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# ARTICLE IV

# REQUIREMENTS FOR IMPROVEMENTS, RESERVATIONS, AND DESIGNS

## 4-101 General Requirements

### 4-101.1 Conformance to Applicable Rules and Regulations

In addition to the requirements established herein, all subdivision plats shall comply with all applicable laws, ordinances, resolutions, rules, or regulations, including, but not limited to:

1. all applicable provisions of Tennessee Law, regulations, or policy;

2. any zoning ordinance, any building and housing codes, and all other applicable laws or policies of the governing body;

3. the adopted general plan and major road or street (public way) plan;

4. the rules of the County Health Department and the Tennessee Department of Environment and Conservation;

5. the rules, as applicable, of the Federal Highway Administration or Tennessee Department of Transportation, if the subdivision or any lot contained therein abuts a nonlocal highway; and

6. the standards and regulations adopted by all other boards, commissions, and agencies of the governing body, where applicable.

Plat approval may be withheld if a subdivision is not in conformity with the above rules or with the provisions set forth in Section 1-104, of these regulations.

### 4-101.2 Self-Imposed Restrictions

If the owner places restrictions on any of the land contained in the subdivision greater than those required by any zoning ordinance or these regulations, such restrictions or references thereto shall be recorded with the county register on a separate form, along with the final subdivision plat.

### 4-101.3 Monuments

Permanent reference monuments of non degradable material shall be placed in all subdivisions when new streets are to be constructed. All monumentation shall be placed on property corners or referenced to property lines or road alignments. Certification by a licensed surveyor of placement of monuments shall be required. Monuments will generally not be required within minor subdivisions (as defined by these regulations) when the subdivision occurs along existing streets. The Planning Commission retains the right, however, to require monuments within minor subdivisions where flooding or other extraordinary conditions are found to exist. Monuments shall be placed only after all street construction is complete and curbs have been backfilled or drainage ditches cut. Monuments shall be located and set as follows:

1. Control Monuments -- At the discretion of the City Planning Director or his authorized designee, a minimum of three (3) permanent control monuments, containing both vertical and horizontal data, shall be located within each subdivision where new roads are to be constructed. Such monuments shall be constructed of stone or concrete not less than thirty (30) inches in length; nor less than four (4) inches square or five (5) inches in diameter; and marked on top with a cross, brass plug, iron rod, or other durable material securely embedded and shall have horizontal coordinates and vertical elevations shown on the final plat. Reference notes (field ties) defining magnetic bearings and distances to the nearest established street line or official benchmark shall be accurately described on the plat. All control monuments shall be located within dedicated right-of-way along curve points or lot lines and within line of sight of one another. All vertical data shall be referenced to the 1929, datum established by U.S.G.S. These monuments are to be placed near the entrance to the subdivision and, if possible within a non-fill area or be affixed to natural rock outcrops. The location of all control monuments shall be described on the final plat with words and symbols that facilitate locating them at the site.

2. Internal Monuments and Lot Pins -- One (1) monument, for each four (4) lots or fraction thereof located within the subdivision, shall be placed within line of sight of one another. Such monuments shall be placed within dedicated right-of -way, when possible, and shall be located within non-fill areas or affixed to rock natural outcrops. In all subdivisions, lot corners and all lot line breaks shall be staked with by iron rods, pipe, or pins at least eighteen (18) inches long and five-eighths (5/8) inch in diameter.

3. Along Rivers and Streams -- The lines of lots that extend to rivers or streams shall be monumented in the field by iron pins at least eighteen (18) inches long and five-eighths (5/8) inch in diameter or by round or square iron bars at least eighteen (18) inches long. Such pins shall be placed at the point of intersection of the river or stream and lot line, with a meander line established not more than forty (40) feet back from the bank of the river or stream. At the discretion of the Planning Commission a control monument meeting the specifications of subpart (1) above may be required upon any lot affected by the 100 year floodplain of any stream.

### 4-101.4 Character of the Land

Land which the Planning Commission finds to be unsuitable for subdivision or development due to flooding, improper drainage, steep slopes, rock formations, adverse earth formations or topography, utility easements, or other features which would be harmful to the safety, health, and general welfare of inhabitants of the land and surrounding areas shall not be subdivided or developed unless adequate methods are formulated by the developer and approved by the Planning Commission, to solve the problems created by the unsuitable land conditions. Such land shall be set aside for such uses as will not involve such a danger.

Where protection against flood damage is necessary, in the opinion of the Planning Commission, flood-damage protection techniques may include, as deemed appropriate by the Planning Commission:

1. the imposition of any surety and deed restrictions enforceable by the Planning Commission to regulate the future type and design of uses within the flood prone areas; and

2. flood protection measures designed so as not to increase, either individually or collectively, flood flows, height, duration, or damages, and so as not to infringe upon the regulatory floodway.

3. installation of flood warning systems.

4. the use of fill, dikes, levees, and other protective measures.

5. the use of floodproofing measures, which may include:

   (a) anchorage to resist flotation and lateral movement.

   (b) installation of watertight doors, bulkheads, shutters, or other similar methods of closure.

   (c) reinforcement of walls to resist water pressures.

   (d) use of paints, membranes, or mortars to reduce seepage through walls.

   (e) addition of mass or weight to structures to resist flotation.

   (f) installation of pumps to lower water levels in structures.

   (g) construction of water supply and waste treatment systems so as to prevent the entrance of or contamination of flood waters.

   (h) installation of pumps or comparable facilities for subsurface drainage systems to relieve external foundation wall and basement flood pressures.

   (i) building design and construction to resist rupture or collapse caused by water pressure or floating debris.

   (j) installation of valves or controls on sanitary and storm drains which permit the drains to be closed to prevent backup of sewage and stormwater into buildings or structures.

   (k) location and installation of all electrical equipment, circuits, and appliances so that they are protected from inundation by the regulatory flood.

   (l) location of storage facilities for chemicals, explosives, buoyant material, flammable liquids, or other toxic materials which would be hazardous to the public health, safety, and welfare at or above the regulatory flood protection elevation, or design of such facilities to prevent flotation of storage containers or damage to storage containers which could result in the escape of toxic materials.

The acceptability of any flood protection methods formulated by the subdivider or his agent shall be determined by the Planning Commission, which shall be guided by the policies set forth in Section 1-104 and Subsection 2-101.4, of these regulations.

### 4-101.5 Subdivision Name

The proposed name of the subdivision shall not duplicate or too closely approximate phonetically the name of any other subdivision in the area covered by these regulations. The Planning Commission shall have authority to designate the name of the subdivision which shall be determined at the time of sketch or preliminary plat approval.

### 4-101.6 Authorization to Construct Improvements

Approval of the preliminary plat by the Planning Commission and approval by the City Engineer of construction plans shall constitute authorization to construct improvements within a subdivision. Absolutely no construction shall take place until construction plans are officially approved.

### 4-101.7 Maintenance of Improvements

The maintenance bond shall per the provisions of the City's Municipal Code. The maintenance bond may be renewed by the City, if additional time is needed to complete further buildout of the subdivision. (See Section 3-103, for specifics).

The maintenance bond shall be released when at least seventy-five (75) percent of the subdivision lots have been satisfactorily completed, inspected and released by the inspecting departments. The maintenance bond shall be in an amount and for a term as recommended by the City Engineer and shall be posted in conformance with the procedures presented in Article III, of these regulations.

## 4-102 Lot Requirements

### 4-102.1 Lot Arrangement

#### 4-102.101 General

The lot arrangement shall be such that there will be no foreseeable difficulties, for reasons of topography, flood hazards, or other conditions in securing building permits to build on all lots in compliance with any zoning ordinance and state and county public health department regulations and

in providing driveway access to buildings on such lots from an approved public way. All lots shall contain an adequate building site free from flooding. In all cases, all platted lots must be shown to be buildable lots. All lots that cannot be shown as buildable lots must be removed from within the subject subdivision.

### 4-102.102 Lots Subject to Flood

Where a lot in any flood prone area must be improved to provide a building site free from flooding, such improvements shall be made outside the floodway by elevation or fill to at least the regulatory flood protection elevation (one hundred-year flood) for a distance extending at least twenty-five (25) feet beyond the limits of intended structures and, additionally, extending a sufficient distance to include areas for subsurface sewage disposal if the lot is not to be connected to a public sanitary sewer system. Any fill shall be protected against erosion by rip-rap, vegetative cover, or other methods deemed acceptable by the Planning Commission.

On nonresidential building sites outside a floodway, but subject to flooding, the use of structural floodproofing methods specified in Subsection 4-101.4, of these regulations, as an alternative to landfill, may be approved by the Planning Commission, as provided in Subsection 2-101.4, of these regulations.

### 4-102.103 Lots Located on Steep Slopes

Due to the potential threat to health and safety posed by development located on lands with slopes in excess of fifteen (15) percent, the following regulations shall apply:

a. Site Development Plan Required -- No building permit shall be issued for a building on any lot with slopes fifteen (15) percent or over until a site plan meeting the following requirements has been approved by the chief enforcement officer or the applicable designated official. Said site plan shall show:

   (i) The exact size, shape, and location of the lot,

   (ii) The proposed location of all buildings, driveways, drainageways, and utilities,

   (iii) Proposed contours at vertical intervals of no more than five (5) feet,

   (iv) The extent of natural tree cover and vegetation,

   (v) The location of any on-site soil absorption sewage disposal systems,

   (vi) The type and location of erosion control methodology.

