ARTICLE IV
REQUIREMENTS FOR IMPROVEMENTS, RESERVATIONS, AND DESIGN
Amended by Resolution No. 2025-09

4-101 General Requirements

4-101.1 Conformance to Applicable Rules and Regulations

In addition to the requirements established herein, all subdivision plats must 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 Planning Commission;
3. The adopted general plan and major road or streets (public way) plan;
4. The rules of the county health department and the Tennessee Department of Health and Environment;
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 Planning Commission, where applicable.

Plat approval may be withheld if a subdivision does not conform to the above rules or the provisions outlined in Section 1-104 of these regulations.

4-101.2 Self-Imposed Restrictions

If the owner imposes restrictions on any part of the land within the subdivision that exceed those required by any zoning ordinance or these regulations, such restrictions or references to them shall be recorded with the county register on a separate form, along with the final subdivision plat in the county register's office.

4-101.3 Monuments (Deleted and Replaced Section by Resolution No. 03-01, May 1, 2003

Permanent monuments made of non-degradable material shall be installed in all subdivisions. The placement of these monuments must be accurate to a Category I, Survey, as defined by the Tennessee Board of Examiners for Land Surveyors in the current Standards of Practice. A statement to this effect shall be signed and sealed by a professional land surveyor licensed to practice land surveying in Tennessee. All monuments will conform to the appropriate type of monument.

1. **Control Monuments** - A minimum of two (2) control monuments shall be placed in all major subdivisions (as defined by these regulations). At the discretion of the Planning Commission, control monuments are generally not required within minor subdivisions (as defined by these regulations) when the subdivision occurs along existing streets; however, the Planning Commission shall retain the right to require control monuments within minor subdivisions where flooding or other extraordinary conditions

are found to exist.

All control monuments should be positioned in areas least likely to be disturbed, preferably at the beginning or end of curves along the street right-of-way. They must be visible and have at least one other control monument within the subdivision. Control monuments should only be placed after all street construction is finished and curbs have been backfilled or drainage ditches cut and stabilized.

The recorded plat shall include horizontal and vertical data for each control monument. The horizontal data must be tied to a coordinate system, preferably the Tennessee Coordinate System of 1983, as defined in TCA, 66-6-101. However, local coordinates will be acceptable at the discretion of the enforcing officer when using the Tennessee Coordinate System is not practical. In either case, each control monument shall be linked by bearings, expressed to the nearest second of arc, and distances, expressed to the nearest hundredth of a foot, to at least two property corners within the subdivision and to the nearest established street right-of-way corner. The vertical datum for the subdivision shall be referenced to mean sea level, and the datum used (e.g., NGVD29, NAVD88) shall be noted and shown on the recorded plat.

The following types of monuments, any of which will be acceptable, can be used as a control monument.

a. **Concrete Monument** - Shall be no less than four (4) inches in diameter and no less than eighteen (18) inches in length, unless encountering an impenetrable material. The monument must be steel reinforced to allow detection by a magnetic locator. It shall have a metal cap with the Land Surveyor's name and license number, or company name embedded, and bear a permanent mark indicating the precise survey point.

b. **Iron Bar Monuments** must be at least five-eighths (5/8) inch in diameter and at least twenty-four (24) inches long, unless an impregnable material is encountered. Each bar shall have a permanent metal cap with a minimum diameter of two and one-half (2 1/2) inches that displays the land surveyor's name and license number, or the company name embedded in the cap (see Appendices, Drawing 14, Iron Bar Monument Detail), and must bear a permanent mark for the exact survey point.
All monuments shall be installed flush with the ground. If an impregnable material is encountered, the iron bar monument may be shortened to a minimum of twelve (12) inches. Concrete should then be poured in a three (3) inch radius around the bar to a depth of twelve (12) inches. If the soil depth is less than twelve (12) inches, a new location for the control monument must be chosen.

2. **Lot Corners** - Metal corners shall mark all external property corners, internal lot corners, and right-of-way points. These corners shall be at least 1/2 inch in diameter and 18 inches in length. All new corners shall have a cap made of noncorrosive material, and the cap shall bear the surveyor's registration number or company name.

3. **Witness Corner** - Lot corners that are inaccessible for any reason shall

have a witness corner. The witness corner should be established along one of the property lines leaving the said lot corner to be monumented. It shall be placed at a sufficient distance from the actual lot corner to prevent any misinterpretation of its location. The witness corner and its connection to the actual lot corner shall be shown and identified on the recorded plat. A witness corner shall be no less than one-half (1/2) inch in diameter, eighteen (18) inches in length, and shall have a cap made of non-corrosive material. The cap shall bear the surveyor's registration number or company name.

4-101.4 Character of the Land

Land that the Planning Commission determines to be unsuitable for subdivision or development due to flooding, poor drainage, steep slopes, rock formations, unfavorable earth conditions, topography, utility easements, or other features that could threaten the safety, health, or welfare of residents and surrounding areas shall not be subdivided or developed unless the developer devises adequate solutions that are approved by the Planning Commission, based on the recommendation of any staff assistant or other government representative involved with the Commission. Such land should be reserved for uses that do not pose these dangers.

