area:
 - (A) Grading of one-half (0.5) acre (21,780 square feet) or more on parcels less than six (6) acres in size; or
 - (B) Grading of ten (10) percent or more of the area of the parcel on parcels six (6) acres or greater in size; or

- (C) Grading of more than two (2) acres on any size parcel;
or
 - (ii) Volume:
 - (A) Excavation of one thousand (1,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site, or;
 - (B) Importation of one thousand (1,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another, final site; or
- (3) Any driveway or road that traverses any slope of thirty (30) percent or greater (steeper); or
- (4) Grading to construct a permanent earthen structure greater than four and one-half (4.5) feet in height within the required front yard setback, or greater than six (6) feet in height on the remainder of the property. The height of an earthen structure is measured from existing grade at the time of permit issuance; or
- (5) Grading within a special flood hazard area that results in importation and placement of more than one thousand (1,000) cubic yards of fill material; or
- (6) The creation of a dam structure that holds (retains) more than twenty-five thousand (25,000) cubic feet of water; or
- (7) Any grading in the Critical Stream Zone Buffer Area (CSZBA) of any Significant Hydrologic Resource (SHR) as defined by Article 418, Significant Hydrologic Resources.
- (b) A special use permit is not required for:
 - (1) Earthwork performed by the subdivider or developer of an approved subdivision, or other projects that has completed a hearing process and review pursuant to which mitigation conditions could have been attached in the same manner as in the special use permit process.
 - (2) Public utilities within the public right-of-way or a public utility easement.
 - (3) The area under a building footprint, paved roadway or paved parking lot on natural slopes less than (flatter than) thirty (30) percent.
 - (4) The area and volume of excavation required for landscaped areas devoted to and maintained with a mixture of new native and ornamental plants such as turf, groundcover, shrubs, flowers, vines and trees, as well as additional complementary decorative features such as rocks, decorative pavement, fountains, pools, sculpture and decorative walls, as shown on approved grading plans, that include landscaping in

accordance with standards for commercial uses pursuant to Article 412, Landscaping.

- (5) Areas disturbed by animal production, crop production, and the growing and harvesting of forest products that does not result in a change in elevation greater than three (3) feet.
- (6) The area and volume of excavation required for the traveled way of driveways to single-family residences, on slopes less than fifteen (15) percent. Where native soil provides inadequate stabilization, the driveway shall be stabilized with a surfacing material and method satisfactory to the County Engineer. This does not exempt the area and volume of any adjacent cut and fill slopes.
- (7) Grading for stabilization and restoration of areas damaged by natural disaster such as wildfire or flooding. Plans must include detailed stabilization specifications to the satisfaction of the County Engineer.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.36 Major Grading Permit Application Requirements.

- (a) Major Grading Permit Application Requirements. Major grading is equal to or greater than the limiting quantities for a special use permit as in Section 110.438.35. Application for a special use permit for grading (major grading) requires the following:
 - (1) Application for a major grading permit shall be accompanied by plans and specifications, and supporting data consisting of a soils engineering report and, when required by the County Engineer, an engineering geology report. The plans and specifications shall be prepared and signed by an individual licensed by the State of Nevada to prepare such plans or specifications. This individual shall be considered as the engineer or architect of record unless otherwise approved by the County Engineer.
 - (2) Specifications shall contain information covering construction and material requirements.
 - (3) Plans shall be drawn to scale and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that the work will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give the location of the work, the name and address of the owner, and the person by whom they were prepared.
 - (4) Financial assurances acceptable to the County Engineer, prior to approval of a grading permit to commence work in accordance with an estimate acceptable to the County Engineer for completion of the grading request as defined at Section 110.438.39.
 - (5) The plans shall include the following information:
 - (i) General vicinity of the proposed site.

- (ii) Property limits and accurate contours of existing ground and details of terrain and area drainage.
- (iii) All finish grade elevations, high point locations, limiting dimensions, and finished contours to be achieved by grading, and all drainage swales, natural drainage ways, and drainage easement locations both on-site and immediately off-site as needed to verify the proposed drainage system.
- (iv) Detailed plans of all surface and subsurface drainage devices, walls, cribbing, dams and other protective devices to be constructed with, or as a part of, the proposed work, together with a map showing the drainage area and the estimated runoff of the area served by any drains. All disturbed areas and cut and fill volumes shall be quantified and shown on the plans. Plans shall include diversion of runoff away from denuded slopes or other critical areas, as determined by the County Engineer, by means of barriers or ditches.
- (v) Location of any buildings or structures on the property where work is to be performed and the location of any buildings or structures on land of adjacent owners that are within fifteen (15) feet of the property line or that may be affected by the proposed grading operations.
- (vi) Recommendations included in the soils engineering report and the engineering geology report shall be incorporated in the grading plans or specifications. When approved by the County Engineer, specific recommendations contained in the soils engineering report and the engineering geology report, which are applicable to grading, may be included by reference.
- (vii) The dates of the soils engineering and engineering geology reports together with the names, addresses and phone numbers of the firms or individuals who prepared the reports.
- (viii) The destination of excavated material not used on site, how it will be used at its end destination and the location of temporary material storage site(s).
- (ix) Plans shall provide for preservation of trees and natural vegetation, wherever practical.
- (x) One (1) set of the following application materials and information shall be submitted in digital format. The digital files provided shall match those used for any exhibits and/or acreage information contained in the original paper application. Preferred file format will be compatible with ESRI Geographic Information System (GIS) software technology (AutoCAD files are acceptable but should only include the relevant layer information necessary to satisfy the requirements noted, and be formatted in a coordinate system acceptable to Washoe County).

