

**SUBDIVISION REGULATIONS
CITY OF MORRISTOWN, TENNESSEE
AND PLANNING REGION**



**Approved
By the
Morristown Regional Planning Commission
Adopted 10/14/2014**

SUBDIVISION REGULATIONS (10/14/2014)

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SECTION 1

PURPOSE, AUTHORITY AND JURISDICTION

1.1 PURPOSE AND INTENT

The purpose and intent of these regulations is as follows:

To encourage the development of sound, healthful, and economically stable residential, commercial, industrial and public areas; to coordinate land developments to ensure that future physical growth will be orderly, efficient and conducive to a minimum outlay of private and public expense in providing services to new growth areas; to minimize fire hazards, to provide for safe, convenient and efficient traffic circulation, and provide for light and air in habitable structures; to provide for the overall harmonious development in conformance to the adopted Comprehensive Plan; to strongly encourage development review meetings with City staff before significant resources are committed privately because some tracts of land simply are not economically suitable for certain types of development. In other cases, certain types of development may be economically feasible but prohibited by development ordinance measures such as restrictive zoning districts, road classifications, the Water Quality Buffer Zone or 100-year floodway designations.

1.2 AUTHORITY

These regulations are adopted pursuant to the authority established in the Tennessee Code Annotated, Title XIII, Section 13-3-401 through 13-3-411 and Section 13-7-301 through Section 13-7-306. From and after the passage of these regulations the Regional Planning Commission shall be the official planning authority and no plat or plan of land subdivision within the City of Morristown or its urban growth boundary shall be recorded in the Hamblen County (or Jefferson County's) Register of Deeds Office unless said plat has received final approval in writing by the Regional Planning Commission.

1.3 JURISDICTION

These regulations shall govern all subdivision of land within the corporate limits of the City of Morristown and within the Morristown Planning Region (Urban Growth Boundary).

1.4 ADMINISTRATION

It shall be the duty of the City Administrator, or the designated official by the City of Morristown, Tennessee, to administer and establish the procedures for the proper implementation of these regulations.

1.5 APPLYING HIGHEST STANDARD

Whenever the provisions of these regulations and those of any other regulation, ordinance, rule or other provision of law apply to the same subject matter, whichever provisions are more restrictive or impose higher standards shall govern and hold true for all provisions of these regulations. The Regional Planning Commission may require standards above the minimum contained herein whenever it feels the public health, safety, and welfare justifies such increases.

1.6 GENERAL PROVISIONS

A. Variances

Where the Regional Planning Commission finds that extraordinary hardships or particular difficulties may result from the strict compliance with these regulations, it may, after written application by the developer, grant variances to the regulations, subject to specified conditions, so that substantial

justice may be done and the public interest secured, provided that such variances shall not have the effect of nullifying the intent and purpose of these regulations. The Regional Planning Commission shall not grant variances to these regulations unless they shall make findings based upon the evidence presented to them in each specific case that:

1. Physical Surroundings

Because of the particular physical surroundings, shape, or topographical conditions of the specific property involved, a particular hardship to the owner would result, as distinguished from a mere inconvenience, if the strict letter of the regulations was adhered to.

2. Unique Conditions

The conditions upon which the request for a variance is based are unique to the property for which the variance is sought and are not applicable, generally, to other property, and have not been created by any person having an interest in the property. A variance shall not be requested for financial gain.

3. Detriment to Public Safety

The granting of the variance will not be detrimental to the public safety, health or welfare, or injurious to other property or improvements in the neighborhood in which the property is located.

B. Amendments

The Regional Planning Commission may from time to time revise, modify or amend these regulations by appropriate action taken at a regularly scheduled meeting after the required notice and holding of a public hearing.

C. Enforcement and Penalties for Violations

The enforcement of these regulations and penalties for the unapproved recording or transfer of land is provided by state law in the authority granted by public acts of the State of Tennessee. The following procedures are provided in the Tennessee Code Annotated for the enforcement of subdivision regulations:

1. Recording

- a) No plat or plan of a subdivision of land into two or more lots located within the area of planning jurisdiction shall be admitted to the land records of the county or received or recorded by the County Register of Deeds until said plat or plan has received final, certified approval of the Regional Planning Commission as provided in Section 13-4-302 and Section 13-3-402, Tennessee Code Annotated.
- b) Upon final approval, a staff representative of the City of Morristown shall record the plat in the Hamblen County Office of the Register of Deeds upon the payment by the subdivider of any and all fees associated with the plat that are established in these regulations. Recording of the plat shall occur within ten (10) business days of collecting all fees or the final certification of all required approving authorities of the subdivision, whichever comes first.