Where protection against flood damage is needed, in the opinion of the Planning Commission, flood-damage protection methods may include, as considered suitable 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 flood-prone areas; and
2. Flood protection measures are designed not to increase flood flows, height, duration, or damages, either individually or collectively, and to avoid infringing on the regulatory floodway.
3. Installing 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 prevent flotation and lateral movement.
   b) Installation of watertight doors, bulkheads, shutters, or other similar closure devices.
   c) Reinforcement of walls to withstand water pressures;
   d) Use of paints, membranes, or mortars to prevent seepage through walls;
   e) Adding mass or weight to structures to prevent flotation;
   f) Installation of pumps to reduce water levels in structures;
   g) Construction of water supply and waste treatment systems to prevent the entry or contamination of floodwaters;
   h) Installation of pumps or similar facilities for subsurface drainage systems to reduce external foundation wall and basement flood pressures;
   i) Building design and construction to prevent rupture or collapse caused by water pressure from floating debris;
   j) Installation of valves or controls on sanitary and storm drains that allow the

drains to be closed to prevent sewage and stormwater backup into buildings or structures.

k) The location and installation of all electrical equipment, circuits, and appliances to ensure they are protected from flood inundation as required by regulations;

l) Location of storage facilities for chemicals, explosives, buoyant materials, flammable liquids, or other toxic substances that could pose a hazard to public health, safety, and welfare at or above the regulatory flood protection elevation. This also includes the design of such facilities to prevent flotation of storage containers or damage to containers that could lead to the release of toxic materials.

The Planning Commission shall determine the acceptability of any flood protection methods devised by the subdivider or their agent, guided by the policies outlined in Section 1-104 and Subsection 2-101.4 of these regulations.
All such flood protection measures must be designed in a way that they do not increase flood flows, heights, duration, or damages, either individually or collectively, and do not infringe upon the regulatory floodway.

4-101.5 Subdivision Name

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

4-102 Lot Requirements

4-102.1 Lot Arrangement

4-102.101 General

The lot arrangement shall be designed to avoid foreseeable difficulties related to topography, flood hazards, or other conditions that could impede obtaining building permits for all lots. It must also ensure compliance with applicable zoning laws and regulations from the state and county health departments, and provide driveway access to buildings on these lots from an approved public way.

4-102.102 Solar Access

A reasonably feasible lot arrangement should ensure that building sites maximize the use of energy conservation measures, such as providing for solar access.

4-102.103 Lots Subject to Flood

Where a significant portion of any flood-prone area must be improved to create 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). This extension should extend at least twenty-five (25) feet beyond the limits of the intended structures and include sufficient area for subsurface sewage disposal if the lot is not connected to a public sanitary sewer system. Any fill shall be protected against erosion through riprap, vegetative cover, or other methods approved by the Planning Commission.

In nonresidential building sites outside a floodway but prone 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 outlined in Subsection 2-101.4 of these regulations.

4-102.104 Lots Located on Steep Slopes

Because of the health and safety risks posed by development on lands with slopes over fifteen (15) percent, the following regulations will apply.

a) **Site Development Plan Required** -- No building permit shall be issued for any building or lot with slopes of fifteen (15) percent or higher until a site plan meeting the following requirements has been approved by the Planning Commission. Said site plan shall show:
   i. The precise size, shape, and location of the lot,
   ii. The proposed placement of all buildings, driveways, drainageways, and utilities,
   iii. Proposed contours at vertical intervals of no more than five feet.
   iv. The amount of natural tree cover and vegetation,
   v. The location of any onsite soil absorption sewage disposal systems,
   vi. The type and location of erosion control methods.
   vii. The stamp of the surveyor or engineer who prepared the plan.
   viii. Certification of the stability of structures and slopes, and compliance with sound construction methods in areas with steep slopes and landslide issues, by a registered civil or geotechnical engineer.

b) **Site Development Standards** -- The following standards shall serve as a guide for assessing the suitability of proposed construction for the specific site. The engineer's certification required in Subsection 4-102.104, a, (viii), above, shall address these standards.
   i. Natural vegetation shall be preserved to the greatest 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 dwelling unit per two acres of land.
   iv. Operations that increase loads, reduce slope support, and cause slope instability shall be prohibited to the greatest extent feasible, while enabling reasonable development of the site. This includes activities such as filling,

installing irrigation systems, constructing accessory buildings, and implementing onsite soil absorption sewage disposal systems.

v. Where sanitary sewers are not available, any onsite sewage disposal system shall be shown on the site plan and positioned to avoid slide-prone areas. The system shall be approved by the county health department before the Planning Commission's review, considering these requirements.

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

vii. No construction that would cut the top of the slope shall be permitted. This also applies to subdivision roads built in accordance with these regulations.

4-102.2 Lot Dimensions

Lot dimensions must meet the minimum standards of any applicable zoning ordinance. When lots are more than twice the minimum size required by a zoning ordinance, the Planning Commission may require these lots to be arranged to allow further subdivision and the creation of future public ways where needed to serve such potential lots, all in accordance with zoning regulations and these rules. Generally, side lot lines should be at right angles to street lines or radiate from curved street lines.
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.

The dimensions of corner lots must be sufficient to allow for building construction while complying with the minimum front yard setback requirements from both public rights-of-way.

The depth and width of properties reserved or designated for business, commercial, or industrial purposes shall be sufficient to accommodate the necessary off-street parking and loading facilities for the intended use and development, as specified in any zoning ordinance.

4-102.3 Building Setback Lines

=For electric transmission lines without clearly defined easement widths, 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

4-102.4 Double Frontage Lots and Access to Lots

4-102.401 Double Frontage Lots

Double frontage and reversed frontage lots shall be avoided, except when necessary to separate residential development from traffic arterials or to address specific topographical and orientation challenges.

