

TITLE 11

CHAPTER 7

DESIGN STANDARDS

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11-7-1: LAYOUT OF BLOCKS AND STREETS

The design of blocks, streets, lots, open spaces and other design factors of the preliminary and final plats of subdivisions shall be in harmony with design standards recommended by the ALUA and other departments and agencies of the city government as is necessary. Design standards shall be approved by the city council and shall include provisions as follows, which are hereby approved by the city. All improvements shall be designed by a professional engineer licensed in the state.

- A. Length: Blocks shall not exceed nine hundred fifty feet (950') in length. Where existing conditions dictate, longer blocks may be approved by the city council as recommended by the ALUA.
- B. Width: Blocks shall be wide enough to adequately accommodate two (2) tiers of lots. Each lot shall abut on a street or lane shown on the subdivision plat or on an existing public street. Double frontage lots shall be prohibited except where unusual conditions make other designs undesirable as determined by the ALUA.
- C. Walkways: Dedicated walkways through a block may be required where access is necessary to a point designated by the ALUA. Such walkways shall be a minimum of six feet (6') in width, but may be required to be wider where determined necessary by the ALUA. Where required and as approved by the city, the applicant shall surface the full width of the walkway with a concrete or asphalt surface and install a chain link fence, or its equal. Barriers at each walkway entrance shall be provided by the applicant to prevent the use of the walkway by any vehicle (motorized or nonmotorized) greater than three feet (3') in width.
- D. Business or Industrial Use: Blocks intended for business or industrial use shall be designated specifically for each purpose with adequate space set aside for off-street parking and delivery facilities.

- E. Cluster Housing: Subdivisions containing multi-family dwellings or other types of cluster housing as allowed by the zoning ordinance shall provide adequate space for off-street parking. (Refer to the zoning ordinance for parking requirements.)
- F. Design and Arrangement: Lot design and arrangement shall provide for satisfactory and desirable sites for buildings, be properly related to the topography and relate to or improve the character of surrounding developments.
- G. Zoning Requirements: All lots shown on the preliminary and final plats must conform to the minimum requirements of the zoning ordinance for the zone, or proposed zone, in which the subdivision is located, and to the minimum requirements of other agencies having jurisdiction.
- H. Side Lines: Side lines of lots shall be designed to approach street lines at approximately right angles. (Ord., 8-12-2003)

11-7-2: LOCAL MINIMUM STANDARDS AND SPECIFICATIONS

Standards for design, construction specifications, and inspection of street improvements, curbs, gutters, sidewalks, storm drainage and flood control facilities shall be provided by the city engineer; standards for water distribution and sewage disposal facilities by the board of health; and similar standards for fire protection by the fire department. All applicants shall comply with the standards established by such departments and agencies of the city, county and state; provided that such standards shall be approved by the city council. These standards, the Public Works Construction Specifications, and the general standards listed below shall be used by all applicants. (Ord., 8-12-2003) (2-2019, 5-28-19)

11-7-3: STREETS AND STREET IMPROVEMENTS

- A. Arrangement: The arrangement of streets in subdivisions shall accommodate the continuation of existing streets in adjoining areas and shall provide access to unsubdivided adjoining areas insofar as such continuation or access shall be deemed necessary by the city.
- B. Connection with Existing Streets: New streets must connect with existing public streets.
- C. Right Of Way Width: The total street right of way width shall be standard at sixty-six feet (66') for collector streets and fifty feet (50') for minor, local and cul-de-sac streets. All references to the "total width" of a street, road, right of way or easement shall refer to the total width stated in the property title or right of way rights transferred or dedicated to the city. The paved or traveled portion of the same may be less than the total width to allow for curb, gutter, sidewalk and other necessary improvements or other requirements.
- D. Surfacing: Asphalt surfacing shall be provided in accordance with city standards.
- E. Grades: Grades of streets shall not exceed eighteen percent (18%) on short, unsustained stretches of street, nor in excess of eight percent (8%) on sustained

grades, unless otherwise approved by the city. Grades of streets shall be a minimum of one-half of one percent (0.5%).