2. Acceptance of Streets and Utilities

- a) Formal acceptance of public infrastructure by the City of Morristown shall not be deemed complete until the final plat has been approved by the Regional Planning Commission, all associated sureties have been released and a resolution to accept the infrastructure by the City of Morristown is adopted by City Council or the County Commission.
- b) No board or public officer shall have the authority to light any street, lay or authorize the laying of water mains or sewers, or to construct other facilities or utilities in any street located within the area of planning jurisdiction unless such street shall have been accepted, opened, or otherwise received the legal status of a public street prior to the adoption of these regulations;

or unless such street corresponds in its location and lines to a street shown on a subdivision plat approved by the Regional Planning Commission and recorded prior to the adoption date as shown on these regulations, or on a street plan made and adopted by the Regional Planning Commission as provided in Section 13-4-303 and Section 13-3-403, Tennessee Code Annotated.

3. Penalties

For violation of these regulations, the following penalties are provided by the Tennessee Code Annotated:

a) Recording

No county register shall receive, file, or record a plat of a subdivision within the planning region without the approval of the Regional Planning Commission as required in Section 13-4-302 and Section 13-3-402, Tennessee Code Annotated; and any county register so doing shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by law.

b) Transfer or Sale of Land

Section 13-3-410 and Section 13-4-306, Tennessee Code Annotated provides that whoever being the owner, or agent of the owner, of any land, transfers or sells or agrees to sell or negotiates to sell such land by reference to or exhibition of or by other use of a plat of subdivision of such land without having submitted a plat of such subdivision to the Regional Planning Commission and obtained its approval and the certification of the other approving authorities as required before such plat is recorded in the office of the appropriate county register, shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by law; and the description by metes and bounds in the instrument of transfer or other document used in the process of selling or transferring shall not exempt the transaction from such penalties. The municipality, through its solicitor or their official designated by its chief legislative body and/or the county attorney or other officials designated by the County Commission, may enjoin such transfer or sale or agreement by action or injunction.

c) Erection of Structures

Any building or structure erected in violation of the subdivision regulations shall be deemed an unlawful building or structure and the City Attorney or other official designated by the chief legislative body may bring action to enjoin such erection or cause it to be vacated or removed as provided in Section 13-3-411 and Section 13-4-308, Tennessee Code Annotated.

D. Fees

The fees for a subdivision shall be based on a recommendation by the Regional Planning Commission to be approved by Resolution by the City Council. The fee for a subdivision shall be paid at the same time as the submission of the subdivision plat (Preliminary and Final).

E. Severability

Should any section, subsection, paragraph, or provision of these regulations be held invalid or unenforceable by a court of competent jurisdiction, such decision shall in no way affect the validity of any other provision of these regulations.

F. Repealer

All regulations in conflict with the provisions of these requirements are hereby repealed; except that all plats having preliminary approval prior to the adoption of these regulations will be governed by all previous regulations for a period of twelve (12) months from the date of preliminary approval. At the end of that period all preliminary approvals granted will be subject to the requirements of these regulations.

1.7 PUBLIC HEARING, ADOPTION AND EFFECTIVE DATE

Before adoption of these regulations, a public hearing as required by Sections 13-4-303 and 13-3-403, Tennessee Code Annotated, was afforded any interested person or persons and was held on August 12th, 2014. Notice of said hearing was announced in the Citizen-Tribune, being a newspaper of general circulation in Hamblen County and within the Morristown Planning Region. These formal regulations shall be in full force and effect from and after their adoption and effective date.

Adopted: October 14th, 2014

Rose Parella, Secretary
Morristown Regional Planning Commission

SECTION 2

DEFINITIONS

2.1 THE MEANING OF WORDS AND TERMS

Terms not herein defined shall have their customary dictionary definitions where not inconsistent with the context. The terms "shall" and "will" are always mandatory, and the word "may" is permissive. When not inconsistent with the context, words used in the singular number include the plural and those used in the plural number include the singular. Words used in the present tense include the future. The word "person" includes a firm, partnership or corporation as well as an individual. The word "lot" includes the words "plot", "tract" or "parcel." The word "building" includes the word "structure".