- (A) The location and limits of all grading work to be done including proposed contours, cuts, and fills (i.e. finished grade elevations);
 - (B) Proposed drainage patterns (if altering existing drainage patterns) and any walls or terraces (with proposed height); and,
 - (C) The location of proposed buildings and building envelopes.
- (6) Soils Engineering Report. The soils engineering report required by Section 110.438.36(a) shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and opinion on adequacy for the intended use of site to be developed by the proposed grading as affected by soils engineering factors, including the stability of slopes.
- (7) Engineering Geology Report. The engineering geology report required by Section 110.438.36(a) shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinion on the adequacy for the intended use of sites to be developed by the proposed grading, as affected by geologic factors.
- (8) Liquefaction Study. The County Engineer may require a geotechnical investigation and report addressing the potential for liquefaction, for construction of a dam or when, during the course of an investigation, both of the following circumstances are discovered:
 - (i) Shallow groundwater, fifty (50) feet or less, and
 - (ii) Unconsolidated sandy alluvium.
- (9) Plans for major grading associated with the development of a commercial or industrial project or a residential subdivision shall include a plan to ensure that all disturbed areas are quickly stabilized to minimize the impact to human health by reducing or eliminating erosion and fugitive dust emissions. The Director of Community Development may require submittal of a phasing plan to avoid mass grading, where appropriate.
- (10) Shall include specifications for final stabilization of all disturbed areas.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.37 Minor Grading Permit Thresholds. A permit for minor grading is required for fifty (50) cubic yards of earthen material or greater or an area of ten thousand (10,000) square feet of grading of the land surface or greater, but less than the thresholds established for major grading.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.38 Minor Grading Permit Application Requirements.

- (a) Each application for a minor grading permit shall include grading plans that are drawn to scale and must be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that the work will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give the location of the work, the name and address of the owner, and the person by whom they were prepared. The plan shall include, as a minimum, the following information:
 - (1) General vicinity of the proposed site.
 - (2) Limiting dimensions and depth of cut and fill, including the quantities of all disturbed areas and volumes of cut and fill.
 - (3) Location of any buildings or structures where work is to be performed, and the location of any buildings or structures within fifteen (15) feet of the proposed grading.
 - (4) Location of all on-site drainage swales, natural drainage ways, and drainage easements both on-site and sufficient off-site locations as needed to verify the proposed drainage system.
 - (5) Property boundaries and accurate contours of existing ground and details of terrain and area drainage.
 - (6) Accurate contours of existing and proposed finish grading.
 - (7) Financial assurances as required in Section 110.438.36 for any grading in excess of one (1) acre.
 - (8) Specifications for final stabilization of all disturbed areas.
- (b) Any application for a minor grading permit that lacks sufficient detail and clarity, in the opinion of the County Engineer, may result in the imposition of any or all requirements for plans for major grading as specified in Section 110.438.36, specifically including the requirement for submission of plans prepared by a individual licensed by the State of Nevada to prepare such plans.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.39 Financial Security for Grading.

- (a) Financial security in the amount required in Section 110.438.36(a)(4) and in Section 110.438.38(a)(7) shall be provided to the County Engineer to assure that the work, if not completed in accordance with the approved plans and specifications, will be corrected to eliminate hazardous conditions, to assure completion of the work, to assure reclamation for uncompleted or completed work, and to assure correction of illegal or nonconforming work.
 - (1) The amount of the financial security shall be the higher of:
 - (i) Two thousand dollars (\$2,000) per acre of disturbed area, or

- (ii) A reclamation cost estimate when required and approved by the County Engineer.
- (2) The County Engineer may use the financial security at any point after cessation of work. The County Engineer may choose to suspend use of the bond or financial assurance if:
 - (i) Due diligence is shown to the County Engineer;
 - (ii) The County Engineer accepts a revised schedule for completion; or
 - (iii) Events beyond control of the permittee occur.
- (3) The applicant shall include an agreement with the County that grading shall be done as shown on the approved plans or the applicant shall restore the project site to its original undisturbed condition.
- (4) The financial security shall be released upon determination by the County Engineer of:
 - (i) Completion of work;
 - (ii) Completion of reclamation; or
 - (iii) Correction of illegal or nonconforming work.
- (5) After financial security is spent in whole or in part on reclamation of uncompleted work, additional financial security will be required prior to resumption of work.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.40 Unpermitted Grading, Stop Activity Order, Notice of Violation and Enforcement, Penalties and Procedures. Any major or minor grading, conducted prior to issuance of the appropriate permits as described in this article and any grading inconsistent with the amount, location and/or contour approved by such a permit, is unlawful, a misdemeanor, and a public nuisance under Washoe County Code 50.308.13. This article may be enforced by any of the remedies or procedures set out in Article 910, Enforcement. However, due to the major and irreversible impacts that grading may have on the lands of the County, special enforcement and stop activity order provisions set forth below apply:

- (a) Special Enforcement Provisions. The procedural provisions in Article 910, Enforcement, regarding criminal, civil, or administrative enforcement apply to enforcement of grading violations, except as follows:
 - (1) The County Engineer or his/her designee is hereby designated as an "enforcement official" for enforcement of this article, in addition to a peace officer, or any person authorized to issue citations in Article 910, Enforcement. The County Engineer or his/her designee shall be the primary enforcement official charged with enforcement of this article.