   (vii) The surveyor's or engineer's stamp that prepared the plan,

(viii) Certification as to the stability of the structures and slope and compliance with sound construction methods for areas with steep slopes and landslide problems by a registered civil or geotechnical engineer.

b. Site Development Standards -- The following standards shall be used as a guide in determining the suitability of the construction proposed for the particular site in question. The engineer's certification required in Subsection 4-102.103, a, (viii), above, shall address these standards.

(i) Natural vegetation shall be preserved to the maximum extent possible,

(ii) Natural drainageways and systems shall be maintained, except that surface water may be diverted around a house or slope area to a natural drain using acceptable construction techniques,

(iii) Development densities shall be limited to one (1) dwelling unit per one (1) acre of land,

(iv) Operations that increase loads, reduce slope support, and cause instability of the slope shall be prohibited to the maximum extent possible which will permit reasonable development of the site. These include filling, irrigation systems, accessory buildings, and on-site soil absorption sewage disposal systems,

(v) Where sanitary sewers are not available any on-site sewage disposal system shall be shown on the site plan and located to avoid slide-prone areas. Said system shall be approved by the county health department prior to the staff's review taking into account these requirements,

(vi) Erosion control measures shall be employed to prevent all soil material from leaving the site. Additionally, soil from excavation on the site shall not be disposed as fill on a potential slide area,

(vii) No construction which would cut the top of the slope shall be permitted. This shall apply as well to subdivision roads constructed in compliance with these regulations.

## 4-102.2 Lot Dimensions

Except as provided in Subsection 4-102.3 (Special Building Separation), lot dimensions shall comply with the minimum standards of any zoning ordinance, where applicable. All building setbacks shall be indicated for each lot shown on the plat.

Where lots are more than double the minimum area required by any zoning ordinance, the Planning Commission may require that such lots be arranged so as to allow further subdivision and the opening of future public ways where they would be necessary to serve such potential lots, all in compliance with any zoning ordinance and these regulations.

Dimensions of the corner lots shall be large enough to allow for erection of buildings, observing the minimum front yard setback requirements from both public way rights-of-way.

The minimum lot frontage on a public way shall be fifty (50) feet, except for the radius of a cul-de-sac which shall be thirty (30) feet.

Depth and width of properties reserved or laid out for business, commercial, or industrial purposes shall be adequate to provide for the off-street parking and loading facilities required for the type of use and development contemplated, and as established in any zoning ordinance.

### 4-102.3 Special Building Separation

In any instance where fire flows are inadequate to meet the requirements of these regulations or no fire hydrant is located within sufficient distance to meet the fire protection standards established herein, the minimum separation of principal buildings shall at all points be one hundred (100) feet.

### 4-102.4 Building Setbacks from High Voltage Electric Lines

In the case of electric transmission lines where easement widths are not definitely established, a minimum building setback line from the center of the transmission line shall be established as follows:

| Voltage of Line | Building Setback |
|---|---|
| 7.2 KV | 15 feet |
| 13 KV | 25 feet |
| 46 KV | 37 1/2 feet |
| 69 KV | 50 feet |
| 161 KV | 75 feet |

### 4-102.5 Double Frontage Lots and Access to Lots

#### 4-102.501 Double Frontage Lots

Double frontage and reversed frontage lots shall be avoided, except where necessary to provide separation of residential development from traffic arterials, or to overcome specific disadvantages of topography and orientation.

#### 4-102.502 Access from Arterial or Collector Public Ways

The Planning Commission may require that lots shall not derive access exclusively from arterial or collector public ways. Where driveway access

from such public ways may be necessary for several adjoining lots, the Planning Commission may require that the lots be served by a combined access drive in order to limit possible traffic hazards. Where approved by the Planning Commission, driveways shall be designed and arranged so as to avoid requiring vehicles to back onto arterial or collector public ways and driveways for new platted lots on collector streets designated on the City's Major Roadway Thoroughfare Plan shall be a minimum of three hundred (300) feet spacing and arterial streets designated on the City's Major Roadway Thoroughfare Plan shall be a minimum six hundred (600) feet spacing. The Planning Commission may review alternative subdivision designs regarding driveways locations and driveway designs submitted with an engineering traffic study supporting the driveway locations and designs.

### 4-102.503 Minimum Clearance

The minimum corner clearance between proposed new driveways and routes designated in the Major Thoroughfare Plan as collector streets shall be one hundred and fifty (150') feet and arterial streets shall be of the curb line (or roadway shoulder where there are no curbs of a public intersection in order to ensure adequate storage space for vehicles stopped at a signalized intersection and/or turn lanes at a non-signalized intersection. No point of driveway access shall be allowed within thirty (30') feet of the curb line (or roadway shoulder when there are no curbs) of a public intersection for access and non-collector/arterial streets.

All access driveways on TDOT regulated roadways and highways shall meet TDOT requirements including permits.

The distance between a frontage property line and the tangent projection of the nearest edge of each nonresidential driveway, measured along the edge of the public way, shall be at least fifteen (15) feet.

### 4-102.504 Design Standards for Nonresidential Driveways

For access to thoroughfares where the posted speed limit is 40 m.p.h. or less, all nonresidential driveways shall be constructed with a minimum return radius of fifteen (15) feet and a minimum horizontal width of twenty-five (25) feet. All drives serving nonresidential property shall be paved with concrete or an asphaltic surface.

For access to thoroughfares where the posted speed limit is over 40 m.p.h., nonresidential driveways shall be constructed with a right turn deceleration lane and, a minimum return radius of twenty-five (25) feet and a minimum driveway width of forty (40) feet; or

The Planning Commission will review proposed driveway designs for access to other thoroughfares on a case by case basis.

The centerline of every nonresidential two (2) way driveway shall intersect the centerline of the public way at an angle between seventy-five (75) and ninety (90) degrees.

For other nonresidential driveways, the intersection angle shall be subject to the approval of the Planning Commission.

Where permitted, commercial and industrial driveways on all types of streets shall be designed so as to avoid vehicles backing onto such roads. **(Added by Resolution, November 13, 2001)**

### 4-102.505 Design Standards for Residential Driveways

Where permitted, commercial and industrial driveways on all types of streets shall be designed so as to avoid vehicles backing onto such roads.

All residential driveways fronting collector and arterial routes designated in the Major Thoroughfare Plan shall be designed so as to avoid requiring vehicles to back onto these highways.

The first ten (10) feet of all residential driveways shall be hard surfaced with asphalt or concrete for the width of the driveway. **(Added by Resolution, November 13, 2001)**

#### 4-102.506 Relationship to State Standards

Where the driveway design and location standards listed above are not in conformance with the standards of the Tennessee Department of Transportation, the Planning Commission may require conformance with whichever standard is more restrictive.

### 4-102.6 Soil Preservation, Grading, Erosion Control, and Seeding

#### 4-102.601 Soil Preservation and Final Grading

No certificate of occupancy shall be issued until final grading has been completed in accordance with the approved construction plan. Destroyed portions or incomplete dust and erosion control structures must be installed/repaired within 24 hours as required herein or a stop work order will be issued by the enforcing officer.

Topsoil shall not be removed from residential lots or used as spoil, but shall be redistributed so as to provide cover on the lots, cover between any sidewalks and curbs, and be stabilized by seeding or planting.

Permanent or temporary soil stabilization shall be applied to denuded areas within fifteen (15) days after final grade is reached on any portion of the site. Soil stabilization shall also be applied within fifteen (15) days to denuded areas that may not be at final grade, but will remain undisturbed for longer than sixty (60) days.

#### 4-102.602 Lot Drainage

Lots shall be laid out so as to provide positive drainage away from all buildings; individual lot drainage shall be coordinated with the general storm drainage pattern for the area.

Drainage shall be designed so as to avoid concentration of storm drainage water from each lot to adjacent lots, except within drainage easements or street right-of-way. Surface water drainage patterns shall be shown for each and every lot on the road and drainage plans.

It shall be the responsibility of the builder of any building or other structure to design and construct a suitable drainage scheme that will convey surface water, without ponding on the lot or under the building, to the drainage system constructed within the subdivision.

The Planning Commission reserves the right to require that the developer set minimum elevations on all floors, patios, and building equipment. This prerogative to establish elevation exists in addition to any ordinances that refer to floodplain elevation requirements. The content of the preceding paragraph is to give the Planning Commission summary review powers over any calculated or historical evidence of storm water presence in overland or channel conditions.

The subdivision developer will insure that all artesian ground waters of a permanent or temporary nature encountered within the right-of-way will be intercepted and carried away to primary drainage conduits along swaled ditches or in underground pipes located on property line easements. Regardless of the location of property lines, intercept will be allowed at the point of artesian surfacing. The developer is obligated to perform this work upon evidence of artesian water for a period of one (1) year following acceptance of all roads and utilities.

Any sinkhole or natural channel which serves or has served as a means of moving or storing ground water, including all designated floodways, shall be designated conservation easements and no structures, fill or development activity shall be permitted thereon.

### 4-102.603 Erosion and Sediment Control

There shall be a minimization of changes in the rate of natural erosion and sedimentation which result from the development process. An erosion and sediment control plan shall be presented with the construction plans submitted in conformance with Section 5-103, of these regulations. Such erosion and dust control plans shall be in accordance with the Tennessee Erosion and Sediment Control Handbook, as prepared by the Tennessee Department of Environment and Conservation in 1992, and incorporate the following principals:

a. clearing and grading shall be integrated with layout design;

b. clearing shall be minimized and existing vegetation shall be preserved to the maximum feasible degree;

c. grading shall be strictly limited to those areas involved in current construction activities;

d. disturbed areas shall be protected and stabilized as provided in Subsection 4-102.601;

e. structural and vegetative measures to control the velocity and volume of runoff shall be required;

f. sediment basins and traps shall be required as necessary;

g. adequate maintenance of all planting and structures measures shall be assured.