- F. Leveling to Grade: Streets shall be leveled to a grade of less than four percent (4%) for a distance of at least one hundred feet (100') approaching all intersections; and at the intersection a grade of three percent (3%) shall be maximum, unless otherwise approved by the city engineer.
- G. Changes in Grade: All changes in street grade shall be connected by vertical curves of a minimum length equivalent to fifteen (15) times the algebraic difference in the rate of grade for collector streets and one-half (1/2) of this minimum for all minor or local streets.
- H. Radii of Curvature: Minimum radii of curvature on the centerline shall be as follows: three hundred feet (300') for collector streets and one hundred feet (100') for local or minor streets, unless otherwise approved by the city.
- I. Intersect Right Angles: Wherever possible, streets shall intersect at right angles.
- J. Minor Streets Approaching Collector Streets: Minor streets shall approach collector streets at an angle of not less than eighty degrees (80%).
- K. Residential Unit Access to Collector Streets: Access from residential units to collector streets shall generally be prohibited at and in all new subdivisions. Access to a collector street from a residential unit shall only be allowed where no other option or solution exists. Desiring to build a home too large for a lot that will not allow forward moving access onto a collector street does not constitute a hardship justifying approval of access that requires backing onto the street.
- L. Curb Corners: All curb corners shall have a radius of not less than twenty-five feet (25'). Where streets meet at acute angles, the radii shall be forty feet (40').
- M. Cul-De-Sacs: Cul-de-sacs should be minimized in the planning of subdivisions and shall not be longer than four hundred feet (400') to the beginning of the turnaround. Each cul-de-sac must be terminated by a turnaround right of way not less than one hundred ten feet (110') in diameter as measured to the property lines.
- N. Improvement of Streets: All streets within the subdivision shall be improved on both sides with pavements bounded by concrete curbs, concrete curb and gutter, or integral concrete curb/gutter/sidewalk. Street classification and roadway widths shall be in accordance with the master road plan of the city.
- O. Sidewalks: Sidewalks shall be provided on both sides of all public streets where possible. Sidewalks may be placed on only one side of public streets if terrain or other topographical features warrant such and if approved by the city. Under all circumstances, at least one sidewalk will be required on all public streets. Sidewalks shall be concrete and four feet (4') wide minimum and four inches (4") thick minimum, except at driveways where the thickness shall be increased to six inches (6") minimum.

- P. Sidewalk Handicapped Accessible: All sidewalks at all intersections of public streets shall conform to adopted state accessible (handicap) codes.
- Q. Curbs, Gutters and Sidewalks Installed: The applicant shall install curbs, gutters and sidewalks on existing and proposed streets in all subdivisions.
- R. Concrete Curbs, Gutters: Concrete curbs or curb and gutters shall be required on all streets. The profile design of curbs and curb and gutters shall be determined by the city engineer. Standard high back type curb and gutters shall be not less than thirty inches (30") in overall width, and not less than six inches (6") thick where the curb abuts the street pavement. Minimum grades for curb and gutter and streets shall not be less than one-half of one percent (0.5%).
- S. Grades from Crown of Road to Base of Curb: Curb and gutter and street grades from crown of road to base of curb shall be a minimum of two percent (2%).
- T. Damage to Existing: In the event existing sidewalks or curbs and gutters are damaged at any time, the damaging party shall repair or replace the damaged items.
- U. Storm Water Inlets and Catch Basins: Storm water inlets and catch basins shall be provided within the roadway improvements as per the approved construction documents. Where extensive storm sewers are required, all appropriate inlets, catch basins, etc., shall be designed and installed only after approval has been given by the city, which shall include approval of the city engineer.
- V. Protection Strips: Where subdivision streets parallel contiguous property of other owners, the applicant may, upon approval of the city, retain a protection strip not less than one foot (1') in width between the street and adjacent property; provided, that an agreement, approved by the city attorney, has been made by the applicant, contracting to deed to the then owners of the contiguous property, the one foot (1') or larger protection strip for a consideration named in the agreement. Such consideration shall not be more than the fair cost of the land in the protection strip, the street improvements properly chargeable to the contiguous property, plus the value of one-half (1/2) the land in the street at the time of agreement, together with interest at a fair rate from the time of agreement until the time of the subdivision of such contiguous property. One copy of the agreement shall be submitted by the city attorney and the ALUA prior to approval of the final plat. Protection strips shall not be permitted at the end of, or within, the boundaries of a public right of way, proposed public right of way, or any area intended for future public use. All protection strips shall be shown on the approved final plat prior to recording at the office of the county recorder. (6-2006, 5-9-06)
- W. Seal Coats: The developer shall pay River Heights City the cost to apply the seal coat on all paved roads in the subdivision. The seal coat cost shall be equal to the square footage of road surfaces in the subdivision multiplied by the cost per square foot for the type of seal coat to be used. The per square foot unit cost shall be disclosed on the fee schedule held in the City Office.