4-102.402 Access from Arterial or Collector Public Ways

The Planning Commission may require that lots not have access solely from arterial or collector public roads. When driveway access from such public roads is necessary for multiple adjoining lots, the Commission may specify that these lots be served by a combined access drive to reduce potential traffic hazards. Driveways should be designed and arranged to prevent vehicles from backing onto arterial or collector public roads.

4-102.5 Soil Preservation, Grading, Erosion Control, and Seeding

4-102.501 Soil Preservation and Final Grading

No certificate of occupancy shall be issued until final grading is completed according to the approved construction plan. The lot must be covered with soil of at least six (6) inches deep, free of particles larger than two (2) inches across, over the entire area, except where covered by buildings, included in streets, or in areas where the grade has not been altered or the natural vegetation has been seriously damaged.
Topsoil shall not be removed from residential lots or used as spoil. It shall be redistributed to provide at least six (6) inches of cover on the lots and at least four (4) inches of cover between any sidewalks and curbs, and it must be stabilized by seeding or planting.

4-102.502 Lot Drainage

Lots shall be arranged to ensure proper drainage away from all buildings, and individual lot drainage shall be coordinated with the overall storm drainage system for the area, including subsurface drainage. Drainage shall be designed to prevent the concentration of stormwater runoff from each lot onto neighboring lots.

The Planning Commission reserves the right to establish minimum elevations for all floors, patios, and building equipment. The prerogative to establish elevation exists alongside any ordinances that specify floodplain elevation requirements. The purpose of the preceding paragraph is to provide a summary of review powers over any calculated or historical evidence of stormwater presence in overland or channel conditions.

The subdivision developer will ensure that all artesian ground waters, whether permanent or temporary, are intercepted and directed to primary drainage conduits along swaled ditches or beneath ground pipes on property line easements. No matter where property lines are, the Planning Commission will allow interception at the point where artesian

water surfaces. The purpose of this is to prevent flooding caused by overland flow. The developer must carry out this work once artesian water is observed and continue for one (1) year after all roads and utilities are accepted.

Any sinkhole or natural channel used at any time to move groundwater underground will be protected by a structure approved by the Planning Commission. The alternative allowed is the construction of a different stormwater relief method approved by the Planning Commission. In any case, the location and elevation of future construction will be designated to accommodate the worst possible conditions.

4-102.503 Erosion and Sediment Control

There shall be minimal changes to the rates of natural erosion and sedimentation resulting from the development process. An erosion and sediment control plan shall be submitted with the construction plans in accordance with Section 5-103 of these regulations. Such plans shall include the following principles:

a) Clearing and grading shall be incorporated into layout design.
b) Clearing shall be minimized, and existing vegetation shall be preserved as much as possible.
c) Grading shall be strictly limited to those areas involved in current construction activities.
d) Disturbed areas shall be protected and stabilized as soon as possible.
e) Structural and vegetative measures to manage the speed and amount of runoff shall be required.
f) Sediment basins and traps shall be required as needed.
g) Adequate maintenance of all planting and structure measures shall be ensured.

4-102.6 Debris and Waste

No trees, timber, debris, junk, rubbish, or other waste materials of any kind shall be buried on any land or left or deposited on any lot or public way at the time of issuing a certificate of occupancy for the lot. Removal of such waste shall be required before issuing any certificate of occupancy. Additionally, no waste shall be left or deposited in any part of the subdivision when the performance bond expires or the dedication of public improvements occurs, whichever happens first.

4-102.7 Fencing

Each subdivider or developer must provide and install all fences where the Planning Commission finds a hazardous condition. These fences must be built according to standards set by the Planning Commission, as appropriate, and noted on the final plat with regards to height and required materials. No certificate of occupancy shall be issued for any affected lot until these fence improvements are completed.

4-102.8 Water Bodies and Watercourses

If a tract being subdivided includes a water body or part of one, lot lines shall be drawn to allocate full ownership of the water body among the fees of neighboring lots. The Planning Commission may approve an alternative plan in which ownership and responsibility for the safe maintenance of the water body are arranged so that it does not become a governmental responsibility.

No more than ten (10) percent of the minimum lot area required under any zoning ordinance may consist of land that is underwater. When a watercourse separates a buildable area of a lot from the public way that provides access, provisions must be made for the installation of a culvert or other structure approved by the Planning Commission. Additionally, 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 authority.

4-103 Public Ways

4-103.1 General Requirements

4-103.101 Frontage on Improved Public Ways

No subdivision shall be approved unless the area to be subdivided meets the access requirements specified in Subsection 1-112.107 of these regulations. If any new street construction or improvements are involved, they must be approved and, where public dedication is required as outlined in Articles II and III of these regulations, such public ways must be suitably improved to the standards set forth in this article or secured by a performance bond as required under these regulations, with the roadway and right-of-way widths specified by this article or the major street or road plan.

4-103.102 Grading and Improvement Plan

Public ways shall be graded and improved to meet the standards required by this section and must be approved as to design and specifications by the appropriate government representative in accordance with the specifications specified herein. No surface shall be applied to the base of any proposed public way before the final plat of the subdivision or final approval of any section of the subdivision in question has been properly inspected.

4-103.103 Improvements in Floodable Areas

The finished elevation of proposed public ways subject to flooding shall be no more than one foot below the regulatory flood protection elevation. The Planning Commission may require profiles and elevations of public ways to verify compliance with this requirement. All drainage structures must be capable of discharging flood flows without increasing flood height. When fill is used to raise the finished elevation of any public way to the required level, it shall not encroach upon a floodway, and the fill must be protected against erosion by rip-rap, vegetative cover, or other methods approved by the Planning Commission.