All properties adjacent to the site of land disturbance shall be protected from sediment disposition. This may be accomplished by preserving a well-vegetated buffer strip around the lower perimeter of the land disturbance; by installing perimeter controls such as sediment barriers, filters, dikes or sediment basins; or by a combination of such measures. Erosion protection measures must be maintained by the subdivider/developer.

### 4-102.7 Debris and Waste

No cut trees, timber, debris, junk, rubbish, or other waste materials of any kind shall be buried in any land or left or deposited on any lot, in any natural drainageway (such as sinkholes, underground streams or channels, or wet weather stream beds or floodways) or public way at the time of the issuance of a certificate of occupancy for the lot, and removal of such waste shall be required prior to issuance of any certificate of occupancy. Neither shall any such waste be left nor deposited in any area of the subdivision at the time of expiration of the performance bond or dedication of public improvements, whichever is sooner.

### 4-102.8 Fencing

Each subdivider or developer shall be required to furnish and install all fences wherever the Planning Commission determines that a hazardous condition exists. Such fences shall be constructed according to standards established by the Planning Commission, as appropriate, and shall be noted on the final plat as to height and required materials. No certificate of occupancy shall be issued for any affected lot until such fence improvements have been installed.

### 4-102.9 Water Bodies and Watercourses

If a tract being subdivided contains a water body, or portion thereof, lot lines shall be so drawn as to distribute the entire ownership of the water body among the fees of adjacent lots. The Planning Commission may approve an alternative plan whereby the ownership of and responsibility for safe maintenance of the water body is so placed that it will not become a governmental responsibility.

No more than ten (10) percent of the minimum area of a lot required under any zoning ordinance may be satisfied by land which is under water. Where a watercourse separates a buildable area of a lot from the public way to which such lot has access, provisions shall be made for installation of a culvert or other structure approved by the Planning Commission and no certificate of occupancy shall be issued for a structure on such a lot until the installation is completed and approved by the Planning Commission and/or the appropriate governmental representative. For the purposes of these regulations, under water shall be defined as any area shown on FEMA Flood Maps as being within a designated floodway, any blue line stream depicted on a U.S.G.S. topographic map, or any permanent body of water.

### 4-102.10 Blocks

a. Blocks shall have sufficient width to provide for two (2) tiers of lots of appropriate depth. Exceptions to this prescribed block width may be permitted in blocks adjacent to major public ways, railroads, or waterways.

b. The lengths, widths, and shapes of blocks shall be determined with due regard to:

(i) provision of adequate building sites suitable to the special needs of the type of use contemplated;

(ii) any zoning requirements as to lot sizes and dimensions;

(iii) needs for convenient access, circulation, control, and safety of vehicular and pedestrian traffic; and

(iv) limitations and opportunities of topography.

c. Block lengths in residential areas shall not exceed twelve hundred (1,200) feet, except as the Planning Commission deems necessary to secure efficient use of land or desired features of the public way pattern. Wherever practicable, blocks along arterial or collector routes shall not be less than eight hundred (800) feet in length.

d Blocks designed for industrial or commercial uses shall be of such length and width as may be deemed suitable by the Planning Commission.

e. In any long block, the Planning Commission may require the reservation of an easement through the block to accommodate utilities, drainage, facilities, and/or pedestrian traffic.

## 4-103 Streets and Pedestrian Ways

### 4-103.1 Pedestrian Ways

#### 4-103.101 Sidewalks Along New Streets

Sidewalks shall be required along all urban streets (see Table 1) constructed in all subdivisions except those proposed for industrial use. Sidewalks shall not be required along streets designated as rural when all lots fronting such streets are (1) acre or larger in size and have average road frontage of one hundred fifty (150) feet or more.

#### 4-103.102 Sidewalks Along Existing Streets

Within any zone district no developer shall be required to install sidewalks along an existing public street unless sidewalks presently exist upon property which directly adjoins the proposed subdivision or unless reconstruction of the existing street is required by an approved traffic impact study.

#### 4-103.103 Location of Sidewalks

Sidewalks shall be required along both sides of all streets designated as residential access lanes, urban residential access streets and urban residential collectors. Along streets designated as arterial streets

sidewalks shall be required along both sides. When sidewalks are to be constructed in a subdivision adjoining a developed area with sidewalks, the sidewalks shall be joined and extended along the same side of the street. Transition of sidewalks from one side of a street to another will be permitted when topography makes continuation along the same side of the street impractical. Transitions shall only be made at street intersections. In residential zone districts, sidewalks will not be required on permanent dead-end streets less than three hundred (300) feet in length.

Sidewalks shall be included within the dedicated non-trafficway portion of the right-of-way of all public ways. Concrete curbs are required for all public ways where sidewalks are to be constructed. A median strip of grassed or landscaped area at least two (2) feet wide shall separate all sidewalks from adjacent curbs, except within ten (10) feet of intersections no grass strip will be required. No sidewalk shall be constructed closer than one (1) foot from any lot line. Construction detail shall be shown in Appendix B, of these regulations.

### 4-103.104 Sidewalk Width

The width of sidewalks shall be as follows. Width shall be exclusive of encroachments such as utility poles, fire hydrants, parking meters, sign standards, street furniture, etc.

**SIDEWALK WIDTH**

| Street Classification | Land Use Classification | | |
|---|---|---|---|
| | Residential | Commercial | Industrial |
| | | | |
| Access Lane | 5 feet | N/A | N/A |
| Access Street | 5 feet | N/A | N/A |
| Residential Collector | 5 feet | 5 feet | N/A |
| Arterial Public Way | 5 feet | 6 feet | 6 feet |

### 4-103.105 Alternative Pedestrian Ways

Within PUD Districts approved under the provisions of the zoning ordinance, the Planning Commission may approve pedestrian walkways at locations other than along the rights-of -way of streets. Within these developments, pedestrian walkways may be provided within a system of pathways located within areas of commonly held open space. Within such developments, the Planning Commission shall approve the plan of pedestrian walkways upon recommendation of the City Planning Director.

### 4-103.106 Pedestrian Accesses

The Planning Commission may require, in order to facilitate pedestrian access from the public way to schools, parks, playgrounds, or other nearby public ways, perpetual unobstructed easements at least twenty (20) feet in width. Easements shall be indicated on the plat.

## 4-103.2 Street Standards

The following standards shall apply to all streets, both public and private.

### 4-103.201 Frontage on Improved Public Ways

No subdivision shall be approved, unless the area to be subdivided shall meet the access requirements set forth in Subsection 1-112.107, of these regulations. If any new street construction is proposed, all construction shall be in accordance with the provisions of these regulations in the City's Municipal Code.

### 4-103.202 Grading and Improvement Plan

Public ways shall be graded and improved to conform to the standards required by this section and the City's Municipal Code shall be approved as to design by the City Engineer in accordance with the specifications required herein and the City's Municipal Code. No construction of streets shall begin until such plans have been approved.

### 4-103.203 Improvements in Floodable Areas

The finished elevation of proposed public ways subject to flood shall be no less than the regulatory flood protection elevation (the 100-Year Flood Elevation). The Planning Commission shall require profiles and elevations of public ways subject to flood to determine compliance with this requirement. All drainage structures shall be sufficient to discharge flood flows without increasing flood height. Where fill is used to bring the finished elevation of any public way to the required elevation, such fill shall not encroach upon a floodway, and the fill shall be protected against erosion by rip-rap, vegetative cover, or other methods deemed acceptable by the Planning Commission.

### 4-103.204 Topography and Arrangement

a. All public ways shall be arranged so as to obtain as many of the building sites as possible at or above the grades of the public ways. Grades of public ways shall conform as closely as possible to the original topography. A combination of steep grades and curves shall not be permitted.

b. All public ways shall be properly integrated with the existing and proposed system of public ways and dedicated rights-of-way as established on the major street or road plan or the land development plan.

c. All public ways shall be properly related to special traffic generators, such as industries, business districts, schools, churches, and shopping areas or centers; to population densities; and to the pattern of existing and proposed land use.

d. In commercial and industrial developments, public ways and other access routes shall be planned in connection with the grouping of buildings, location of rail facilities, and the provision of alleys, truck loading and maneuvering areas, and walks and parking areas, so as to minimize conflict of movement between the various types of traffic, including pedestrian traffic.

### 4-103.205 Access to Arterial and Collector Routes

Where a subdivision borders on or contains an existing or proposed arterial or collector route, the Planning Commission shall require that access to such public way be limited by:

a. the subdivision of lots so as to limit access on the arterial or collector route and front on a parallel minor route;

b. a series of cul-de-sac, "U" shaped public ways, or short loops entered from and designed generally at right angles to such a parallel public way, with the rear lines of their terminal lots backing onto the arterial or collector route; or

c. a marginal access or service public way, separated from the arterial or collector route by a planting or grass strip and having access thereto at suitable points.

d. minimum driveway spacing meeting the requirements of section 102.502.