The type of seal coat to be used (high-density mineral bond, chip seal, slurry seal, etc.) shall be determined by "best practice" for the type of street as determined by

the Public Works Director and City Engineer. The seal coat cost, as paid to the city by the developer, shall be used by the city to pay for and install the initial seal coating for the subdivision within five (5) years of the completion of the subdivision. If not completed within five (5) years, and at the developer's request, any un-used seal coat funds shall be returned to the developer. (1-2018, 3-13-18)

11-7-4: WATER SYSTEM

- A. Water Mains: All culinary water main lines shall be PVC D-900, unless otherwise approved by the city. (Ord., 8-12-2003)
- B. Line Size: Minimum line size for water mains shall be eight inches (8") except at cul-de-sacs, where fire hydrants are not needed, then a four-inch (4") line size will be allowed. All nonlooped water lines that service fire hydrants shall be eight inches (8") minimum. Where main lines larger than eight inch (8") are requested by the city for future development, the city will consider cost sharing. Service lines shall be one inch (1") poly pipe or copper tubing and shall be installed to all lots within the subdivision by the applicant as per the city standard construction specifications and details.
- C. Setter: The applicant shall provide and install a one inch (1") setter which shall include a backflow preventer, an ABS meter barrel and a cast iron barrel lid at each subdivided lot. The top of the barrel lid shall be installed at the height of the finished grade and twelve inches (12") into the property from the property line. The setter shall be set twenty four inches (24") from the top of the meter barrel. (Ord., 8-12-2003; amd. 2005 Code)
- D. Hydrants: Fire hydrants shall be installed in all subdivisions at finished road level, at the expense of the applicant and in accordance with the regulations of the fire department and city standards.
- E. Pipeline Installed: Where a subdivision does not border an existing water line, the applicant shall install and bear all costs of pipeline from the subdivision to the nearest existing city water line.
- F. Looping of Lines: All water lines shall be "looped" rather than dead ended except in cases of cul-de-sacs and temporary dead end streets. Temporary dead end water lines shall continue to the property line of the subdivision for the purpose of looping with adjacent subdivisions.
- G. Depth: Depth of culinary water lines shall be a minimum of five feet (5') to the top of the pipe.
- H. Valves; Number and Placement: Valves shall be placed in the system so that sections of pipe no longer than six hundred feet (600') may be isolated and shut off from the rest of the system so repairs may be made with a minimal number of water connections out of service. When connecting to existing or new lines at tees, a minimum of two (2) valves shall be installed; where crosses are used, a minimum of three (3) valves shall be used.

- I. Pressure Testing: All water lines shall be pressure tested in the presence of the city engineer.
- J. Inspection: All phases of waterworks must be inspected by the city engineer or public works director before backfilling procedures are started. Actual connection of water lines to any live water lines shall be performed under the direction of the public works department.
- K. Standards: The entire system shall be designed and constructed in accordance with city standards and state health department standards. If there is conflict between the standards, the most stringent shall rule.
- L. Costs: The costs for connection of individual lot service to the city water supply shall be specified in the fee schedule held in the city office. (Ord., 8-12-2003)

11-7-5: SEWER SYSTEM

- A. Standards and Specifications: Sewer system design and layout shall meet all standards and specifications of the city and the state department of health.
- B. Permitted Waste: Domestic wastes only shall be allowed to enter the common collection system. Downspouts for roof drains, basement drains which lower ground water conditions, and other similar possible inflows to the sewer system shall not be allowed. Under no circumstance shall hazardous wastes or drainage from garage floors be allowed to enter the common collection system.
- C. Gravity Operation Preferred: Unless unfeasible, the system shall be designed so that the system operates by gravity means only. Sewage lift stations and force mains should be used only as a last resort.
- D. Depth: Depth of sewers shall be adequate to service basements of all houses within the subdivision or areas beyond the subdivision where it is anticipated that there will be extensions to the sewer system. (Ord., 8-12-2003)
- E. Line Size; Manholes: Sewer line size shall be eight inches (8") minimum, unless otherwise specified by the city engineer. Refer to the city public works - construction specifications for sewer pipe materials and type. Manholes shall be installed at all changes in grade and alignment and at maximum spacing of four hundred feet (400'). Where larger than ten inch (10") sewers are requested by the city to accommodate future development, sharing of the additional pipe cost will be considered by the city. Sewer service lines shall be four inch (4") minimum diameter. Sewer service lines shall be furnished and installed by the applicant to five feet (5') within the property line of each subdivided lot. This will allow for service connection without undermining street infrastructure. (Ord., 8-12-2003; amd. 2005 Code)
- F. Responsibility for Extending and Connecting; Approval: As with the water system, the applicant shall be responsible for extending and connecting to the nearest existing sewer main. The final line sizes, and final approval shall also be subject to approval by the city engineer.