The Regional Planning Commission's interpretation shall be final, absent to any appeal to the proper Court of this State, as to the meaning of any definition, statement, requirements, symbol, and/or abbreviation used in connection with these regulations or application thereof.

2.2 DEFINITIONS

APPROVING AUTHORITIES – Those responsible for reviewing and applying certification to subdivision plats indicating conformance with all applicable laws, ordinances and regulations as required in these regulations and in the Tennessee Code Annotated. Approving Authorities include, but are not necessarily limited to the responsible party that signs on a subdivision plat (1) Certificate of Ownership and Dedication, (2) Certificate of Accuracy, (3) Certification of the Approval of Public Ways or Bond Posting; (4) Certification of the Approval of Water System; (5) Certification of the Approval of Sewerage System; (6) Certification of the Approval of Power System; (7) Certification of Engineering Approval; and (8) Certificate of Approval for Recording. Where the City Engineer and/or County Road Superintendent's approval is referenced in this ordinance, the City Engineer shall be responsible for areas within the corporate limits of the City of Morristown, while the County Road Superintendent shall be responsible for areas outside the corporate limits of the City but within the Morristown Planning Region (Urban Growth Boundary).

ARCHITECT - An individual licensed and registered by the State of Tennessee to practice architecture in the State of Tennessee.

AVERAGE DAILY TRAFFIC (ADT) - A projected traffic volume based upon the estimated number of vehicles traveling upon a given street within a twenty-four hour period.

BIKEWAYS - A facility that is explicitly provided for non-motorized bicycle travel, and/or may apply to greenway design standards.

BUILDING - Any structure used or intended for supporting or sheltering any use or occupancy.

BUILDING SETBACK - A line beyond which no foundation wall or part of the structure of any building shall project with the exception of open walkways and the sub-surface projection of footings.

COMPREHENSIVE PLAN - The Comprehensive Plan or any applicable element of the plan for the Morristown Region as approved by the Regional Planning Commission. The plan may consist of such elements as transportation plan, major thoroughfare plan, general land use plan, community facilities plan, population and economics plan, and other maps, data, and descriptive matter for the physical development of the urban area or any portions thereof, including any amendments, extensions, or additions thereto as adopted by the Regional Planning Commission. The plan and its elements may also be referred to as the General Plan.

COUNTY COMMISSION – The Hamblen County Commission

COUNTY REGISTER'S OFFICE - Hamblen County Register of Deeds office or, unless it specifically states, the Jefferson County Register of Deeds office.

COUNTY ROAD SUPERINTENDENT – The Hamblen County Road Superintendent.

DEDICATION - The setting aside of land and/or improvements for a particular use.

DESIGN MANUALS - The manuals adopted by Hamblen County and City of Morristown, Tennessee for design and specifications of roads, water mains, sanitary sewers, storm drains, culverts, and any amendments thereto.

DEVELOPER - See "SUBDIVIDER".

EASEMENT - A grant by the owner of land for the use of such land by others including the public for a limited and specifically named purpose or purposes.

ENGINEER - An individual licensed and registered by the State of Tennessee to practice engineering in the State of Tennessee.

ENGINEERING OFFICIAL - The City Engineer, his or her designate or any duly authorized City employee.

FEMA – Federal Emergency Management Agency

FIRM – Flood Insurance Rate Map, as distributed by FEMA.

GREENWAY – A corridor of land recognized for their ability to connect people and places together. These ribbons of open space are located within linear corridors that are either natural, such as rivers and streams, or manmade, such as abandoned railroad beds and utility corridors. Greenways as vegetated buffers protect natural habitats, improve water quality and reduce the impacts of flooding in floodplain areas. Most greenways contain trails, which enhance existing recreational opportunities, provide routes for alternative transportation, and improve the overall quality of life in an area.

GREENWAY TRAIL – A trail that can be paved or unpaved, and can be designed to accommodate a variety of trail users, including bicyclists, walkers, hikers, joggers, skaters, horseback riders, and those confined to wheelchairs.