- (2) A Notice of Correction shall not be used. If a violation of this article is observed, the enforcement official will bypass the notice of correction and issue a notice of violation or notice of abatement.
 - (3) Mediation is not authorized in grading violation cases.
 - (4) If administrative enforcement procedures are used, a hearing before a hearing officer shall automatically be scheduled to occur within forty-five (45) days after the notice of violation or abatement is issued.
 - (5) If an appeal of the issuance of a notice of violation or notice of abatement is made to the Board of Adjustment or an appeal (judicial review) of the Board of Adjustment's decision is requested, during the time period in which that appeal or judicial review takes place:
 - (i) Unless otherwise agreed, all grading work in progress must stop pending the outcome of the appeal and the enforcement official may issue and enforce a stop activity order;
 - (ii) All criminal, civil or administrative proceedings shall be suspended pending the outcome of the Board of Adjustment appeal hearing, except for the issuance or enforcement of a stop activity order, and further except for the commencement of abatement proceedings as provided below.
 - (iii) If the Board of Adjustment affirms the issuance of the notice of violation or abatement, the criminal, civil or administrative procedures shall be resumed in order to obtain an order directing abatement and/or assessing penalties. If the Board or Court reverses the issuance of the notice of violation/abatement, all proceedings shall be terminated.
 - (6) The enforcement official may suspend or amend any provision in a stop activity order or notice of violation/abatement.
 - (7) During any of the proceedings described above, if the grading in question has caused or imminently will cause a dangerous condition as defined in NRS 244.3605, the County may, abate the condition to the extent necessary to avoid causing injury to or endangering the health, life, property or safety of the general public. An example would be grading that obstructs or interferes with drainage facilities.
- (b) Stop Activity Order. Upon reasonable suspicion that unpermitted grading has occurred or is occurring, a stop activity order may be issued by a peace officer, any person authorized to issue citations in Article 910, Enforcement, or the County Engineer and/or the County Engineer's designee (the "enforcement official"). Upon issuance of a stop activity order all grading activity on the subject site must cease. Any person who has been served with a stop activity order and continues to do any work in violation of the order, except work that is directed or approved by the enforcement official and is immediately necessary to remove a violation or unsafe condition, shall be guilty of a misdemeanor, and each day or part of a day that the person continues to perform the work shall be a separate offense.

- (1) The stop activity order shall:
 - (i) Describe the location and nature of grading observed and allege that it requires a grading permit or amendment of a grading permit.
 - (ii) Direct that all grading activities immediately stop until further notice and that violation of the stop activity order is punishable as a public nuisance.
 - (iii) Direct that the property owner or designee appear before the County Engineer within a specified number of working days [not to exceed ten (10)] to demonstrate that his/her conduct does not violate this code, or to appear before the County Building Official and/or the Director of Community Development to apply for the appropriate grading permit or other required authorization.
 - (iv) State the possible consequences of a failure to obey the order.
- (2) Remediation Order. The County Engineer and/or the County Engineer's designee may modify the stop activity order by issuance of a "remediation order" to include immediate steps to be taken, and a time schedule for those steps, to remediate any identified threats to the health, safety, and welfare of the public caused by the unpermitted grading. Failure to comply with the remediation order may result in Washoe County undertaking the necessary civil, criminal and/or administrative actions as determined by the County Engineer and/or the enforcement official and authorized by Section 110.438.30.
- (3) Rescinding of Stop Activity Order. A stop activity order may only be rescinded by:
 - (i) The enforcement official, when sufficient information has been provided for the County Engineer to determine that a grading permit is not required or upon the acquisition of all necessary permits, by the violator, or upon other circumstances at the discretion of the enforcement official when the intent of this code has been met, or
 - (ii) Order of an administrative hearing officer pursuant to Washoe County Code Chapter 125, or
 - (iii) Order of a court of competent jurisdiction.
- (4) If the violator does not immediately stop the work described in the stop activity order the County may seek an immediate civil injunction against further grading and possible appropriate remedies to abate unpermitted grading or may pursue other criminal remedies.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.41 Serial Grading Not Requiring Grading Permits. Any grading of less than fifty (50) cubic yards and/or grading of less than ten thousand (10,000) square feet, shall be limited to one (1) grading project each three (3) years on any parcel of land without the issuance