- G. Costs: The costs for connection of individual lot service to the city sewer system shall be specified in the fee schedule to be held in the city office. (Ord., 8-12-2003)

11-7-6: STORM DRAINAGE

- A. Ditches or Canals: No ditch or canal shall be approved as suitable for the use of storm drainage without the written permission of the appropriate ditch or canal company or of the water users for such use. No ditch or canal shall be used for storm water unless adequately improved to handle such water as might be reasonably expected to flow from canal and ditch water, subdivision runoff water, and other water expected to reach such canal or ditch. At the discretion of the city, ditches, canals or other waterways may be prohibited on property dedicated, or to be dedicated, for public use. The applicant shall remove such waterways from property to be so dedicated before approval of the final plat shall be granted. The applicant shall indicate ditches, canals or waterways to be removed on the construction drawings.
- B. Adequate Structures: Storm drains, cross gutters, dip stone inlets and other appurtenant structures shall be provided by the applicant as required to adequately dispose of the 10-year frequency storm flows developed within the limits of the subdivision along with the existing flows entering the proposed subdivision from adjacent properties. The applicant shall have the responsibility of providing off site storm drain extensions in order to satisfactorily dispose of drainage. An excess storm water passage capable of conveying the peak runoff from a 100-year storm event through the subdivision shall be provided.
- C. Design of Complete Drainage Systems: Complete drainage systems for the entire subdivision area shall be designed by a professional engineer, licensed in the state and qualified to perform such work, which shall be shown graphically. All existing drainage features which are to be incorporated in the design shall be so identified. If the subdivision is to be platted in phases, a general drainage plan for the entire area shall be presented with the first phase, and appropriate development stages for the drainage system for each section, indicated. All proposed surface drainage structures shall be indicated on the plans. All appropriate designs, details and dimensions needed to clearly explain proposed construction materials and elevations shall be included in the drainage plans.
- D. Design Requirements: The drainage and flood plan systems shall be designed to:
 - 1. Permit the unimpeded flow of natural watercourses;
 - 2. Ensure adequate drainage of all low points; and
 - 3. Ensure applications of the following regulations regarding development in designated floodplains:
 - a. Construction of buildings shall not be permitted in a designated floodway with a return frequency more often than a 100-year storm.

- b. Building construction may occur in the portion of the designated floodway where the return frequency is between a 100-year and a maximum probability storm, provided all usable floor space is constructed above the designated maximum probable flood level.
- c. Where floodway flows are generally determined to be under five feet per second (5 fps) and maximum flood depth will not exceed three feet (3'), such uses as cultivated agriculture, nurseries, parks and recreation facilities and accessory parking may be permitted.
- d. Any use of land is prohibited where flooding would create a public health hazard or problem. This includes shallow wells, uncased deep wells, sanitary landfills, septic tanks and on lot sewage disposal systems, water treatment plants, and sewage disposal systems not completely protected from inundation.
- e. Any contemplated floodplain encroachment or channeling shall be thoroughly analyzed and its effect on stream flow determined before such encroachment is undertaken. Any construction, dumping and filling operations in a designated floodway constitutes an encroachment and must be approved by the ALUA before beginning operation.
- f. All lots shall be located at an elevation of at least two feet (2') above the elevation of the 100-year recurrence interval flood, or, where such data is not available, above the elevation of the maximum flood of record. (Ord., 8-12-2003)

11-7-7: OTHER GENERAL STANDARDS

- A. Irrigation Ditches: The applicant shall work with irrigation, drainage or ditch companies, and the city engineer regarding:
 - 1. Methods of covering, realigning or eliminating ditches or canals within or adjoining the subdivision.
 - 2. The size of pipe and culverts required.
 - 3. The responsibility for the periodic inspecting, cleaning and maintaining of such ditches, pipes and culverts. In cases where canals or ditches cross public roads or proposed public roads, specifications and grades for pipe or culvert must be approved by the city engineer.
- B. Street Trees: Providing, installing and maintaining of street trees shall conform to city regulations.
- C. Street Lighting: Street lighting shall be provided and installed by the applicant and conform to the City Public Works Construction Specifications and Standards and, the rules and regulations of the city outdoor lighting ordinance, title 9, chapter 3 of this code. The applicant shall work with the city engineer to

determine the style, size and location of street lighting in subdivisions. (5-2014, 8-26-2014) (2-2017, 3-14-17)

- D. Street Signs: Street signs shall conform to the design specifications, standards, rules and regulations of the city and shall be installed at all street intersections by the applicant. To assure uniformity, the city shall make available all required street signs, and the cost thereof shall be borne by the applicant.
- E. Monuments: Permanent survey monuments shall be furnished, accurately established and set by the applicant's surveyor at such points as are necessary to establish all lines of the plat. Rebar lot pins shall be placed at all individual lot corners and angle points. (Ord., 8-12-2003)