4-103.104 Private Streets

Where the ownership, control, and maintenance of any street are intended to remain in private ownership, such streets shall be constructed in accordance with the design and

construction standards for public ways as specified herein. A permanent access easement over these streets shall be granted to each parcel or lot that uses access from it. All private improvements must be maintained by the developer/owner or by a legally established homeowners' association or 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 recorded along with the final plat.

4-103.105 Topography and Arrangement

a) All public ways shall be arranged to maximize the number of building sites at or above the grades of the public ways. The 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. Specific design standards are contained in Subsection 4-103.2 of these regulations.
b) The use of public ways running east-west and lots on a north-south axis is encouraged for energy conservation in developments.
c) 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.
d) All public ways shall be properly connected to specific traffic generators, such as industries, business districts, schools, churches, and shopping areas or centers; to population densities; and to the pattern of existing and planned land use.
e) Minor public ways shall be designed to follow the topography as much as possible; to discourage use by through traffic; to allow for efficient drainage and utility systems; and to include the minimum necessary ways to provide convenient and safe access to property.
f) The use of curvilinear streets, cul-de-sacs, or "U"-shaped streets shall be encouraged when such designs create a more desirable layout.
g) Proposed public ways shall be extended to the boundary lines of the tract to be subdivided, unless restricted by topography or other physical conditions, or unless, in the opinion of the Planning Commission, such extension is unnecessary or undesirable for coordinating the subdivision design with the existing layout or for the most advantageous future development of adjacent tracts.
h) In business and industrial developments, public roads and other access routes should be designed in conjunction with the arrangement of buildings, location of rail facilities, and the provision of alleys, truck loading and maneuvering zones, as well as walkways and parking areas, to reduce conflicts between different types of traffic, including pedestrians.

4-103.106 Blocks

a) Blocks shall have sufficient width to accommodate two (2) tiers of lots of appropriate depth. Exceptions to this requirement 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 proper consideration of:
    i. Provision of suitable building sites that meet the specific needs of the

intended use.

ii. Any zoning requirements regarding lot sizes and dimensions.

iii. Needs for easy 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 sixteen hundred (1,600) feet or be less than two hundred (200) feet, except as the Planning Commission considers necessary to ensure efficient land use or to achieve desired features of the public way pattern. Whenever feasible, blocks along arterial or collector routes shall not be shorter than one thousand (1,000) feet.

d) Blocks designed for industrial or commercial uses shall be of such length and width as the Planning Commission deems appropriate.

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

f) A pedestrian walkway at least ten (10) feet wide may be required by the Planning Commission through the approximate center of any block longer than eight hundred (800) feet, where it is considered necessary to provide circulation or access to a school, playground, shopping center, transportation facility, or other community facility.

4-103.107 Access to Arterials and Collectors

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

a) the subdivision of lots so that they back on the arterial or collector route and front on a parallel minor route;

b) a series of cul-de-sacs, "U" shaped public ways, or short loops entered from and generally oriented 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 public service way, separated from the arterial or collector route by a planting or grass strip, with access at suitable points.

The number of residential or local public streets connecting to arterial or collector roads should be minimized.

4-103.108 Reserve Strips

Creating reserve strips next to a proposed public way that block access from nearby properties to the public way generally shall not be allowed. However, in extraordinary circumstances, the Planning Commission may permit the creation of a reserve strip to facilitate a more suitable pattern of lots or public ways. When such is created, the Planning Commission must approve any subsequent depositions of the same. A notation to this effect shall be entered on the final plat or approved as an auxiliary instrument attached thereto.

4-103.109 Arrangement of Continuing and Dead-End Public Ways

a. **Arrangement of Continuing Public Ways** -- The arrangement of public ways must ensure the connection of major routes between neighboring properties when needed for smooth traffic flow, effective fire protection, and efficient utility services, following the major street or road plan. If the adjacent property is undeveloped and the public way temporarily ends in a dead-end, the right-of-way shall extend to the property line. A temporary cul-de-sac, T-, or L-shaped turnabout shall be provided on all temporary dead-end public ways as required by the turnabout standards, with a note on the subdivision plat that land outside the normal public way right-of-way will revert to the abutting property owners once the public way is continued. The area of the temporary cul-de-sac outside the normal lane widths may be constructed without the asphalt concrete wearing surface if the roadway will be extended and the cul-de-sac abandoned within three (3) years of final plat approval, with a bond posted by the developer for the construction of a permanent cul-de-sac. If the roadway is not extended within the three (3) year time frame, the cul- de-sac must be paved according to Robertson County standards or the bond will be utilized to perform this work. (Amended April, 1994,)

b. **Dead-End Public Ways** -- When 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 closer to such boundary than fifty (50) 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 turnaround shall be provided at the end of a dead-end public way in accordance with the design standards of these regulations. To improve traffic flow and enhance police and fire protection, permanent dead-end public ways shall generally be limited in length according to the design standards of these regulations.

4-103.2 Design Standards

4-103.201 Purpose

To establish public ways with appropriate location, width, and improvements to handle expected traffic and ensure adequate access for police, fire-fighting, sanitation, and road maintenance equipment, and to coordinate public ways for a convenient and safe system while minimizing hardships to adjacent properties, the public way design standards outlined in this section are mandated. (Public way classification shall be according to the land development plan or major street or road plan; if not specified, the Planning Commission shall classify public ways based on the definitions in Article VI of these regulations.)