HEALTH DEPARTMENT - Tennessee Department of Environment and Conservation, Hamblen County Health Department, Public Works Department for the City of Morristown, Morristown's Water System, and the Wastewater Department of the City of Morristown.

HIGHWAY DEPARTMENT – Refers to the Hamblen County Highway Department and/or the City of Morristown's Department of Public Works.

IMPROVED SINKHOLE – See "SINKHOLE".

INDIVIDUAL SEWAGE TREATMENT FACILITY - A sewage disposal system developed to function on an individual lot basis.

INJECTION WELL – A structure or a device which is used for the emplacement of fluids into a subsurface stratum including, but not limited to:

1. A well used for the emplacement of fluids;
2. A subsurface fluid distribution system;

3. An improved sinkhole; or
4. Infiltration cell and any other structures or devices designed, constructed, or used to emplace fluids into the subsurface.

INJECTION ZONE – Means the formation, group of formations, or part of a formation that receives fluids through an injection well.

LIMITED ACCESS HIGHWAY – An expressway, arterial, or collector street serving a primary function of efficient and expedient traffic flow.

LOT - A portion of land separated from other portions by description as on a subdivision plat or record of survey map as described by metes and bounds and intended for transfer of ownership or for building development. For the purposes of the regulation, the term does not include any portion of a dedicated right of way.

LOT, CORNER - A lot on which two or more adjoining sides abut on a public street.

LOT, DOUBLE FRONTAGE - A lot which runs through a block from street to street.

LOT, INTERIOR - A lot other than a corner lot.

LOT, REVERSE FRONTAGE - A double frontage lot which has its vehicular access point limited to the back of the lot rather than having access on its front.

LOT WIDTH - The mean horizontal distance cross the lot measured at right angles to the depth.

MINOR SUBDIVISION - A subdivision consisting of ten (10) lots or less having all required improvements available and does not require a variance from the adopted subdivision regulations.

MORRISTOWN CITY COUNCIL – The elected, governing body of the City of Morristown, Tennessee.

MORRISTOWN REGIONAL PLANNING COMMISSION – The administrative body duly appointed by the Morristown City Council to approve subdivision plats and recommend plans and regulations to enforce the future physical development of the City of Morristown and the Planning Region. It may also be referred to as the Morristown Municipal and Regional Planning Commission, the Planning Commission, or the Regional Planning Commission.

PAVEMENT WIDTH – The pavement width shall be defined as being from edge of pavement to edge of pavement, excluding curb or curb and gutter sections.

PERMANENT EASEMENT - An easement providing legal access from one or more lots to existing public highways, streets, thoroughfares, utilities or drainage facilities. Maintenance of such permanent easements shall not be the responsibility of the Municipality or County.

PLANNING REGION - For the purpose of these regulations the area composed of territory of the Morristown, Tennessee, municipality together with the designated Morristown Planning Region (urban growth boundary) in Hamblen County.

PLAT - The map, drawing or chart upon which the plan of subdivision is presented to the Regional Planning Commission for approval.

PUBLIC SANITARY SEWERAGE SYSTEM – A central sanitary sewer system owned, operated and maintained by a municipality, county, or utility district.

PUBLIC WATER SYSTEM - A central water system owned, operated and maintained by a municipality, county, or utility district.

PUBLIC USAGE - Public parks, schools, administrative, cultural or service buildings not including public land or buildings devoted solely to the storage and maintenance of equipment or material.

PUBLIC UTILITY - Any person, firm, corporation or municipal department or board duly authorized to furnish under federal, state or municipal regulations to the public electricity, gas, communications, transportation, water or sewer.

REGIONAL PLANNING COMMISSION -See Morristown Regional Planning Commission

REPLAT – A combination of lots, tracts, parcels, etc., to form a larger lot(s) or parcel(s); or the re-positioning of one or more lot lines of two or more lots, parcels, etc., as shown on a subdivision plat. All replats shall conform to the provisions of the subdivision regulations and/or applicable zoning ordinances.

RESERVE STRIP - A portion of land set aside to limit and/or prohibit access.