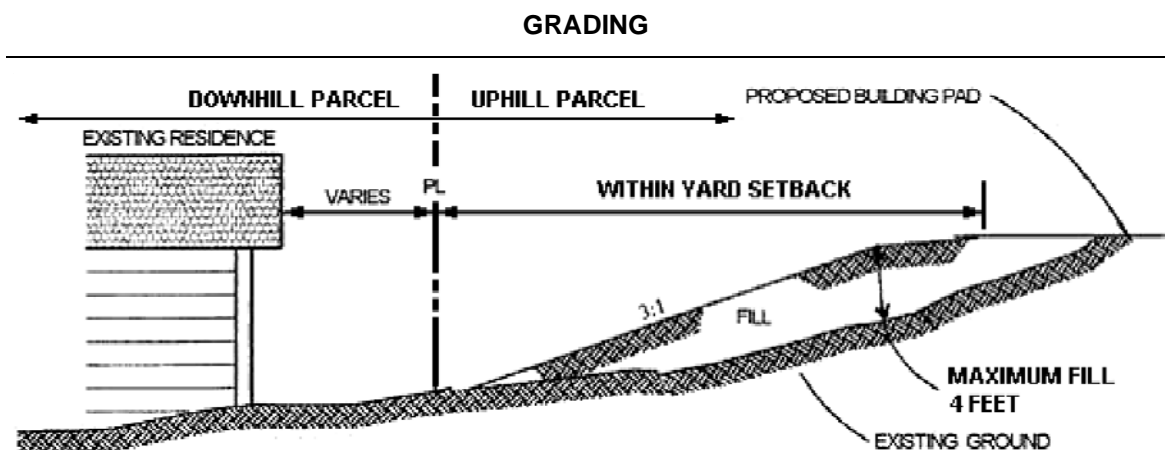
of a grading permit. Serial grading that results in a cumulative total greater than fifty (50) cubic yards and/or grading of more than ten thousand (10,000) square feet within any three (3) year period shall require approval of one (1) or more permits based upon the cumulative amount of all such grading.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.45 Grading of Slopes. The standards in this section shall apply to all grading for subdivision improvements, special use permits, or other discretionary permits. The standards in this section shall also apply to all grading for building and grading permits upon or adjacent to lots less than or equal to five (5) acres in size, and to all grading within one hundred (100) feet of all property lines on parcels greater than five (5) acres in size.

- (a) Grading shall not result in slopes in excess of, or steeper than, three horizontal to one vertical (3:1) except as provided below:
 - (1) Storm drainage improvements.
 - (2) Cut and fill slopes less than thirty (30) inches in height.
 - (3) Cut slopes proposed to be located behind civic, commercial and industrial buildings, when the cut slope is shorter than and substantially screened by the proposed building. Such slopes are subject to approval of a Director's Modification of Standards by the Director of Community Development.
 - (4) The County Engineer may waive this requirement for up to fifteen (15) percent of the length of the cut and/or fill where the presence of rock or, in his determination, other practical hardships exists.
- (b) Within the required yard setbacks fills shall not differ from the natural or existing grade by more than forty-eight (48) inches (see Figure 110.438.45.1).