4-103.202 General Design

The general design of all public ways shall adhere to the standards outlined in the tables

titled "General Design Standards for Public Ways," which are provided hereafter.

GENERAL DESIGN STANDARDS FOR PUBLIC WAYS

IMPROVEMENT	RESIDENTIAL PUBLIC WAY	NONRESIDENTIAL PUBLIC WAY (INDUSTRIAL, COMMERCIAL: OTHER)
Minimum Right-of-Way Width (in Feet)		
Minor	50	60
Collector	60	60 or (See Below)*
Arterial	80-150*	

Minimum Width of Roadway or Paved Area (in Feet) not Including Parking Requirements				
	Ditch Section	Curb & Gutter	Ditch Section	Curb & Gutter
Minor	22	22	30	36
Collector	24	**28**	30	36
Arterial	(See Below)*		See Below)*	

Maximum Percentage Grade	
Minor	10
Collector	7
Arterial	6

	6
	6
	5

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 2/5ths of an inch per foot.

Minimum Center Line Radius of Curve (in Feet)**		
Minor	100	200
Collector	300	300
Arterial	500	500

* As determined by appropriate governmental representative.

** Applies where a deflection angle of 15 degrees or more in the alignment of pavement occurs.

IMPROVEMENT	PUBLIC WAY	NONRESIDENTIAL PUBLIC WAY (INDUSTRIAL, COMMERCIAL: OTHER)
Minimum Length of Vertical Curves		
Minor	100 feet, but not less than 20 feet for each algebraic difference in grade.	
Collector		
Arterial	100 feet, but not less than 20 feet for each algebraic difference in grade.	
	300 feet, but not less than 50 feet for each algebraic difference in grade.	
Minimum Length of Tangents Between Reverse Curves (in Feet)		
Minor	100	200
Collector	100	200
Arterial	300	400
Minimum Sight Distance (in Feet)*		
Minor	200	**250**
Collector	240	**250**
Arterial	300	400
Intersection	Across Corners	Across Corners
75 feet back		75 feet back
Minimum Turnaround on Cul-de-sacs on Minor Public Ways (in Feet)		
Right-of-way Diameter	100	160
Pavement Diameter	80	140
Length of Cul-de-sac		
Permanent Temporary	1,000 Feet 1,000 Feet	
Minimum Radius (in Feet) of Return at Intersections		
At Right-of-way	**35**	40
At Pavement	30	50

* 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.

4-103.203 **Intersections**

a) Public ways shall be laid out to intersect as close to right angles as possible. A proposed intersection of two (2) new public ways at an angle of less than seventy-five (75) degrees shall not be allowed. An oblique public way should be curved approaching an intersection and should be roughly at right angles for at least one hundred (100) feet from the intersection. No more than two (2) public ways shall intersect at any one point unless explicitly approved by the Planning Commission.

b) Proposed new intersections along one side of an existing public way should align, when practical, with any existing intersections on the opposite side of the same public way. Jogs within public ways with center line offsets less than one hundred fifty (150) feet are not allowed, except where the intersected public ways have separated dual drives without median breaks at either intersection. When public ways intersect arterial or collector routes, their alignment must be continuous. Intersections of arterial or collector public ways must be at least eight hundred (800) feet apart.

c) The minimum curb radius at the intersection of two minor public ways shall be thirty-five (35) feet, and the minimum curb radius at an intersection involving a collector public way shall be forty (40) feet. Alley intersections and abrupt changes in alignment within a block shall have the corners cut off in accordance with standard engineering practice to permit safe vehicular movement.

d) Where a public roadway intersection involves earth banks or existing vegetation within any lot corner that could create a traffic hazard by restricting visibility, the subdivider shall remove such ground or vegetation (including trees) as part of the grading of the public right-of-way to the extent necessary to ensure adequate sight distance.

e) Intersections shall be designed with a flat grade whenever practical. In hilly or rolling areas, at the approach to an intersection, a leveling area shall be provided with no greater than a two (2) percent grade for a distance of sixty feet (60) measured from the nearest right-of-way line of the intersecting public way.

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

4-103.204 **Excess Right-of-Way**

A slope easement beyond the right-of-way specified in these regulations may be required when, due to topography, extra width is needed to ensure proper earth slopes. Such slopes shall not be less than three to one (3:1). Where solid rock is encouraged, slopes shall be one-half to one (1/2:1).

4-103.205 Railroads and Limited Access Highways

Railroad rights-of-way and limited access highways, when situated in a way that impacts the subdivision of neighboring lands, shall be handled as follows:

a) In residential areas, a buffer strip at least twenty-five (25) feet wide, in addition to the usual lot requirements, may be required next to the railroad right-of-way or

limited access highway. This strip shall be part of the platted lots and must be marked 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 road running parallel or approximately parallel to the railroad should, whenever practical, be at a sufficient distance to provide appropriate clearance for commercial or industrial uses.

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

4-103.206 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 Planning Commission. The sharing of expenses for the construction of bridges not of primary benefit to the subdivider, as determined by the Planning Commission, shall be established by a special agreement between the Planning Commission and the subdivider. The cost shall be allocated to the subdivider proportionally based on the percentage of his development that is served.