### 4-103.206 Traffic Impact Study

Any subdivision containing lots for seventy-five (75) or more dwelling units shall be required to prepare at the expense of the developer or individual proposing the subdivision a traffic impact study. At the discretion of the City Planning Director, a subdivision of any size may be required to prepare a traffic impact study. Such study shall be prepared by a licensed traffic engineer in accordance with standards and procedures supplied by the City. The study will provide information as to current and proposed or projected traffic levels along all streets touching, immediately abutting or directly impacted by the subdivision. Prior to development of the study, the applicant and/or the individual selected by the developer to prepare the study shall meet with the City Planning Director for purposes of establishing scope and design parameters to be used in preparing such study. Any improvements proposed to offset the traffic impact of the subdivision shall be indicated. Such traffic impact study shall be submitted with the associated preliminary plat.

### 4-103.207 Reserve Strips

The creation of reserve strips adjacent to a proposed public way in such a manner as to deny access from adjacent property to such public way shall generally not be permitted. However, where in the opinion of the Planning Commission the use of a reserve strip would protect the public safety by providing a safer roadway configuration or other element of design that is clearly in the public interest, this prohibition may be waived. In any

instance where a waiver to this provision is granted the grounds for and extent of such waiver shall be noted in the minutes of the Planning Commission meeting where such wavier is approved.

### 4-103.208 Street Name, Regulatory and Warning Signs

a. Public Streets - The developer shall purchase and install all signage and pavement markings as shown on the approved Construction Plans. All signage and pavement markings shall conform to the most current edition of the FHWA Manual on Uniform Traffic Control Devices (MUTCD). All signage shall have a minimum retroreflectivity of Type III prismatic sheeting or better. All signs shall be mounted 7 feet from ground elevation to the bottom of the sign. Mounting hardware shall be tamperproof. Signs not listed in the MUTCD and variations to pavement markings in the MUTCD must be reviewed for approval by the City Engineer. **Stop signs** shall be sized 24" for local streets, 30" at local street connections to collector streets, and 36" on streets with a posted speed limit of 35 MPH or greater. **Street Name signs:** Sign blade- 6" height x length. Color- White legend with green background (no border). Lettering- C-series letters (4" upper and lower case). The first letter in each word shall be upper case. Decorative designs must be reviewed for approval by the City Engineer and the Planning Commission.

   The Developer shall supply the City Engineer with a Certificate of Compliance from the sign manufacturer prior to installation of any street signage.

b. Private Streets - The developer shall purchase and install all signage and pavement markings as shown on the approved Construction Plans. All signage and pavement markings shall conform to Subsection (a) above.

c. Plat Recording and Issuance of Building Permits - No plat shall be recorded nor any building permit issued for any building located on any lot therein until street name, regulatory and warning signs have been installed. Provided, however, that in any instance where temporary signs are utilized as provided in Subsection 4-103.208, Subpart "a", the plat may be recorded and such permanent signs included in the construction bond.

d. Note to Appear on Plat - All subdivision plats which require street name signs shall have a note located thereon stating: No building permit shall be issued for any lot until street name, regulatory and warning signs are installed and verified by the Superintendant of Public Works on all streets on which such lot depends for access.

e. Any construction identification signs must be installed at or before the acceptance of graded streets.

## 4-103.3 Private Streets

### 4-103.301 Generally

Where the ownership, control and maintenance of any street is proposed to remain in private ownership such streets shall be constructed to the design and construction standards as herein provided. A permanent access easement over such streets shall be provided to each and every parcel or lot which is to gain access therefrom. All such private improvements shall be maintained by the developer/owner or by a legally established homeowner's association or other similar group approved by the Planning Commission. The legal documents establishing ownership and maintenance of the easement shall be submitted with the final plat for review and approval and shall be recorded with the final plat. A bond may be posted to guarantee such improvements in a like manner as required for public streets.

### 4-103.302 Within Planned Unit Developments

Private streets located within a Planned Unit Development shall conform to the following provisions:

a. All hardware such as catch basins, inlets, etc., and all drainage structures shall meet the standards set forth herein and in other design standards adopted by the City Engineer or the Superintendent of Public Works.

b. All curbs shall meet or exceed the standards set for in these regulations for public streets. Subject to approval of the City Engineer, materials may be varied to conform to alternative materials chosen for private streets.

c. Pavement and base thickness shall equal or exceed the load bearing capacity, cross sectional area, structural integrity and life expectancy of public streets specified herein. Subject to the requirements of this section and approval of the City Engineer, alternative road construction surfacing materials such as concrete (including exposed aggregate) and pavers may be utilized.

d. Excepting lots proposed for occupancy by single-family houses, all vehicular access shall be shown on the plat, and the design elements shall be approved by the City Engineer.

e. Parking bays may generally be permitted upon or adjoining private streets, provided that in all instances an open unobstructed travel way sufficient to provide access for emergency vehicles is maintained.

### 4-103.303 Within All Other Residential Districts

Private streets serving residential properties located within districts other than Planned Unit Development Districts shall conform to the following provisions.

a. No more than ten (10) lots may be served by a private street or network of streets.

b. All private streets serving two (2) or more lots shall as a minimum be constructed to the standards specified in herein.

## 4-103.4 Requirements for Dedications, Reservations, or Improvements

Where a proposed subdivision adjoins or encompasses either a substandard street, or a route depicted upon the Major Thoroughfare Plan, that is to be opened, widened or realigned, the following shall apply.

### 4-103.401 Undeveloped Property

a. Substandard Streets

Substandard streets encompassed by or adjacent to the proposed subdivision shall be improved by the developer in accordance with the minimum standards set forth in Subsection 4-104.4, Tables 1 and 2, for that street portion located within the boundaries of the subdivision or the abutting street half.

b. Planned Routing

When applicable, the layout of a street(s) within a subdivision shall conform to the routing depicted upon the Major Thoroughfare Plan. The amount of right-of-way for the type of street required shall be dedicated up to a maximum of that required for construction of Arterial routes. Where any street so depicted requires a right-of-way greater than that required for construction of Arterial routes, the developer shall show on the face of the plat an additional area reserved for future right-of way and any required yard area shall be measured from the reservation line.

Regardless of the proposed width or functional character of the planned street adjacent to or encompassed by a proposed subdivision, the developer will not be required, (except as required by an approved traffic impact study), to improve or construct any street within a residential area greater than that of a residential collector street as defined and depicted in these regulations.

### 4-103.402 Developed Property

When property containing existing structures is being divided simply to place each structure on a separate lot and the future right-of-way will fall within the footprint of an existing structure, then the subdivider shall be required to note on the face of the plat as, reserved for future right-of-way, any additional area necessary for compliance with the Major Thoroughfare Plan. The plat shall also contain a note stating, when any existing structure is demolished, the setback requirements for any new structure shall be measured from the reservation line.

### 4-103.403 Required Improvements or Dedications

All on-site traffic improvements identified as being required in a traffic study prepared in accordance with the requirements of Subsection 4-103.206, shall be made by the developer upon land which the developer controls. Any off-site improvements identified in such study shall be made on a pro-rata basis to the extent the subdivision contributes to the requirement for such improvement(s). The City Planning Director shall be responsible for calculating the extent of participation required in off-site improvements.

## 4-104 Functional Design Criteria

### 4-104.1 Purpose

In order to provide public ways of suitable location, width, and improvement to accommodate prospective traffic and afford satisfactory access to police, fire-fighting, sanitation, and road-maintenance equipment, and to coordinate public ways so as to compose a convenient and safe system and avoid undue hardships to adjoining properties, the public way design standards set forth in this section are hereby required. These provisions are intended to establish appropriate standards for the design of streets in residential subdivisions that will:

1. Promote the safety and convenience of vehicular traffic,

2. Protect the safety of neighborhood residents,

3. Minimize crime in residential areas,

4. Protect the residential qualities of neighborhoods by limiting traffic volume, traffic speed, noise and fumes,

5. Encourage the efficient use of land,

6. Minimize the cost of street construction and thereby restrain the rising cost of housing, and

7. Minimize the construction of impervious surface thereby protecting the quantity and quality of the community's water resources.

### 4-104.2 Design Hierarchy

There is, hereby, established a design hierarchy according to street function. The purpose of the hierarchy is to establish clear functional guidelines and limitations to be utilized in the design of streets.

#### 4-104.201 New Streets

Each proposed street shall be classified and designed for its entire length to meet or exceed the minimum standards for one of the following street types:

a. Residential Access Lane

b. Residential Access Street

(1) Rural Residential Access Street

(2) Urban Residential Access Street

c. Residential Collector Street

(1) Rural Residential Collector Street

(2) Urban Residential Collector Street

d. Arterial Street

### 4-104.202 Existing Streets

Each street abutting or affecting the design of a subdivision or land development which is not already classified on the Major Thoroughfare Plan shall be classified according to its function, design and use by the Planning Commission at the request of the applicant during the plan review process. The classification of existing streets shall include the hierarchy of Subsection 4-104.201, above, and may also include classifications of higher order as determined by the adopted Major Thoroughfare Plan.