RIGHT OF WAY - A portion of land dedicated for placement of a street, road, thoroughfare or crosswalk, utilities, drainage facilities, and/or similar uses and designated by means of a right of way line or description of boundaries.

ROAD - See "STREET."

ROADWAY - The portion of a street or right of way which contains the street pavement and curb and is used primarily as a channel for vehicular movement and secondarily as a drainage canal for storm water. In these regulations where curbs are required, the pavement is measured from the edge of pavement to edge of pavement excluding curb or curb and gutter where required.

SECRETARY - A person designated by the Morristown Regional Planning Commission as the secretary.

SINKHOLE – Means a naturally occurring closed depression in a karst area characterized by inward drainage (inlets) accepting runoff from the surrounding area and having no visible surface outlet. An improved sinkhole means a naturally occurring karst depression which has been modified by man for the purpose of directing and emplacing fluids into the subsurface.

STAFF - The employees of the City of Morristown.

STREET - A general term used to describe a right of way that provides a channel for vehicular or pedestrian movement between certain points in the community, which may provide for vehicular and pedestrian access to properties adjacent to it, and which may also provide space for the location of underground and aboveground utilities. Streets are classified by their function as follows:

Interstates (Expressways) - An expressway is a limited access facility designed for traffic requiring relatively high operating speeds and having relatively long operating distance.

Arterial Streets - Arterial streets are used primarily for the movement of vehicles, but may provide for vehicular access to adjacent property. When access to adjacent property is permitted, it should be by means of a marginal access type of street to serve several properties rather than permitting each property owner to have his own private driveway access point. Limited access should be encouraged on arterial streets to maintain the function that the street provides the traveling public. The number of household units served by arterial streets is unlimited; however, access onto these streets should be limited. Arterial Streets may be

classified as either Principal Arterials or Minor Arterials according to the average daily traffic (ADT) and their function in the overall regional scheme of the transportation plan.

Collector Streets - Collector streets are used more for movement of vehicles than for providing access to adjoining properties. Access to adjacent property should be planned and controlled so that minimum disturbance is made to the traffic-moving efficiency of the collector street.

Local Streets - This class of street is primarily a residential street that serves the internal traffic movement within an area of the City, such as a subdivision, and connects this area with a higher classification of the street system.

Marginal Access Streets - Marginal access streets are local or residential streets, which are parallel to and adjacent to arterial streets and expressways. These streets provide access to abutting properties and protection from through traffic.

Dead End Streets (Cul-de-sac) - Dead End Streets are streets having only one opening and providing no access to another street. The closed end provides a turn-around for vehicles.

Alleys - Alleys are minor rights of way, dedicated to public use, which afford a secondary means of vehicular access to the back or side of properties otherwise abutting a street, and which may be used for public utility purposes. Property cannot be subdivided if the only access is to an alleyway.

STREET FURNITURE - Any improvements placed within the street right of way such as planters, street signs, directional signs, street-lights, benches, and trash receptacles.

SUBDIVIDER - An individual, partnership, corporation, or other legal entity or agent thereof which undertakes the activities covered by these regulations. Inasmuch as the subdivision plan drawings are merely a necessary means to the end of assuring satisfactory development, the term includes "owner" or "builder", even though the persons and their precise interests may vary at different project stages.

SUBDIVISION - The division of a tract or parcel of land as defined by the Tennessee Code Annotated.

SURVEY CONTROL MONUMENTS (SCM) - A network of control monuments established across the Morristown Planning Region. Each monument was located within the Tennessee State Plane Coordinate System by First Order Global Positioning System (GPS) methods, and for which the elevation has been established by field-run levels to meet First Order, Class I specifications. The horizontal data was compiled by GPS surveys using two Tennessee Geodetic Reference Network (TGRN) monuments. The TGRN is referenced to the North American Datum 1983 (NAD 83). The projection employed is the Lambert Conformal Conic Projection.

SURVEYOR - An individual licensed and registered by the State of Tennessee to practice surveying in the State of Tennessee.

T.C.A. - Tennessee Code Annotated, the state law(s) of Tennessee.

TDEC - Tennessee Department of Environment and Conservation.

TDOT - Tennessee Department of Transportation.

TRACT - A portion of land with definite and ascertainable limits or boundaries.

TRAFFIC ACCESS AND IMPACT ANALYSIS - a study which assesses the effects that a particular development's traffic will have on the transportation network in the community.