4-103.3 Right-of-Way Width Dedication on Existing Public Ways

When a subdivision borders an existing narrow public way or when the major street or road plan or any zoning setback provisions suggest plans for realignment or widening of a public way that would require using some of the land in the subdivision, the subdivider must dedicate, at his expense, areas for widening or realigning such public way as specified below.

1. The entire right-of-way shall be provided if any part of the subdivision is on both sides of the existing public way; or
2. When the subdivision is situated on only one side of an existing public way, half (1/2) of the required right-of-way, measured from the center line of the existing pavement, shall be provided.

4-103.4 Public Way Surfacing and Improvements

After underground utilities have been installed, the subdivider shall construct curbs or curbs with gutters where required, and shall surface or cause public ways to be surfaced to the widths prescribed in these regulations. No public way shall be surfaced until the preliminary approval of the subdivision plat has been obtained. Surfacing shall be of such character as is suitable for the expected traffic. Types and methods of paving shall comply with the specifications of the Planning Commission, but under no circumstances should it be less than the construction standards outlined in Appendix B of these regulations. Adequate provisions shall be made for culverts, other drains, and bridges as needed.

All public ways, including pavements, shoulders, drainage improvements, structures, curb turnarounds, and sidewalks, shall meet all construction standards and specifications adopted by the Planning Commission and must be included in the construction plans that the developer is required to submit for plat approval.

4-104 Road Construction Specifications

The road construction specifications are included in these regulations as Appendix B and are adopted as part of them. These specifications set the minimum standards for any subdivision within the jurisdictional area.

4-105 Drainage and Storm Sewers

4-105.1 General Requirements

The Planning Commission shall not approve any subdivision plat that does not provide adequate stormwater or floodwater runoff channels or basins. The stormwater drainage system must be separate and independent from any sanitary sewer system.

4-105.2 Nature of Stormwater Facilities

4-105.201 Location

The subdivider may be required by the Planning Commission to direct any spring or surface water existing before or resulting from the subdivision through pipes or open ditches. These drainage facilities should be located within the public right-of-way whenever possible, or in perpetual, unobstructed easements of suitable width. They must be constructed according to the specifications outlined in these regulations.

4-105.202 Accessibility to Public Storm Sewers

a) 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 of the appropriate governmental representative; inspection of facilities shall be conducted to assure compliance. The enforcing officer shall conduct inspection of facilities.
b) If a future connection to a public storm sewer will be provided in the future, as determined by the Planning Commission, the subdivider must plan for stormwater disposal through a public system once the plat receives final approval. Provisions for such a connection shall be included in the performance bond required for the final subdivision plat.

4-105.203 Accommodation of Upstream Drainage Areas

A culvert or other drainage facility must be large enough to handle potential runoff from its entire upstream drainage area, whether inside or outside the subdivision. Necessary facilities should be sized according to construction specifications and designed for

maximum possible watershed development allowed by any zoning ordinance.

4-105.204 Effect on Downstream Drainage Areas

The Planning Commission shall also review the impact of each subdivision on existing downstream drainage facilities outside the subdivision area. If it is expected that the increased runoff from the development will overload an existing downstream drainage system, the Planning Commission may deny approval until adequate improvements are made to such drainage facilities, in an amount the Commission determines. No subdivision shall be approved unless proper drainage is guaranteed to a suitable drainage watercourse or facility.

4-105.205 Areas of Poor Drainage

Whenever a plat is submitted for an area prone to flooding, the Planning Commission may approve it; provided that the applicant fills the affected floodway fringe area of the subdivision to ensure public way elevations do not exceed twelve. (12) inches below the regulatory flood elevation and the 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 with a sufficient width to contain or convey the water of the regulatory flood, and no fill shall be placed in the floodway; nor shall any building or flood-restrictive structure be erected or placed therein. The boundaries of the floodway, floodway fringe area, and the regulatory flood elevation shall be determined by the Planning Commission based on 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.

4-105.206 Floodplain Areas

The Planning Commission may, when it considers it necessary for the health, safety, or welfare of the current and future population of the area, or for the conservation of water, drainage, and sanitary facilities, prohibit the subdivision of any part of the property located within the floodplain of any stream or drainage course. The regulatory floodway shall be protected from any damage or destruction caused by clearing, grading, or dumping of earth, waste material, or stumps. Any subdivision that includes flood-prone land must adhere to the special provisions outlined in Subsections 2-101.4; 4-101.4; Section 4-104; and Subsection 4-105.2, of these regulations.

4-105.3 Dedication of Drainage Easements

4-105.301 General Requirements

Where a subdivision is crossed by a watercourse, drainageway, channel, or stream, there shall be a stormwater easement or drainage right-of-way that conforms substantially to the lines of such watercourse, with width and construction adequate to serve its purpose. When open drainageways are used, they shall be designed for the twenty-five (25) year

flood frequency.

4-105.302 Drainage Easements

a) When topography or other conditions make it impractical to include drainage facilities within a public way right-of-way, perpetual unobstructed easements at least ten (10) feet wide must be provided across property outside the public way lines, with satisfactory access to public ways. Easements should be shown on both the preliminary and final plats. Drainage easements shall extend from the public way to a natural watercourse or other drainage facilities.

b) When constructing a new drainage system that will carry water across private land outside the subdivision, the appropriate drainage rights must be obtained and shown on the plat.

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

d) Along watercourses, low-lying lands within any floodway, as determined by the Planning Commission pursuant to Section 2-103 of these regulations, whether or not included in areas for dedication, shall be preserved and maintained in their natural state as drainage ways.