### 4-104.203 Traffic Volume Calculations

a. Trip Generation Rates

The following chart shall be used to determine the anticipated average daily traffic level of proposed residential development:

| HOUSING TYPE | AVERAGE WEEKDAY TRIP GENERATION RATES (ADT PER DWELLING UNIT) |
|---|---|
| **Single Family Detached Dwellings** | **8 trips** |
| **Cluster or Town Houses** | **7 trips** |
| **Garden Apartments (1-4 Story)** | **6 trips** |
| **Retirement Complex** | **3.5 trips** |

b. Volume Calculations

Calculation of traffic volumes shall be accomplished by using the following formula:

**(Factor for Dwelling Unit Type) x (Number of Units Receiving Access from the Street) = Design ADT**

## 4-104.3 Residential Street Design Criteria and Service Restrictions

The material contained within this segment is intended to provide information as to the intended function, design capacity and service limitations of the various

street types presented in Subsection 4-104.2, above, as they pertain to residential property. The order of presentation proceeds from smallest capacity street to the greatest. For each street identified within the hierarchy, the following design elements are presented:

- Street Function
- Design Capacity and Service Restrictions
- Street Access Criteria

### 4-104.301 Residential Access Lane

a. Street Function - A residential access lane is a frontage street which provides access to abutting properties; it shall be designed to carry no more traffic than that generated by those properties which gain direct access from the street.

b. Design Capacity and Service Restriction - Each residential access lane shall be designed so that no section of the street conveys an average daily traffic (ADT) volume greater than two hundred (200) or serves more than twenty-five (25) single family dwellings. Each half a loop street may be regarded as a single local access street and the total traffic volume generated on a loop street shall not exceed four hundred (400) ADT.

c. Street Access - Residential access lanes may intersect or take access from any street type. Both ends of a loop street, however, must intersect the same collecting street and be laid out to discourage through traffic.

### 4-104.302 Residential Access Street

a. Street Function - Residential access streets are designed to provide access to individual properties as well as access to the higher classification street network. The residential access street provides for neighborhood circulation and may carry neighborhood traffic and through movements. Residential access streets differ in their design depending upon their location. The rural residential street is designed to maintain the rural character of the area or neighborhood. It is designed as a curbless paved street section, with gravel shoulders for emergency parking and open roadside ditches for drainage. The urban residential street performs the same function as the rural residential street except within an urban environment. The urban residential street is designed as a curb street.

b. Design Capacity and Service Restriction - The residential street is designed to convey an average daily traffic (ADT) volume in the range of five hundred (500) to one thousand (1,000).

c. Street Access - If the total design traffic exceeds five hundred (500) ADT, a residential access street shall be provided with no fewer than two (2) access intersections to streets of higher classification in the street hierarchy. For residential access streets with less than five hundred (500) ADT, one access intersection to a street of higher order is allowed.

### 4-104.303 Residential Collector Street

a. Street Function - The residential collector street provides access to individual properties and collects and distributes neighborhood traffic from residential streets to arterial streets.

b. Design Capacity and Service Restriction - The residential collector street is designed for residential streets where the anticipated traffic volumes range from one thousand (1,000) to twenty-five hundred (2,500) trips per day. The Planning Commission may require that lots shall not derive access exclusively from arterial or collector public ways. The amount of residential frontage shall not exceed the limits set forth in the accompanying chart and driveways shall be designed per section 102.502. In addition, driveway design shall be provided on these lots for turnaround so that vehicles will not have to back onto collector streets.

**PERCENT OF THE TOTAL LENGTH OF COLLECTOR STREETS, WHICH MAY HAVE RESIDENTIAL LOTS FRONTING ON AND TAKING ACCESS FROM THE COLLECTOR STREET**

| ADT Level | 1000-1199 | 1200-1599 | 1600-1999 | 2000+ |
|---|---|---|---|---|
| % of allowable access frontage | 20% | 15% | 10% | 5% |

### 4-104.304 Arterial Street

a. Street Function - Arterial streets collect and distribute traffic from residential collector and other residential streets to the arterial transportation systems.

b. Design Capacity and Service Restriction - The arterial street is designed for anticipated traffic volumes ranging from twenty-five hundred (2,500) to six thousand (6,000) trips per day. The Planning Commission may require that lots shall not derive access exclusively from arterial or collector public ways.

## 4-104.4 General Design

The general design of all public ways shall conform to the standards in the tables which follow, hereafter and the City's Municipal Code.

## 4-104.401 Rights-of-Way and Pavement Width

Minimum rights-of-way and pavement width shall be provided as required to meet the design standards for the various classifications of streets set out in Tables 1 and 2.

a. Reduction in Right-of-Way Width

The city may reduce the required right-of-way width for residential streets under the following condition:

The site is located within a Planned Unit Development under applicable provisions of the Zoning Ordinance.

In no instance shall a right-of-way be less than thirty (30) feet. In granting the reduced right-of-way width, it shall be determined that sufficient width will be available to provide for all the following (unless separate right-of-way for them is being provided elsewhere to the satisfaction of the city, or they are clearly not required by the proposed development):

Pavement
Curbs
Shoulders
Utility easements
Drainage swales
Pedestrian and/or bicycle paths
Street trees or other planting strips
Turning lanes
Cut or fill slopes (the right-of-way shall extend five (5) feet beyond the crest or toe of these slopes).

b. Increase in Right-of-Way Width

## 4-104.402 Intersections

a. Pavement shall intersect as nearly as possible to a ninety (90) degree angle for a minimum of fifty (50) feet from the intersection. A proposed intersection of two (2) new public ways at an angle of less than seventy-five (75) degrees shall not be permitted. Not more than two (2) public ways shall intersect at any one point, unless specifically approved by the Planning Commission.

b. Centerline off-sets of less than one hundred fifty (150) feet between T-type intersections within public ways shall not be permitted, except where the intersected public ways have separated dual drives without median breaks at either intersection. Where public ways intersect arterial or collector routes, their alignment shall be continuous. Intersections of arterial or community collector streets shall be at least eight hundred (800) feet apart.

**(Amended by Resolution, November 13, 2001)**

## TABLE 1

## MINIMUM RIGHT-OF-WAY OR EASEMENT AND PAVEMENT WIDTH (in feet) BY STREET TYPE AND INTENSITY OF DEVELOPMENT

| | RESIDENTIAL | | | | NONRESIDENTIAL | |
|---|---|---|---|---|---|---|
| | Low Density | | High Density | | | |
| STREET TYPE | | | | | | |
| | ROW | PAVEMENT | ROW | PAVEMENT | ROW | PAVEMENT |
| Access Lane | | | | | | |
| Urban/Rural | 40 | 20 | 50 | 26 | | |
| | | | | | | |
| Access Street | | | | | | |
| Urban/Rural | 50 | 22 | 50 | 26 | 50 | 30 |
| | | | | | | |
| Collector Street | | | | | | |
| Urban/Rural | 60 | 26 | 60 | 36 | 60 | 36 |
| | | | | | | |
| Arterial Street | | | | | | |
| Urban/Rural | 80 | 36 | 80 | 48 | 80 | 48 |
| | | | | | | |

**NOTES:**

**URBAN:** **All streets classified as urban are curbed streets. These streets are to be utilized on all properties located within the city regardless of size of lots and on all lots smaller than one (1) acre in size located within the unincorporated portion of the planning jurisdiction.**

**RURAL:** **Streets classified as rural may be utilized only to serve lots forty thousand (40,000) square feet or larger in size when such lots are located within the unincorporated portion of the planning jurisdiction.**

**ROW:** **Minimum Right-of-Way Width**
**PAVEMENT:** **Minimum Pavement Width**

## TABLE 2

## GENERAL DESIGN STANDARDS FOR STREETS

| | RESIDENTIAL STREET | NONRESIDENTIAL STREET |
|---|---|---|
| | | |
| **Design Speed** (MPH) | | |
| Access Lane | 25 | N/A |
| Access Street | 30 | 30 |
| Residential Collector Street | 35 | N/A |
| Arterial Street | 40 | 40 |
| | | |
| **Maximum Percentage Grade** | | |
| Access Lane | 12% | N/A |
| Access Street | 10% | 7% |
| Residential Collector Street | 7% | N/A |
| Arterial Street | 7% | 7% |
| | | |
| **Minimum Percentage Grade** | | |
| All Streets | 1% | 1% |
| | | |
| **Horizontal Curvature** | | |
| Vehicle curves are to be designed as per AASHTO standards for various design speeds and slopes | | |
| | | |
| **Maximum Super-Elevation** (Foot/Foot) | 0.08 | 0.08 |
| | | |
| **Minimum Tangent Between Reverse Curves** | | |
| Vehicle curves are to be designed as per AASHTO standards for various design speeds and slopes | | |
| | | |
| **Minimum Stopping Sight Distances** (In Feet) | | |
| Access Lane | 150 | N/A |
| Access Street | 200 | 250 |
| Collector Street | 250 | N/A |
| Arterial Street | 300 | 300 |
| | | |
| **Minimum Radius of Return at Intersections** | | |
| At Right-of-Way | 25 ft. | 30 ft. |
| At Pavement | 30 ft. | 50 ft. |
| | | |
| *** Applies where a deflection angle of fifteen (15) degrees or more in the alignment of pavement occurs.** | | |