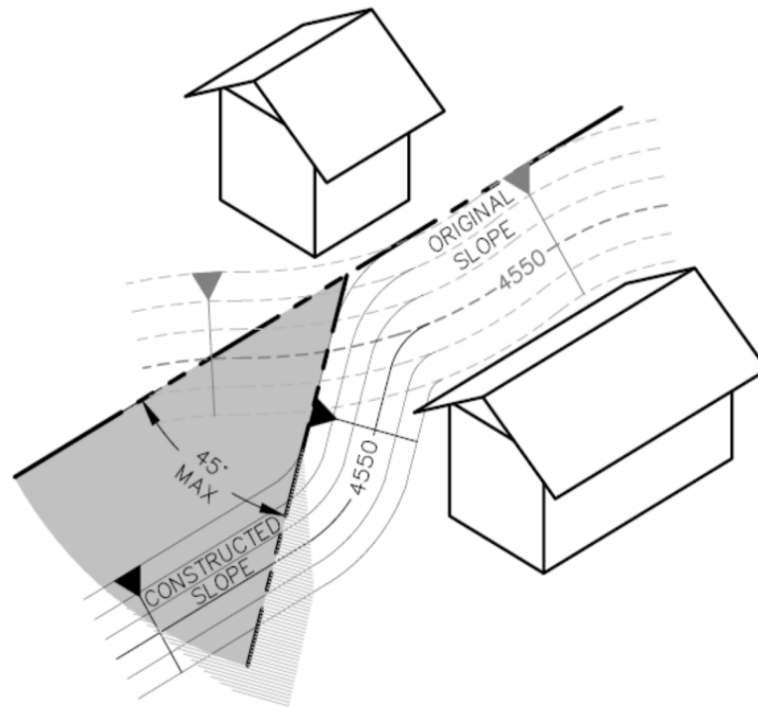
Figure 110.438.45.1



Source: Washoe County Engineering Division

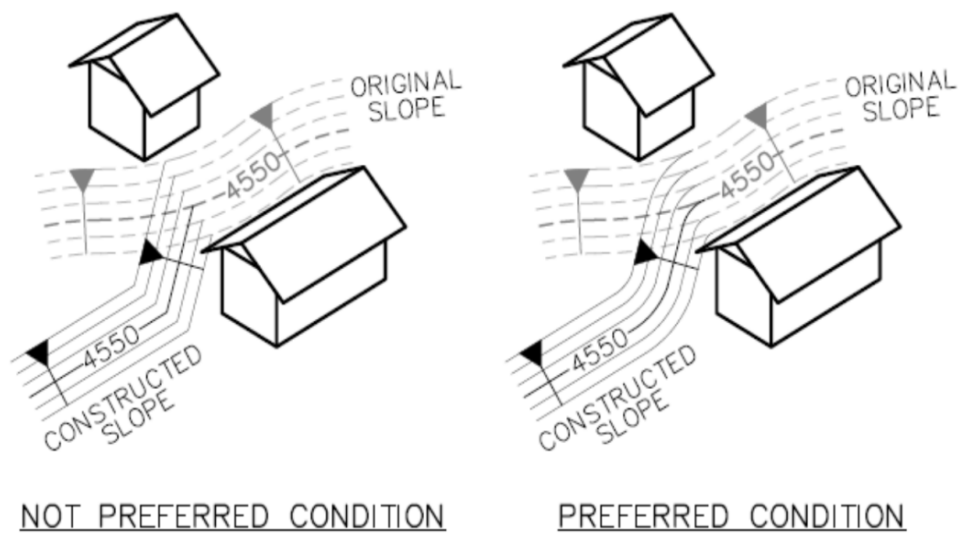
- (c) Finish grading shall not vary from the natural slope by more than ten (10) feet in elevation. Exposed finish grade slopes greater than ten (10) feet in height may be allowed upon the approval of a director's modification of standards by the Director of Community Development upon recommendation by the County Engineer.
 - (1) Approval of a director's modification of standards requires a determination that:
 - (i) The proposed cut and/or fill slopes include stepped-back structural containment (retaining walls) that form terraces, and;
 - (ii) The proposed terraces include landscaping, are a minimum of six (6) feet in width, and have a slope flatter than three horizontal to one vertical (3:1).
 - (iii) Retaining walls used to create terraces are limited to a maximum vertical height of ten (10) feet, when located outside any required yard setback.
 - (iv) Terrace widths shall be at least sixty (60) percent of the height of the higher of the two (2) adjacent retaining walls.
 - (v) Bench widths shall be at least four (4) feet.
 - (2) An exception to the terrace width may be allowed subject to the approval of a director's modification of standards by the Director of Community Development, upon recommendation by the County Engineer for cuts into stable rock, supported by a geotechnical report.
- (d) Within the front yard setback area of any parcel with a residential use or zoned for residential use, retaining walls are limited to a maximum height of four and one-half (4.5) feet.
- (e) Within the side and rear yard setback areas of any parcel with a residential use or zoned for residential use, as well as the front yard setback of any parcel zoned for commercial or industrial use, retaining walls are limited to a maximum height of six (6) feet.
- (f) Within the side and rear yard setback areas of any parcel zoned for commercial or industrial use, retaining walls are limited to a maximum height of eight (8) feet.
- (g) Utilize a gradual transition or "rounding or contouring" of the manufactured slope at the intersection of a manufactured cut or fill slope and a natural slope. Engineered slopes shall not intersect natural slopes at an angle greater than forty-five (45) degrees (see Figure 110.438.45.2).
- (h) Visually integrate all slope faces (cut or fill) into the natural terrain by a gradual transition or "contouring/rounding" of the manmade landforms into the natural terrain. To the extent practicable ensure that hillside grading results in undulating naturalistic appearance, consistent with the surrounding undisturbed terrain (see Figure 110.438.45.3).

Figure 110.438.45.2
SLOPE INTERSECTION



Source: Washoe County Engineering Division

Figure 110.438.45.3
SLOPE INTERSECTION



Source: Washoe County Engineering Division

- (i) Cut and/or fill slopes adjacent to roadways shall be flatter than three horizontal to one vertical (3:1) for the distance of the required American Associates of State Highway Transportation Officials (AASHTO) clear zone.
- (j) Ensure that when any cut is made for a structure pad, the exposed cut shall not exceed the height of the structure. The area of the cut that will be screened at buildout (by natural landscape, required landscaping and the structure) shall not be less than ninety (90) percent of the total area of the cut.
- (k) Proposed storm drainage improvements may include riprap and may include slopes steeper than three horizontal to one vertical (3:1) as approved by the County Engineer.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.50 Cuts. In addition to the requirements in Section 110.438.45, cut slope design and construction will also be based on a geotechnical report as required by Section 110.438.36 unless not required by the County Engineer.

- (a) The use of riprap and gabions as a mechanical stabilization for cut slopes is prohibited, except where essential for safe access, for passage within the rights-of-way of public roads, and for storm drainage control device(s).
- (b) Unless covered by soil and revegetated, all cuts into stable rock, greater than four (4) feet in height, and all riprap slopes constructed for roadways and utilities shall be treated with a permanent rock stain product to match the color of the adjacent undisturbed geology to the greatest extent practicable.
- (c) All cuts into stable rock, that are proposed to remain at the end of construction, shall be treated with a permanent rock stain product to match the color of the adjacent undisturbed geology to the greatest practical extent.
- (d) Modification or elimination of the standards in (b) and (c) above, may be allowed subject to the approval of a directors modification of standards upon his/her determination that the cut will be in the character of the adjacent, undisturbed land.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.55 Fills. Fills shall be constructed in accordance with Section 110.438.45. Fill slope design and construction will also be based on a geotechnical report as in Section 110.438.36(a)(6) and (7) unless determined not required by the Building Official or the County Engineer and, as applicable, the following general specifications:

- (a) Preparation of Ground. Fill slopes shall not be constructed on natural slopes steeper than two units horizontal to one unit vertical (2:1) (50 percent slope). The ground surface shall be prepared to receive fill by:
 - (1) Removing vegetation.
 - (2) Removing fill deemed unsuitable by the County Engineer.
 - (3) Removing topsoil and other unsuitable materials.