TRAFFIC PROJECTIONS - For the purpose of these regulations average daily traffic (ADT) projections shall be ten (10) trips for each single family residential lot and six (6) trips for each multi-family residential unit (including duplexes, triplexes, garden apartments, townhouses, condominiums, apartments, group homes, etc.). The formula for calculating ADT for the purposes of these regulations shall be:

(Number of Proposed Dwelling Units) X (ADT Factor per Type of Dwelling Unit)

The ADT of all other land uses shall be determined by trip generation models as defined in Trip Generation, Latest Edition, Institute of Transportation Engineers, Washington, D.C.

TRANSPORTATION PLAN - See "COMPREHENSIVE PLAN."

URBAN GROWTH BOUNDARY (UGB) – The region that contains the corporate limits of a municipality and the adjoining territory where growth is expected, as defined by the Growth Policy, Annexation, and Incorporation (Under Public Act 1101 of 1998): A Guide for Community Leaders by The University of Tennessee Institute for Public Service, and the Tennessee Advisory Commission on Intergovernmental Relations. For the City of Morristown and its urban growth boundary, this may also be referred or defined as the Morristown's Urban Growth Area, the Morristown UGB, the City of Morristown's Planning Region, the City's Planning Region, or the City of Morristown's Urban Growth Boundary.

WATER QUALITY MANAGEMENT FACILITY – Swales, ditches, ponds, proprietary systems, storm drains, and/or other infrastructure required by the Water Quality Management Plan (WQMP).

WATER QUALITY MANAGEMENT PLAN (WQMP) – A plan for managing stormwater at a development during and after construction as required by the City's Post Construction Water Quality Management Ordinance.

ZONING REGULATIONS - The duly adopted zoning regulations enacted by the City of Morristown and/or by Hamblen County.

SECTION 3

PROCEDURE FOR PLAT APPROVAL

In order to secure review and approval of proposed subdivisions by the Regional Planning Commission, any owner of land lying within the City of Morristown, Tennessee, or its Planning Region, wishing to subdivide such land, shall prior to making any improvements or installations follow certain procedures as described herein.

The review and approval of a Subdivision Plat consists of four separate steps:

1. The initial step is to arrange a pre-application conference with planning and engineering staff and to submit a Concept Plan for staff review. A Concept Plan should be approved to better expedite the process as a whole.
2. The second step is the submission of a utility plan to the project coordinator. The project coordinator will coordinate a meeting with the Utility Providers to review the plan. This meeting must be completed prior to submission of the preliminary plat.
3. The third step involves the preparation and submission to the Regional Planning Commission of a Preliminary Plat and all associated Construction Plans of the proposed subdivision.
4. Step four is the preparation and submission to the Regional Planning Commission of a Final Plat together with Engineered as-built drawings and/or the posting of a bond. This Final Plat becomes the instrument to be recorded in the County Register of Deeds Office when duly signed by the Secretary of the Regional Planning Commission.

The only exception to these steps are Minor Subdivisions involving the creation of two (2) or more lots, each being a minimum size of 5 acres or more; which do not involve construction of new streets, water or sewer facilities, or other utilities; are fronted in their entirety on an improved public road; and do not require any variance from these regulations and/or any applicable zoning ordinances. Minor Subdivisions may be reviewed and approved by the Regional Planning Commission in the form of a Final Plat.

For the purpose of these regulations, the date of the regular meeting of the Regional Planning Commission at which consideration of approval for a final subdivision plat shall constitute the date of official submittal. The statutory period required for formal approval or disapproval of the plat shall commence at this meeting.

3.1 MINOR SUBDIVISION PROCEDURE

The subdivider shall submit the Final Plat to the planning department by the deadline established by the Regional Planning Commission for the regularly scheduled meeting for which the Final Plat is to be considered. A Final Plat that does not meet the requirements set forth in these regulations may be deemed ineligible for consideration by the Regional Planning Commission unless the appropriate corrections, clarifications or revisions are made to the plat in a timely manner as requested by staff.

Submission shall consist of four (4) paper copies and a digital copy based on the Tennessee State Plane Coordinate System in one of the following formats: .dwg, .dwx or .shp formats.