## TABLE 2 (Continued)

## GENERAL DESIGN STANDARDS FOR STREETS

| | RESIDENTIAL STREET | NONRESIDENTIAL STREET |
|---|---|---|
| | | |
| **Minimum Sight Distance** (in Feet)* | | |
| Access Lane | 100 | N/A |
| Access Street | 150 | 200 |
| Residential Collector Street | 200 | N/A |
| Arterial Street | 250 | 250 |
| Intersection | Across Corners 75 feet back | Across Corners 75 feet back |
| | | |
| **Maximum Grade at Intersections** | | |
| Access Lane (Within 50 ft.) | 5% | N/A |
| Access Street (Within 50 ft.) | 5% | 3% |
| Residential Collector Street | 3% | N/A |
| Arterial Street (Within 100 ft.) | 3% | 3% |
| | | |
| **Pavement Crown** | | |
| The paved surface shall slope downward from the centerline of the street outward to the edge of the paved surface on each side 2/5 of an inch per foot. | | |
| | | |
| **Turnaround Standard (No Outlet Streets)** On all turnarounds longer than 150 feet, there shall be a minimum cul-de-sac paved radius of 45 feet. Alternative turnarounds shall be designed to meet the City's adopted Fire Code standards.The turnaround, including sidewalk where required, shall be within the right-of-way. The maximum length of permanent cul-de-sac streets shall be 900 feet and shall serve no more than 20 dwelling units. Temporary cul-de -sac streets may be a maximum of 1200 feet in length. **(Amended by Resolution, November 13, 2001)** | | |
| | | |
| *** The sight distance is measured from a point 4 1/2 feet above the center line of the roadway surface to a point 4 inches above the center line of the roadway surface.** | | |

c. Minimum curb or edge of pavement radius shall be determined according to the specifications for the street of higher classification in the street system hierarchy, as specified below:

**Minimum Radius of Returns at Street Intersections**

| STREET CLASSIFICATION | MINIMUM RETURN RADIUS* |
|---|---|
| | |
| RESIDENTIAL ACCESS LANE | 20 feet |
| RESIDENTIAL ACCESS STREET | 25 feet |
| RESIDENTIAL COLLECTOR | 25 feet |
| ARTERIAL STREET | 30 feet |
| HIGHER ORDER STREETS | As determined by the City Engineer |

* This is minimum. The actual spacing shall be determined by the City Engineer based upon the traffic characteristics of the higher order street

d. Whenever a proposed street intersects an existing or proposed street of higher order in the street hierarchy, the street of lower order shall be made a stop street. The street of lower order shall also be designed to provide a minimum corner sight distance as specified in item g. within this Subsection.

e. Intersections shall be designed with a flat grade wherever practical. In hilly or rolling areas, at the approach to an intersection, a leveling area shall be provided having not greater than a two (2) percent grade for a distance of sixty (60) feet, measured from the nearest right-of-way line of the intersecting public way.

f. The cross-slope on all public ways, including intersections, shall be three (3) percent or less.

g. In all cases, within an area formed by the centerlines of the intersecting or intercepting streets and/or railroads and a line joining points on such centerlines at a distance of seventy-five (75) feet, there shall be no obstruction to vision between the height of three and one-half (3 1/2) feet and a height of ten (10) feet above the average grade of each street and/or railroad at the centerline, thereof.

### 4-104.403 Acceleration and Deceleration Lanes

a. Deceleration or turning lanes may be required by the city along existing and proposed streets as determined by a traffic impact study required by Subsection 4-103.206, or where the city can justify the need.

b. Deceleration Lanes Shall Be Designed to the Following Standards:

(i) The lane width shall be the same as the required width of the roadway moving lanes.

(ii) The lane shall provide the full required lane width for its full length. It shall not be tapered.

(iii) The minimum lane length shall be as follows:

| Design Speed of Road | Minimum Deceleration Lane Length |
|---|---|
| **30 mph** | **165 feet** |
| **40 mph** | **230 feet** |
| **50 mph** | **310 feet** |

c. Acceleration lanes are only required when indicated as needed by a traffic impact study. The design shall be as per the recommendation of the City Engineer.

## 4-104.404 Marginal Access and One-Way Streets

a. Classification and Design of Marginal Access Streets

Marginal access streets are required as an alternative to stripping off lots along existing or proposed collectors or higher order streets. Marginal access streets shall be classified and designed to conform with the design standards and service restrictions of either residential access lanes or residential access streets as anticipated daily traffic may dictate.

(i) Intersection Spacing

The minimum distance between intersections of the marginal access street with residential collectors shall be three hundred (300) feet. Minimum distances with higher order streets shall be determined by the City Engineer based upon the traffic characteristics of the higher order street.

(ii) Distance Between Travelways

A minimum distance of thirty (30) feet shall be provided between the paved portion of the marginal access street and the paved portion of the higher order street. This area shall be used to provide a visual screen between the roadways by landscaping and/or use of a berm.

b. Utilization and Design of One-Way Streets

One-way streets may be permitted as loop streets or marginal access streets where there is need to separate the directional lanes to preserve natural features to preserve natural features or to avoid excessive grading for street construction on steep slopes. Pavement and curb transitions shall be designed and constructed in accordance with standards provided by the City Engineer.

The location and design of one-way streets to be determined by the City Engineer and Planning Commission. **(Added by Resolution, November 13, 2001)**

**4-104.405 Arrangement of Dead-End Streets**

a. Temporary Stub Streets

(i) Residential Access Lane and Residential Access Street Stub Streets

Residential access lanes may be permitted only within subsections of a planned unit development for which the proposed street extension in its entirety has been approved as part of an approved preliminary plan. **(Added by Resolution, November 13, 2001)**

(ii) Collector Stub Streets

Stub streets may be permitted or required by the city on collector streets provided that the future extension of the street is deemed desirable by the city and conforms to the adopted major thoroughfare plan.

(iii) Temporary Turnarounds

All stub streets longer than one hundred fifty (150') feet shall be provided with a turnaround paved to an outside radius of forty-five (45) feet. No turnaround is required if the stub street is less than one-hundred (fifty 150') in length. In the later case, a sign indicating a dead-end street shall be posted.

b. Permanent Dead-End Public Ways

(i) General Design Standards

Where a public way does not extend beyond the boundary of the subdivision and its continuation is not required by the Planning Commission for access to adjoining property, its terminus shall normally not be nearer to such boundary than one hundred fifty (150) feet. However, the Planning Commission may require the reservation of an appropriate

easement to accommodate drainage facilities, pedestrian traffic, or utilities. A cul-de-sac turnabout shall be provided at the end of a dead-end public way in accordance with the design standards of these regulations.

For greater convenience to traffic and more effective police and fire protection, permanent dead-end public ways shall, in general, be limited in length in accordance with the design standards of these regulations.

(ii) Design of Turnarounds

The type of turnaround required shall be determined by the Planning Commission based upon recommendation of the City Engineer. In general the design standards presented in Table 2 and the City's adopted Fire Code regarding alternative design turn arounds other than cul-de-sacs shall apply.

### 4-104.406 Railroads and Limited Access Highways

Railroad right-of-way and limited access highways, where so located as to affect the subdivision of adjoining lands, shall be treated as follows:

a. In residential areas, a buffer strip at least twenty-five (25) feet in depth in addition to the normally required depth of the lot may be required adjacent to the railroad right-of-way or limited access highway. This strip shall be part of the platted lots and shall be designated on the plat: "This strip is reserved for screening; the placement of structures hereon is prohibited."

b. In commercial or industrial areas, the nearest public way extending parallel or approximately parallel to the railroad shall, wherever practicable, be at a sufficient distance therefrom to ensure suitable depth for commercial or industrial usage.

c. Public ways parallel to a railroad, when intersecting a public way which crosses the railroad at grade, shall to the extent practicable, be at a distance of at least one hundred fifty (150) feet from the railroad right-of-way. Such distance shall be determined with due consideration of the minimum distance required for future separation of grades by means of appropriate approach gradients.

### 4-104.407 Bridges

Bridges of primary benefit to the subdivider, as determined by the Planning Commission, shall be constructed at the full expense of the subdivider without reimbursement from the governing body. The sharing of expenses for the construction of bridges not of primary benefit to the subdivider, as determined by the Planning Commission, shall be fixed by special agreement between the governing body and the subdivider. The cost shall be charged to the subdivider pro rata as to the percentage of his development so served.

## 4-105 Road Construction Specifications

The road construction specifications for the City of White House are contained in the City's Municipal Code. These specifications shall be the minimum standards for any subdivision within the jurisdictional area.

## 4-106 Drainage and Storm Sewers

### 4-106.1 General Requirements

All plats shall make adequate provisions for stormwater or floodwater run-off channels or basins. The stormwater drainage system shall be separate and independent from any sanitary sewer system. Each lot shall have a ten (10) foot dedicated drainage easement on each lot line. The following notation regarding the use of these easements shall be made upon all plats:

> **"Public utility and drainage easements where shown hereon are intended to indicate an easement for construction, operation and maintenance of public utilities and drainage structures; including, but not limited to, sanitary sewers, water lines, telephone signal conduits, electric conductors, drainage pipes and natural gas lines."**

### 4-106.2 Nature of Stormwater Facilities

#### 4-106.201 Stormwater Design and Construction Specifications

Basic stormwater design requirements are outlined within Appendix B, herein. All detailed stormwater design and construction specifications outlined in separate city ordinance are adopted as a part thereof. These specifications shall be the minimum standards for any subdivision within the jurisdictional area.

#### 4-106.202 Location

The subdivider may be required by the City Engineer to transport by pipe or open ditch any spring or surface water that may exist prior to or as a result of the subdivision. Such drainage facilities shall be located in the public right-of-way, wherever feasible, or in perpetual unobstructed easements of appropriate width. These facilities shall be constructed in accordance with the construction specifications contained in these regulations.

#### 4-106.203 Accessibility to Public Storm Sewers

Where a public storm sewer is accessible, the developer shall install storm sewer facilities, or if no outlets are within a reasonable distance, adequate provision shall be made for the disposal of stormwaters, subject to the specifications contained herein. Inspection of facilities shall be conducted to assure compliance. Inspection of facilities shall be conducted by the Public Works Department.