- (4) By scarifying to provide bond with the new fill.
 - (5) Where slopes are steeper than five units horizontal to one unit vertical (5:1) (20 percent slope) and the height is greater than five (5) feet, by benching into sound bedrock or other competent material as determined by the soils engineer.
 - (6) Drainage facilities shall be provided at the toe of fills in accordance with Section 110.438.65.
 - (7) When fill is to be placed over a cut or bench, the cut or bench shall be accepted by the soils engineer or engineering geologist as a suitable foundation for fill prior to fill placement.
- (b) Fill Material. Detrimental amounts of organic material, as determined by the geotechnical engineer, shall not be permitted in fills. Except as permitted by the Building Official or County Engineer, no rock or similar irreducible material with a maximum dimension greater than twelve (12) inches shall be buried or placed in fills. Exception: The Building Official or County Engineer may permit placement of larger rock when the soils engineer properly devises a method of placement, and continuously inspects its placement and approves the fill stability. The following conditions shall also apply:
- (1) Prior to issuance of the grading permit, potential rock disposal areas shall be delineated on the grading plan.
 - (2) Rock sizes greater than twelve (12) inches in maximum dimension shall be ten (10) feet or more below grade, measured vertically.
 - (3) Rocks shall be placed so as to ensure filling of all voids with well-graded soil.
- (c) Compaction. All fills shall be compacted to a minimum of ninety (90) percent of maximum dry density and in accordance with the project soils report.

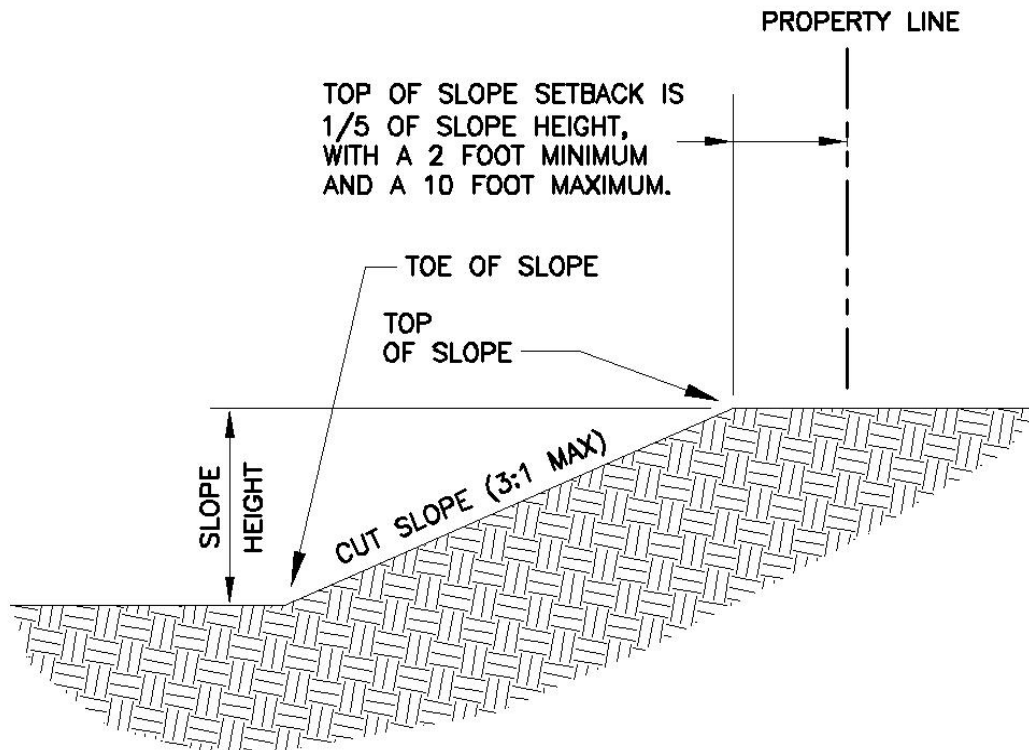
[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.60 Setbacks. Cut and fill slopes shall be set back from site boundaries in accordance with this section. Setback dimensions shall be horizontal distances measured perpendicular to the site boundary.

- (a) Top of Cut Slope. The top of cut slopes shall not be made nearer to a site boundary line than one-fifth (1/5) of the vertical height of cut with a minimum of two (2) feet and a maximum of ten (10) feet. The setback may need to be increased for any required interceptor drains (see Figure 110.438.60.TOCS).