4-105.303 Ditching, Concrete Ditch Paving, Curbs, and Culverts and Storm Drains

(Amended by Resolution No. 2000-02, October 5, 2000).

The design and construction details of drainage facilities must comply with these regulations. Approval from the appropriate government representative is required for all such facilities.

Residential subdivisions may choose to install curbs and storm drainage. All subdivisions with curbed streets must also install catch basins and concrete pipe storm sewers. These facilities must be designed in accordance with the provisions of Appendix B of these regulations and approved by the county's consulting engineer.

4-106 Water Facilities

4-106.1 General Requirements

1. The developer shall take necessary action to extend a water supply system capable of supporting domestic water use and fire protection.
2. When a public water main is reasonably accessible to the subdivision, as determined by the Planning Commission, the subdivider shall install adequate water facilities, including fire hydrants, in accordance with construction and material specifications and subject to approval by the Planning Commission, the Tennessee Department of Health and Environment, and these regulations.
3. Where required for fire protection, water mains shall be at least six (6) inches in diameter; where water mains are not intended for fire protection, the Planning

Commission may approve smaller lines as needed to meet potable water demand.

4. All water systems, whether public or private, located in flood-prone areas must be floodproofed to the regulatory flood protection elevation. All water supply facilities located below this elevation shall be designed to prevent floodwaters from entering the system and to stop discharges from the system into floodwaters.
5. Valves shall be installed at all intersections with other water mains and at the ends of water mains that will be extended in the future. Valves shall be spaced along the water main at maximum intervals of 2,000 feet.

4-106.2 Fire Hydrants

Fire hydrants shall be required in all subdivisions; they shall be located no more than one thousand (1,000) feet apart and within five hundred (500) feet of any residential, commercial, or industrial lot. However, the Planning Commission may require closer spacing where physical conditions or types of structures so warrant. To eliminate future public way butting 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.

4-107 Sewage Facilities

4-107.1 General Requirements

The applicant must install sanitary sewer facilities according to the regulations of the Tennessee Department of Health and Environment and any other applicable standards and specifications. All plans must be designed and approved in accordance with the rules, regulations, specifications, and standards of any relevant government agency or appropriate unit.

4-107.2 Mandatory Connection to Public Sewer System

1. When public sanitary sewers are reasonably accessible to the subdivision, as determined by the Planning Commission, the subdivider shall install sanitary sewer facilities on each lot and connect them to the public system. The subdivider shall ensure the sewers meet the standards set forth in the regulations of the Tennessee Department of Health and Environment.
2. All sanitary sewer facilities in a flood hazard area shall be floodproofed to the regulatory flood protection elevation. All sewer facilities below that elevation must be designed to prevent floodwaters from infiltrating the system and discharges from flowing into floodwaters.

4-107.3 Individual Disposal System Requirements (Amended by Resolution, January 6, 2000)

If public sewer facilities are unavailable and individual disposal systems are proposed, lot sizes shall not be smaller than the minimums specified in Subsection 4-102.2 of these

regulations. All relevant soil absorption tests must be conducted 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 the size of the tile fields or other secondary treatment device, shall also be approved by the Robertson County Environmentalist.

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 or constitute a public nuisance. To this effect, any alternative subsurface disposal system to be placed on any individually platted lot, as certified by the Staff of the Tennessee Department of Environment and Conservation shall be individually specified as per the affected lot, and a recommendation as pertains to the suitability and acceptability of the subject lot being serviced by such alternative system, in relation to adjoining lots and properties shall be made by the planning commission to the approval or certifying state agency. 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.

4-107.4 Design Criteria for Sanitary Sewers

Sanitary sewer systems shall be designed based on the ultimate tributary population, in accordance with appropriate plans and zoning regulations. The minimum size of a public sewer line must be eight (8) inches in diameter, with individual lot service lines at least four (4) inches. Sanitary sewers should be located within a public street right-of-way, unless topography requires otherwise. Public utility easements must be provided across private property for access to lines and manholes, with such easements being wide enough for service purposes, but never less than twenty (20) feet.

4-107.401 General

These design criteria are not meant to cover extraordinary situations. Deviations can be permitted and may be necessary in cases where the Planning Commission considers them justified.

4-107.402 Design Factors

Sanitary sewer systems shall be designed for the ultimate tributary population. Due consideration may be given to applicable current zoning regulations and approved planning reports. Sewer capacities shall be sufficient to handle the maximum hourly flow of sewage and industrial wastes, along with an adequate margin for infiltration and other extraneous flow. The unit design flows provided hereinafter should be appropriate for each specific type of development. Sewers shall be designed for the total tributary area using the following criteria.

SEWER DESIGN FLOWS

Building Type

One and Two Family Dwellings	0.02 cubic feet per second (c.f.s. per acre)
Apartments	0.02 c.f.s. per acre
One and Two Story Three Through Six Story	0.03 c.f.s. per acre
Commercial	
Small Stores, Offices and Miscellaneous Business	0.02 c.f.s. per acre
Shopping Centers	0.02 c.f.s. per acre
Industrial	As Initially Determined by Appropriate Governmental Representative

These design factors shall apply to watersheds of three hundred (300) acres or less. Design factors for watersheds larger than three hundred (300) acres and smaller than one thousand (1,000) acres shall be calculated based on a linear decrease from the design factor for an area of three hundred (300) acres to a factor of 0.01 c.f.s. per acre for an area of one thousand (1,000) acres, unless otherwise directed by an appropriate government representative. Design factors for watersheds larger than one thousand (1,000) acres shall be 0.01 c.f.s. per acre unless otherwise directed. All sanitary sewer materials shall be A.S.T.M. and/or A.W.W.A. approved.