The platting information shall be the same as required for Final Plat approval. Under special circumstances where unusual topographic problems exist, the staff may require that additional topographic information be provided. If the staff determines that the subdivision complies with such regulations governing a subdivision of land as adopted by the Regional Planning Commission, the plat will be presented for approval.

Newly created lots must make provisions for installing a sewer lateral (the connection from a main sewer line to the property line) if one does not already exist. Such laterals are typically installed in coordination with the development of the lot, however a fee that is determined from current construction cost estimates

must be provided at the time the property is subdivided by the subdivider in order to cover the costs of providing this service.

A. Two Lot Subdivision

Platting information for subdivisions consisting of two (2) lots or less with no additional public infrastructure to be constructed, shall be the same as required for Minor Subdivisions. If the staff determines the subdivision complies with these regulations it will certify the plat in writing to the Secretary of the Regional Planning Commission to be signed. After recording the Final Plat, the staff shall report to the Regional Planning Commission at the next regular meeting action relative to Two Lot Subdivision Plats.

3.2 CONCEPT PLAN SUBMISSION

The subdivide shall visit the planning offices and discuss the effects of the official planning literature as well as general design standards, zoning and other related matters that might affect the proposed subdivision. In addition, the subdivider may submit pre-application plans and data for review, advice and assistance by the Regional Planning Commission, City staff, County Road Superintendent, Health Department or appropriate utility agency.

***Multi-phase** projects shall submit a Master Plan of all proposed project phases. The Master Plan must obtain approval from the Morristown Regional Planning Commission.

3.3 PRELIMINARY PLAT SUBMISSION

The purpose of the Preliminary Plat is to safeguard the subdivider from unnecessary loss of time and expense of preparing a Subdivision Plat, which does not conform to the specifications of the minimum standards for subdivision development. Public agencies having jurisdiction will review the Preliminary Plat regarding matters within their jurisdiction.

The subdivider shall submit to the planning staff (4) copies of the Preliminary Plat and (2) copies of the construction plans, signed and stamped by the design professional(s) performing the work for distribution.

The Preliminary Plat and Construction Documents must receive approval from all reviewing agencies (both City of Morristown and necessary public utility provider(s)) before being considered by the Regional Planning Commission. Once all approvals are verified, the Preliminary Plat will be considered by the Regional Planning Commission at the next available meeting. To be eligible for that meeting, **all approvals must be complete** and verified by the planning staff a minimum of ten (10) business days prior to the meeting date.

The following City Departments shall review the Preliminary Plat and/or Construction Plans: Community Development & Planning, Engineering, GIS, Public Works, Fire and Police Departments.

The following County and/or State agencies may review the Preliminary Plat and/or Construction Plans: Emergency Communications Department (911), Health Department, County Road Department, Sheriff's Department, Tennessee Department of Transportation, Tennessee Department of Environment and Conservation.

3.4 PRELIMINARY PLAT AND CONSTRUCTION PLANS CONTENT

The Preliminary Plat shall be prepared, and stamped, by a land surveyor licensed to practice in the State of Tennessee. Construction Plans shall be prepared and stamped by a civil engineer, or a licensed land surveyor as allowed by T.C.A., who is licensed to practice in the State of Tennessee. ***Complete**

construction plans shall be submitted with the Preliminary Plat.

All submittals for preliminary approval shall be stamped by the design professional(s) preparing the plat and construction plans. Plats and/or plans that do not clearly display the surveyor's stamp and signature and/or engineer's stamp and signature shall immediately be deemed incomplete and shall not be reviewed further by the staff and the Regional Planning Commission.

The Preliminary Plat shall be submitted on Arch C (18"x24"") size paper at a scale of not less than one-inch equals one hundred feet (1" = 100') along with any necessary fees and a completed subdivision application. Multiple pages with appropriate match lines may be considered for large subdivisions that cannot meet these parameters. An index sheet that gives detailed page numbering shall be required for multi-page subdivisions.