### 4-106.204 Accommodation of Upstream Drainage Areas

A culvert or other drainage facility shall in each case be large enough to accommodate potential runoff from its entire upstream drainage area, whether inside or outside the subdivision. Necessary facilities shall be sized based on the construction specifications and assuming conditions of maximum potential watershed development permitted.

### 4-106.205 Effect on Downstream Drainage Areas

The developer shall prepare and submit to the city engineer a study of the effect of each subdivision on existing downstream properties and drainage facilities outside the area of the subdivision.

Increased flow rates, volumes, and velocities of water generated by a development must be estimated and may only be released if the increased runoff is conveyed to an adequate downstream watercourse or facility without adverse impact (as determined by the City Engineer) upon the land over which the waters are conveyed or upon the watercourse or facility into which such waters are discharged.

Where it is anticipated that the additional runoff incident to a development will overload an existing downstream drainage facility, the Planning Commission may withhold approval of the subdivision until provision has been made for adequate improvement of such drainage facilities. The developer may be required to either construct adequate downstream facilities, contribute his pro-rata share toward the construction of adequate downstream facilities, or install on-site stormwater detention to mitigate the downstream impacts. The Planning Commission reserves the right to require pro-rata share contributions or downstream improvements where stormwater detention is not in the best interest of the overall drainage system and the city in general.

On site stormwater detention proposed to reduce the peak rate of discharge to the off site drainage system in lieu of downstream improvements shall not cause increased peak flows or velocities detrimental to downstream properties or facilities. When detention facilities are utilized, the peak rate of discharge after development shall not exceed the predevelopment peak rate with adequate provision made to prevent erosion due to increased velocities and adequate provision made for downstream accommodation of increased volumes of runoff.

Should it be determined by the City Engineer that downstream conditions dictate additional control of lesser storms (up to the fifty (50) year design storm), the developer shall install flow control devices (weir, etc.), as approved by the city engineer.

Detention facilities shall be platted as perpetual drainage easements and shall be maintained by the property owner or the owners' association, as applicable. The City of White House will in no way be responsible for maintenance of drainage facilities on private property. Estimated increases in discharge velocity shall be mitigated by energy dissipation devices where required to prevent erosion.

The drainage system shall be designed to honor natural drainage divides, where practical. Surface waters shall not be concentrated and discharged onto adjoining property at rates and/or velocities exceeding predevelopment conditions, unless an easement expressly authorizing such discharge has been granted by the owner of the affected land or unless the discharge is into an adequate natural watercourse or drainage system.

No required drainage structures and facilities shall be officially accepted by the city, nor shall any surety instrument ensuring the construction of such improvements be released, until "as-built" plans thereof have been prepared by a licensed professional engineer and subsequently approved by the City Engineer.

### 4-106.206 Areas of Poor Drainage

Whenever a plat is submitted for an area which is subject to flooding, the Planning Commission may approve such subdivision; provided, that the applicant fills the affected floodway fringe area of said subdivision to place public way elevations at no less than the regulatory flood elevation and first floor elevations (including basements) at no less than one (1) foot above the regulatory flood elevation. The plat of such subdivision shall provide for a floodway along the bank of any stream or watercourse of width sufficient to contain or move the water of the regulatory flood, and no fill shall be placed in the floodway; neither shall any building nor flood-restrictive structure be erected or placed therein. The boundaries of the floodway and floodway fringe area, and the regulatory flood elevation, shall be determined by the Planning Commission based upon the review specified in Subsection 2-103.2, of these regulations, and the submission of flood data in construction plans as specified in Section 5-103, of these regulations.

When sinkholes are encountered, the limits of any standing water shall be determined by the developer based upon competent engineering. The Planning Commission may prohibit construction in and around sinkholes. Any alteration of a sinkhole or the drainage pattern shall be approved by the City Engineer and Planning Commission. (See Subsection 4-102.602.)

### 4-106.207 Floodplain Areas

The Planning Commission may when it deems it necessary for the health, safety, or welfare of the present and future population of the area or necessary to the conservation of water, drainage, and sanitary facilities, prohibit the subdivision of any portion of the property which lies within the floodplain of any stream or drainage course. The regulatory floodway shall be preserved from any and all destruction or damage resulting from clearing, grading, or dumping of earth, waste material, or stumps. Any subdivision which contains flood prone land shall be subject to the special provisions set forth in Subsections 2-101.4 and 4-101.4; Section 4-104; and Subsection 4-105.2, of these regulations.

### 4-106.208 Stormwater Detention and Discharge Control

The general policy of the city is to allow release of the increased volume of water generated by a development rather than detain it if the increased runoff can be conveyed to an adequate drainageway which will not cause downstream flooding. The major factors in evaluating drainage designs will be the effect on downstream water levels and the proximity of any structures.

Any drainage system which discharges without some form of detention shall route its water along a designated public drainage easement. A drainage system can be allowed to discharge along an existing (prescriptive) but non recorded easement if all of the following are true:

a. Post-development flow is less than or equal to the pre-development flow at the same location. (See Subsection 4-107.205.)

b. In order to prevent erosion at all outlet points, the engineer will be required to design and submit for approval an outlet system that approximates the width and velocity of the flow which existed prior to development.

## 4-106.3 Dedication of Drainage Easements

### 4-106.301 General Requirements

Where a subdivision is traversed by a watercourse, drainageway, channel, or stream, there shall be provided a stormwater easement or drainage right-of-way conforming substantially to the lines of the fifty (50) year flood elevation of such watercourse and of such width and construction as will be adequate. Where open drainageways are utilized they shall be designed for the fifty (50) year frequency flood.

### 4-106.302 Drainage Easements

a. Where topography or other conditions are such as to make impracticable the inclusion of drainage facilities within a public way right-of-way, perpetual unobstructed easements at least twenty (20) feet in width for such facilities shall be provided across property outside the public way lines and with satisfactory access to public ways. Easements shall be indicated on the preliminary and final plats. Drainage easements shall be carried from the public way to a natural watercourse or to other drainage facilities.

b. When downstream drainage improvements are proposed which will require additional easements across private land outside the subdivision, appropriate drainage easements must be secured by the developer and indicated on a plat amendment for that property.

c. The applicant shall dedicate, when required by the Planning Commission, either in fee, or by drainage or conservation easement, the land on both sides of an existing watercourse for a distance to be determined by the City Engineer.

d. Along watercourses, low-lying lands within any floodway, as determined by the City Engineer pursuant to Section 2-103.2, of these regulations, whether or not included in areas for dedication, shall be preserved and retained as required by the adopted flood management ordinance.

#### 4-106.303 Ditching, Concrete Ditch Paving, and Culverts and Storm Drains

The design and construction details of drainage facilities shall be in accordance with the provisions of these regulations. The design and construction details of all such facilities shall be approved by the appropriate governmental representative.

## 4-107 Water Facilities

### 4.107.1 General Requirements

1. Necessary action shall be taken by the developer to extend a water supply system capable of providing domestic water use and fire protection.

2. Where a public water main is within reasonable access of the subdivision, as determined by the Planning Commission, the subdivider shall install adequate water facilities, including fire hydrants, subject to construction and material specifications, approval of the governing body, the Tennessee Department of Environment and Conservation and these regulations.

3. Where required for fire protection water mains shall not be less than six (6) inches in diameter or as required to provide required fire flow.

4. All water systems, whether public or private, located in a flood prone area shall be floodproofed to the regulatory flood protection elevation. All water supply facilities located below the regulatory flood protection elevation shall be designed to prevent the infiltration of floodwaters into the water supply system and discharges from the system into floodwaters.

5. All water systems, whether public or private, shall be constructed utilizing materials that comply with all state and local materials specifications.

### 4-107.2 Fire Hydrants

Fire hydrants shall be required in all subdivisions; they shall be located no more than one thousand (1000) feet apart as measured along the servicing street and be within six hundred (600) feet of any residential building and four hundred (400) feet of any commercial, or industrial building.

However, the Planning Commission may require closer spacing where physical conditions or types of structures so warrant. The center of a hose outlet of a fire hydrant shall be not less than 18in. (457mm) above final grade, or when located in a hose house, 12 in. (305 mm) above the floor. To eliminate future public way cuttings or openings, all underground utilities for fire hydrants, together with the fire hydrants themselves, and all other water supply improvements shall be installed before any final paving of a public way shown on the subdivision plat, unless otherwise approved by the Planning Commission.

## 4-108 Sewage Facilities

### 4-108.1 General Requirements

The applicant shall install sanitary sewer facilities in a manner prescribed by the regulations of the Tennessee Department of Environment and Conservation and by any other applicable standards and specifications. All plans shall be designed and approved in accordance with the rules, regulations, specifications, and standards, of any applicable governmental agency or appropriate unit thereof.

### 4-108.2 Mandatory Connection to Public Sewer System

1. When public sanitary sewers are within reasonable access of the subdivision, as determined by the Planning Commission, the subdivider shall provide sanitary sewer facilities to each lot therein and shall connect the facilities to the public system. The subdivider shall provide sewers which meet standards set forth in the regulations of the Tennessee Department of Environment and Conservation.

2. All sanitary sewer facilities located in a flood hazard area shall be floodproofed to the regulatory flood protection elevation. All sewer facilities located below the regulatory flood protection elevation shall be designed to prevent infiltration of floodwaters into the sewer system and discharges from the system into floodwaters.

3. All public sanitary sewer systems shall be constructed utilizing materials that are A.S.T.M. and/or A.W.W.A. approved.