4-108 Pedestrian Ways

4-108.1 Sidewalks and Bicycle Paths

Sidewalks and bicycle paths, where required by the Planning Commission, shall be included within the dedicated no pavement right-of-way of all public ways as shown in the following table and shall be improved as specified in Subsection 4-103.4 of these regulations. 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.

4-108.2 Pedestrian Accesses

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

SIDEWALK DESIGN

Class of Street	**Sidewalk Width**	
Nonresidential		**Public Way (Industrial,**
Residential Commercial; Public Way		**Other)**
Minor Public Way	**4feet wide 5**	**6 feet wide**
Collector Public Way	**feet wide**	**6 feet wide**
Arterial Public Way	**5 feet wide**	**6 feet wide**

4-109 Utility Easements

A. Easements along rear lot lines or across lots, if deemed necessary by the Planning Commission, shall be provided for utilities (private or public). Such easements shall be at least twenty (20) feet wide. The subdivider shall take appropriate actions to ensure the coordination and continuity of utility easements established on adjacent properties with those proposed within his development.

B. When topographical or other conditions make it impractical to include utilities within rear lot lines, perpetual unobstructed easements at least twenty (20) feet wide shall be provided alongside lot lines with adequate access to public roads or rear lot lines. Easements shall be shown on the plat.

C. Temporary construction easements that exceed the width of permanent easements may be needed as necessary until the project is completed.

4-110 Public Uses

4-110.1 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 shown on the land development plan and/or major street or road plan, or any part of such, the developer shall appropriately incorporate it into the plat when first submitted for review by the Planning Commission. After the Planning Commission and the relevant government representatives involved in the acquisition and use of the site have properly determined its necessity, and a decision has been made for the public agency to acquire the site, the developer shall incorporate the site into the plat before the final approval by the Planning Commission and the recording of the plat.

4-110.2 Referral to the Governmental Agency Concerned

The Planning Commission shall submit any plat received under Subsection 4-110.1 to the relevant government agency responsible for land acquisition. The Planning Commission may suggest alternative areas for acquisition and must allow the designated government agency thirty (30) days to respond.

Among the areas that the Planning Commission may propose for public acquisition, when it considers it appropriate and consistent with the policies and purposes outlined in these regulations, is any land within a floodway or floodway fringe as determined by the procedure outlined herein.

If the acquiring agency's recommendation is affirmative, it shall include a map displaying the boundaries and area of the parcel to be acquired, along with an estimate of the time needed to complete the acquisition.

4-110.3 Notice to Property Owner

Upon receiving a positive report, the Planning Commission shall notify the property owner and shall mark on all plats any areas proposed for acquisition by any government agency. Once marked by the Planning Commission, any reserved part of a floodway or floodway fringe shall not be altered from its natural state by development in any way, unless approved in writing by the Planning Commission.

4-110.4 Duration of Land Reservation

The acquisition of land reserved by a governmental agency on the final plat must be started within twenty-four (24) months of receiving written notification from the owner that they intend to develop the land. This letter of intent should include a proposed development plat and a tentative construction schedule. If the governmental agency fails to initiate acquisition within the specified twenty-four (24) months, the reserved designation will be removed from the property involved and the freeing of the property for development in accordance with these regulations.

4-111 Preservation of Natural Features and Amenities

Existing features that add value to residential development or the area, such as trees, watercourses, falls, historic sites, and similar irreplaceable assets, shall be preserved in the subdivision's design, as required by the Planning Commission. No grading of the land shall be carried out, nor shall any natural features be removed or relocated, until a preliminary subdivision plat has been approved by the Planning Commission.

4-112 Nonresidential Subdivisions

4-112.1 General

If a proposed subdivision includes land that is zoned for commercial or industrial use, the subdivision's layout concerning such land shall include provisions as required by the Planning Commission. A nonresidential subdivision must also comply with all requirements for site plan approval outlined in any zoning ordinance. Site plan approval may occur simultaneously at the discretion of the Planning Commission. Additionally, a nonresidential subdivision must adhere to all these regulations and any further standards established by the Planning Commission, while conforming to the proposed land development plan, major street or road plan, and any zoning ordinance.

4-112.2 Standards

Along with the principles and standards outlined in the regulations, which are suitable for planning all subdivisions, the subdivider must demonstrate to the satisfaction of the Planning Commission that the proposed public way, parcel, and block pattern are specifically tailored to the anticipated uses and consider other nearby uses. The following

principles and standards must be followed:

1. Proposed industrial parcels must be appropriate in size and location for the types of nonresidential development expected.
2. Public rights-of-way and pavements shall be sufficient to support the expected type and volume of traffic.
3. Special requirements may be imposed by the governing body regarding any public way, curb, gutter, and sidewalk design and construction specifications.
4. Special requirements may be imposed by the governing body regarding the installation of public utilities, including water, sewer, and stormwater drainage.
5. Every effort shall be made to protect nearby residential areas from potential nuisances caused by the proposed non-residential subdivision, including providing extra depth in parcels backing onto existing properties or potential residential development and provisions for permanently landscaped buffer strips, when necessary; and
6. Public roads used for nonresidential traffic, especially trucks, generally should not extend to the boundaries of nearby existing or planned residential areas.