Figure 110.438.60.TOCS

TOP OF CUT SLOPE

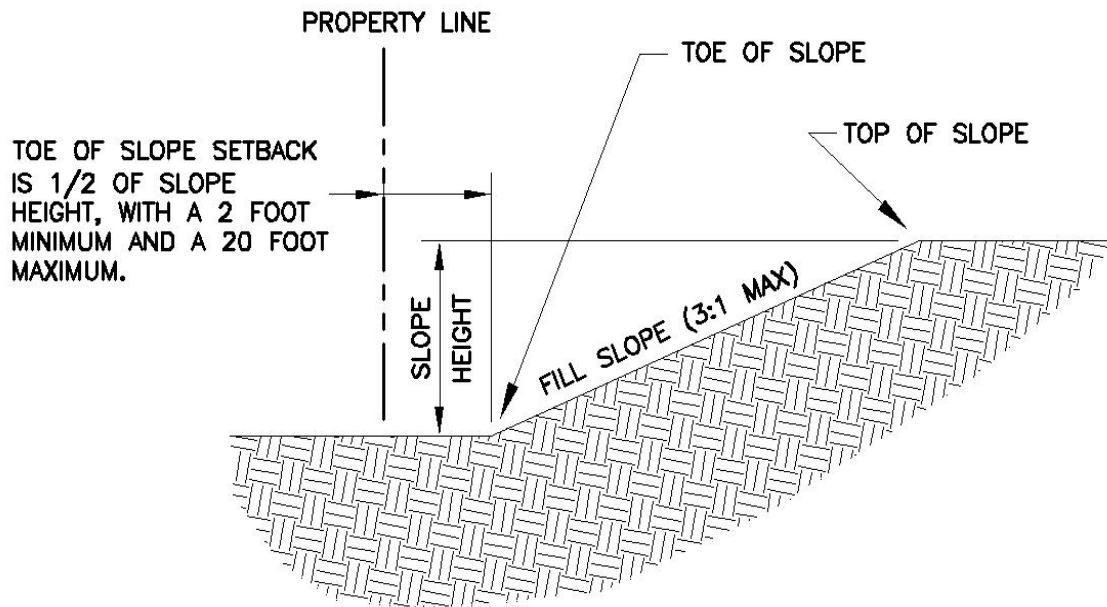


Source: Washoe County Engineering Division

- (b) Toe of Fill Slope. The required setback from the toe of the slope to the site boundary line shall be one-half (1/2) the height of the slope with a minimum of two (2) feet and a maximum required setback not to exceed twenty (20) feet (see Figure 110.438.60.TOFS). Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the Building Official or County Engineer deems necessary to protect the adjoining property from damage as a result of such grading. These precautions may include but are not limited to:
- (1) Additional setbacks.
 - (2) Provisions for retaining walls or slough walls.
 - (3) Mechanical or chemical treatment of the fill slope surface to minimize erosion.
 - (4) Provisions for the control of surface waters.

Figure 110.438.60.TOFS

TOE OF FILL SLOPE



Source: Washoe County Engineering Division

- (c) Modification of Slope Location. The Building Official or County Engineer may approve alternate setbacks subject to the approval of a director's modification of standards by the Director of Community Development, upon recommendation by the County Engineer. The Building Official or County Engineer may require an investigation and recommendation by a qualified professional to demonstrate that the intent of this section has been satisfied.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.65 Drainage and Terracing. Drainage facilities and terracing shall be shown on the approved grading plan.

- (a) Subsurface Drainage. Cut and fill slopes shall be provided with subsurface and surface drainage as necessary for stability.
- (b) Drainage Disposal. All drainage facilities shall be designed to carry waters to the nearest acceptable drainage way approved by the Building Official or County Engineer. Erosion of ground in the area of discharge shall be prevented by installation of erosion control facilities. Building pads shall have a drainage gradient of two (2) percent toward approved drainage facilities, unless waived by the Building Official or County Engineer.
- (c) Interceptor Drains. Paved interceptor drains shall be installed along the top of cut slopes and/or within terraces as recommended in the approved soils report.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.70 Erosion Control. Except in the case where bedrock is exposed, the faces of cut and fill slopes shall be prepared and maintained with landscaping and/or revegetation to control against erosion. This control may consist of plantings such as native grasses, and drought-resistant trees, shrubs, and ground covers, which shall be planted in random groupings to reduce the constructed character of manufactured slopes. Bark mulches and stone cobble may be allowed to cover fifty (50) percent of exposed bare ground. The landscaping protection for the slopes shall be installed as soon as practicable. However, the slopes shall be treated with a dust palliative if left undeveloped for more than thirty (30) days and shall be revegetated if left undeveloped for more than ninety (90) days. Where necessary, check dams, cribbing, or other devices or methods shall be employed to control erosion and provide safety. Any grading operation which will disturb an area of one (1) acre or more also requires a Nevada Department of Environmental Protection (NDEP) permit as per Section 110.438.100 and a dust control permit issued by the Washoe County Health Department, Air Quality Management Division.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.75 Grading Inspection. Major grading operations for which a permit is required shall be subject to inspection by the Building Official and/or County Engineer. Professional inspection of grading operations shall be provided by the civil engineer, soils engineer and the engineering geologist retained to provide such services in accordance with Section 110.438.75(d), and as required by the Building Official or County Engineer for minor grading [Section 110.438.35(c)].