### 4-108.3 Individual Disposal System Requirements

If public sewer facilities are not available and individual disposal systems are proposed, all pertinent soil absorption tests shall be made as directed by the county environmentalist and the results submitted to the county health department for approval.

The individual disposal system, including the size of the septic tank and size of the tile fields or other secondary treatment device, also shall be approved by the county health department. The entire individual disposal system, including all drainage fields associated therewith, shall be located on the lot with the principal structure the systems to serve.

The Planning Commission may prohibit installation of sewage disposal facilities requiring soil absorption systems where such systems will not function due to high groundwater, flooding, or unsuitable soil characteristics. The Planning Commission may require that the subdivider note on the face of the plat and any deed of conveyance that soil absorption fields are prohibited in designated areas.

### 4-108.4 Design Criteria for Sanitary Sewers

#### 4-108.401 General

These design criteria are not intended to cover extraordinary situations. Deviations can be allowed and may be required in those instances where considered justified by the Planning Commission.

#### 4-108.402 Design Factors

Sanitary sewer systems shall be designed for the ultimate tributary population. Due consideration may be given to any current zoning regulations and approved planning reports, where applicable. Sewer capacities shall be adequate to accommodate the anticipated maximum hourly quantity of sewage and industrial wastes, together with an adequate allowance for infiltration and other extraneous flow. Sewer connections to dwellings shall not be less than six (6) inches in diameter, short laterals and all other lines shall be eight (8) inches or larger in diameter, depending on anticipated flow.

## 4-109 Utility Easements

### 4-109.1 Permanent Easements

Perpetual unobstructed easements down all lot lines or additionally across lots, if deemed necessary by the Planning Commission, shall be provided for utilities (private or public). Such easements shall be at least ten (10) feet wide, except for across-lot easements which shall be at least twenty (20) feet wide. The subdivider shall take such actions as are necessary to ensure the coordination and continuation of utility easements established on adjacent properties with those proposed within his development. All easements shall be indicated on the plat.

### 4-109.2 Temporary Construction Easements

Temporary construction easements exceeding the width of permanent easements may be required as necessary until completion of any one project.

## 4-110 Underground Utility Service Lines

In all Commercial and Industrial Subdivisions, Multi-Family Residential Developments, and in Residential Subdivisions with lot sizes under (20,000) square feet where new public ways are constructed, the developer will be required to have all primary and secondary service lines for electric power, telephone service, and cable television be placed underground, and all other utilities. Service lines from the pole to the structure shall be placed underground. In all other residential subdivision with a lot size of (20,000) square feet or larger, the secondary lines shall be underground and the primary service lines located

overhead with metal poles on only one side of the roadway. All service lines from the pole to the structure shall be placed underground. This requirement does not apply to transformers, vaults, meter, control boxes or items not generally designed to be placed underground. These underground utilities shall be constructed to standards set forth by the local utility providers. The Planning Commission shall have adequate documentation from the utility provider ensuring that these lines will be located prior to any plat being signed by the secretary of the Planning Commission.

### 4.110.1 Street Lighting

It shall be the responsibility of the developer to develop and implement a street lighting plan in subdivisions where the primary electric service will be underground. The lighting plan shall include maintenance guidelines to be listed in the development homeowner's association guidelines for light fixtures in developments with private streets. The lighting plan shall be included with construction documents required for the development.

**Decorative Lighting Locations:**

The maximum distance between light standards on cul-de-sac and loop streets shall be three hundred (300) feet. The maximum distance between street lights shall be three hundred (300) feet on all minor streets and multiple family access drives, two hundred (200) feet for collector streets, and one hundred seventy-five (175) feet for arterial streets.

**Decorative Street Lights Fixtures:**

The developer shall submit their street lighting design plans on a separate sheet to the Public Services Department for review and approval. Street lighting shall be of such size and specifications as deemed appropriate by the Public Services Director, or his/her designee.

Each lighting source shall have a height of not less than fourteen (14) feet above final grade and shall have a minimum standard LED 45-watt, 6,000 lumen output. Maximum initial illumination level five (5) feet from the base of the light source shall be no greater than 3.0 foot candles.

All electric lighting shall be controlled automatically by programmed time devices, photo electric cells, or the use of technology approved by the Public Services Director. Lighting shall be on from dusk to dawn.

**Decorative Street Pole:**

The lighting post shall be all aluminum, one-piece construction, with a classic tapered and fluted base design. The base and extruded straight aluminum shaft shall be heavy wall, cast aluminum. The shaft shall be double welded to the base casting and shipped as one piece for maximum structural integrity. The shaft shall be welded inside the base casting at the top of the access door, and externally where the shaft exists the base. The ost shall have a 17" or 19" diameter base. At the top of the post, an integral tenon with a transitional donut shall be provided for luminaire mounting. The post shall have four (4) L-Type hot dip galvanized anchor bolts. A door shall be provided in the base for anchorage and wiring acces. A grounding screw shall be provided inside the base opposite

the door. The foundation and anchor bolts shall meet manufactures specifications and standard footing drawings meet adopted building standards.

All other types of decorative street lights and poles on major residential streets and non-commercial streets must be approved by Planning Commission. Non-decorative street lighting and fixture spacing shall be determined by Cumberland Electric. All electrical wiring and utilities shall comply with local utility provider requirements.

## 4-111 Public Uses

### 4-111.1 Plat to Provide for Public Uses

Whenever a tract to be subdivided includes a school, recreation use, a portion of a major public way, or other public use, as indicated on the land development plan and/or major street or road plan, or any portion thereof, such tract shall be suitably incorporated by the developer into his plat when first presented for review by the Planning Commission.

After proper determination of its necessity by the Planning Commission and the appropriate governmental representative(s) involved in the acquisition and use of such site, and after a determination has been made to acquire the site by the public agency, the site shall be suitably incorporated by the developer into the plat prior to final approval by the Planning Commission and recording of the plat.

### 4-111.2 Referral to the Governmental Agency Concerned

The Planning Commission shall refer any plat presented in accordance with Subsection 4-110.1, to the governmental agency concerned with acquisition of the land. The Planning Commission may propose alternate areas for such acquisition and shall allow the appropriate governmental agency thirty (30) days for reply.

Among the areas which the Planning Commission may propose for public acquisition, when the commission deems it appropriate and consistent with the policies and purposes set forth in these regulations, is any land within a floodway or floodway fringe determined according to the procedure outlined herein.

The acquiring agency's recommendation, if affirmative, shall include a map showing the boundaries and area of the parcel to be acquired and an estimate of the time required to complete the acquisition.

### 4-111.3 Notice to Property Owner

Upon receipt of an affirmative report, the Planning Commission shall notify the property owner and shall designate on all plats any areas proposed to be acquired by any governmental agency. Upon such designation by the Planning Commission, any reserved portion of any floodway or floodway fringe shall not be altered from its natural state by the development in any manner whatsoever, except upon written approval of the Planning Commission.

### 4-111.4 Duration of Land Reservation

The acquisition of land reserved by a governmental agency on the final plat shall be initiated within twenty-four (24) months of notification, in writing, from the owner that he intends to develop the land. Such letter of intent shall be accompanied by a plat of a proposed development and a tentative schedule of construction. Failure on the part of the governmental agency to initiate acquisition within the prescribed twenty four (24) months shall result in the removal of the "reserved" designation from the property involved and the freeing of the property for development in accordance with these regulations.

## 4-112 Preservation of Natural Features and Amenities

Existing features which would add value to residential development or to the area as a whole, such as trees, watercourses and falls, historic spots, and similar irreplaceable assets, shall be preserved in the design of the subdivision, as required by the Planning Commission. No change of grade of the land shall be affected nor shall any natural features be removed or relocated until a preliminary subdivision plat and construction plans have been approved by the Planning Commission.

## 4-113 Nonresidential Subdivisions

### 4-113.1 General

If a proposed subdivision includes land which is zoned for a commercial or industrial purpose, the layout of the subdivision with respect to such land shall make such provisions as the Planning Commission may require. A nonresidential subdivision also shall be subject to all the requirements of site plan approval set forth in any zoning ordinance. Site plan approval may proceed simultaneously at the discretion of the Planning Commission. A nonresidential subdivision shall be subject to all the requirements of these regulations, as well as such additional standards set forth by the Planning Commission, and shall conform to the proposed land development plan, major street or road plan, and any zoning ordinance.

### 4-113.2 Standards

In addition to the principles and standards in the regulations, which are appropriate to the planning of all subdivisions, the subdivider shall demonstrate to the satisfaction of the Planning Commission that the public way, parcel, and block pattern proposed is specifically adapted to the uses anticipated and takes into account other uses in the vicinity. The following principles and standards shall be observed:

1. proposed industrial parcels shall be suitable in areas and dimensions to the types of nonresidential development anticipated;

2. public way rights-of-way and pavements shall be adequate to accommodate the type and volume of traffic anticipated;

3. special requirements may be imposed by the governing body with respect to any public way, curb, gutter, and sidewalk design and construction specifications;

4. special requirements may be imposed by the governing body with respect to the installation of public utilities, including water, sewer, and stormwater drainage;

5. every effort shall be made to protect adjacent residential areas from potential nuisance from the proposed nonresidential subdivision, including the provision of extra depth in parcels backing on existing or potential residential development and provisions for permanently landscaped buffer strips, when necessary; and

6. public ways carrying nonresidential traffic, especially trucks, normally shall not be extended to the boundaries of adjacent existing or potential residential areas.