- (a) **Civil Engineer.** The civil engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation and review as to the establishment of line, grade and surface drainage of the development area. If revised plans are required during the course of the work, they shall be prepared by the engineer of record.
- (b) **Soils Engineer.** The soils engineer shall provide professional inspection within such engineer's area of technical specialty, which shall consist of observation during grading and testing for required compaction. The soils engineer shall provide sufficient observation during the preparation of the natural ground and placement and compaction of the fill to verify that such work is being performed in accordance with the conditions of the approved plan and the appropriate requirements of this section. Revised recommendations relating to conditions differing from the approved soils engineering and engineering geology reports shall be submitted to the permittee, the Building Official or County Engineer and the engineer of record.
- (c) **Engineering Geologist.** The engineering geologist shall provide professional inspection within such engineer's area of technical specialty, which shall include professional inspection of the bedrock excavation to determine if conditions encountered are in conformance with the approved report. Revised recommendations relating to conditions differing from the approved engineering geology report shall be submitted to the soils engineer.
- (d) **Permittee.** The permittee shall be responsible for the work to be performed in accordance with the approved plans and specifications and in conformance with the provisions of this code, and the permittee shall engage consultants to provide professional inspections on a timely basis. The permittee shall act as a coordinator between the consultants, the contractor and the Building Official or County Engineer. In the event of changed conditions, the permittee shall be

responsible for informing the Building Official or County Engineer of such change and shall provide revised plans for approval.

- (e) Building Official. The Building Official and/or County Engineer shall inspect the project at the various stages of work requiring approval to determine that adequate control is being exercised by the professional consultants.
- (f) Notification of Noncompliance. If, in the course of fulfilling their respective duties under this article, the civil engineer, the soils engineer or the engineering geologist find that the work is not being done in conformance with this article or the approved grading plans, the discrepancies shall be reported immediately in writing to the permittee and to the Building Official or County Engineer.
- (g) Transfer of Responsibility. If the civil engineer, the soils engineer or the engineering geologist of record is changed during grading, the work shall be stopped until the replacement has agreed in writing to accept their responsibility within the area of technical competence for approval upon completion of the work. It shall be the duty of the permittee to notify the Building Official or County Engineer in writing of such change prior to the recommencement of such grading.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.77 Phasing and Stabilization of Grading. Grading projects shall be completed in phases and quickly stabilized to minimize the impact to human health by reducing or eliminating the amount of erosion and fugitive dust emissions that may be created.

- (a) Required Phasing. Grading for all projects shall be designed and completed such that final stabilization shall commence immediately, for the entire disturbed area, upon completion of grading for each phase of the project. The plan for stabilization and phasing must be acceptable to the Director of Community Development and the County Engineer.
- (b) Non-Phased Projects. Grading projects may be completed in one (1) phase, upon the determination by Washoe County staff that all of the following are true:
 - (1) The project has been designed to be completed as one (1) phase;
 - (2) The entire project area will be stabilized by means of permanent structures, pavement, parking areas, landscaped areas, revegetated areas and other required improvements prior to the issuance of a certificate of occupancy for the proposed use;
 - (3) Areas reserved for future building footprints within commercial and industrial developments are stabilized by means of appropriate soil stabilization methods to the satisfaction of the County Engineer; and,
 - (4) Financial assurances have been provided to the County Engineer to ensure appropriate continuous stabilization.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.80 Notification of Completion of Work.

- (a) Restrictions Pending Completion. Notification and inspection is required before the expiration of the permit to determine whether work is completed in accordance with the final approved grading plan. No final permit, final inspection or certificate of occupancy may be issued for other structures on the property until the grading permit has received a final inspection to determine that the grading work is complete or, if uncompleted, that reclamation work has been completed.
- (b) Engineering Certification. Prior to the scheduling of certain inspections, the Building Official or County Engineer shall require that a Nevada registered civil engineer or a Nevada registered land surveyor submit a certification letter on all parcels for the following:
 - (1) Soils investigation report indicating soils classification and design prior to the foundation inspection.
 - (2) Elevation, grading and drainage certification per the approved construction plans prior to the issuance of a certificate of occupancy. Exception: On parcels two (2) acres or more which do not affect the drainage on other properties, the Building Official or County Engineer may waive this certification requirement.
 - (3) Foundation elevation and building setback certification as per the approved plot plan prior to the foundation inspection.
- (c) Permittee Notification to Building Official Or County Engineer. The permittee or his agent shall provide written verification to the Building Official or County Engineer that the grading work has been completed in accordance with approved plans and specifications. Final approval shall not be given until all work, including installation of all drainage facilities and their protective devices, and all erosion control measures have been completed in accordance with the final approved grading plan and the required reports have been submitted to the Building Official and/or County Engineer by the permittee or his agent.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.85 Grading within Floodplains and Drainage Ways.

- (a) Grading for development within Federal Emergency Management Agency (FEMA) designated floodplains shall comply with Article 416, Flood Hazards.
- (b) Grading for development within floodplains other than those designated by FEMA and within natural drainage ways shall comply with Article 420, Storm Drainage Standards.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.95 Grading Plan for Tentative Maps. Grading plan submittals for tentative maps shall be in accordance with Article 608, Tentative Subdivision Maps.

[Added by Ord. 1499, provisions eff. 11/2/12.]

Section 110.438.100 NDEP Permits. A permit from the Nevada Department of Environmental Protection (NDEP) is required when grading operations will disturb an area of one (1) acre or more. As a minimum, it is required that the receipt showing the NDEP permit fee has been paid shall be submitted to the County Engineer.

[Added by Ord. 1499, provisions eff. 11/2/12.]

[Article 438, Grading Standards, updated in its entirety by Ord. 1499, provisions eff. 11/2/12.]