A. Required Data for Preliminary Plat:

1. Subdivision name, location map, total acreage, tax map and parcel number of tract.
2. The name and address of the property owner.
3. The name and address of the developer (if different).
4. Surveyor's name, address, stamp and signature.
5. Date of preparation, graphic scale, and north arrow.
6. Location of existing physical features such as storm drains, water quality management facilities, sanitary sewers, power lines, gas lines, water lines, buildings and water bodies.
7. Names, location, widths, and other dimensions of streets, alleys, easements and lot lines on adjoining property.
8. Current zoning and building setback lines.
9. Names and warranty deed or tax map references of adjoining property owners.
10. Contours at not more than 2' intervals and note stating where the contours were derived.
11. Boundary of Flood Fringe and Floodway as established by FIRM maps or as determined by a land surveyor or civil engineer that is licensed to practice in the State of Tennessee. If not applicable, a notation to the effect that none of the property lies within such a hazard area, as confirmed by the surveyor or engineer, should be included.
12. The proposed location of all concrete survey control monuments and iron pins.
13. Location of any planting strips, signage, street plantings, sidewalks and/or greenways, or other features proposed as part of the public right-of-way.
14. Proposed names of all new streets.
15. Proposed utility lines and easements.
16. The total number of new lots proposed and each lot area noted on the plat.
17. The total length of proposed new streets.
18. A note acknowledging the required ten (10) feet utility easement along the interior of all lot lines.
19. Closure error of 1/10,000 or better.

B. Required Data For Construction Plans

The Construction Plans shall be drawn on D (24"x 36") or E (30"x 42") size paper at a scale not larger than one inch equals fifty feet (1" = 50'). The Construction Plans shall consist of the following information (where applicable) as detailed in Section 5:

1. Street and Road Construction (Section 5.1)
2. Grading (Section 5.2)
3. Erosion and Sediment Control (Section 5.3)
4. Pavement and Design Thickness (Section 5.4)
5. Curbs and Gutters (Section 5.5)
6. Sidewalks (Section 5.6)
7. Street Trees (Section 5.7)

8. Street and Traffic Control Signs (Section 5.8)
9. Storm Drainage and Treatment (Section 5.9)
10. Driveways Culverts (Section 5.10)
11. Cross Drains (Section 5.11)
12. Sanitary Sewerage (Section 5.12)
13. Water Supply Systems (Section 5.13)
14. Electrical Utilities (Section 5.14)
15. Natural Gas Utilities (Section 5.15)
16. Other Utilities (Section 5.16)
17. Easements (Section 5.17)²
18. Monuments and Iron Pins (Section 5.18)
19. Public Open Spaces (Section 5.19)

The Regional Planning Commission may require standards above the minimum contained herein whenever it feels the public health, safety, and welfare justifies such increases.

C. Review by Individual Agencies

All Preliminary Plats submitted to the Regional Planning Commission shall be reviewed by the departments and/or agencies listed in Section 603.4. These agencies shall review the Preliminary Plat to the extent that each has jurisdiction. If rejected, the agency shall provide the Regional Planning Commission with a written statement specifying all reasons for rejection. The length of Staffs review time will vary depending upon the scope of the project. The initial step of submitting a Concept Plan and consulting with City staff will help determine an estimated period of review.

D. Elapsed Time

Unless a time extension has been requested by the sub divider in writing and granted by the Regional Planning Commission, all final plats shall be submitted within twelve (12) months of the approval date of the preliminary plat. Expired Preliminary Plats and construction plans shall be deemed obsolete upon a lapse of a twelve (12) month period and the developer shall be required to resubmit the Preliminary Plat and Construction Plans in accordance with the time requirements set forth in these Regulations prior to Final Plat submittal.

3.5 FINAL PLAT SUBMISSION

A subdivision qualifies for Final Plat approval when the entire infrastructure is completed, or a bond has been posted (for more information concerning performance bonds, please see Section 5.23). Final Plat approval allows conveyance of the subdivision lots and the issuance of Building Permits to third parties, and shall be given subsequent to Preliminary Plat approval. However, if any part of the Final Plat has outstanding bonds, letters of credit or other sureties, building permits will not be released until the Chief Building Official determines there is adequate access to City services. Final Plat approval does not constitute acceptance on behalf of the City for public infrastructure. (See Section 1.6)

Subsequent to the Preliminary Plat with Construction Plans approval and installation of improvements, the sub divider shall submit a completed subdivision application, any residual review or recording fees, four (4) paper copies of the final plat and two (2) hardcopy sets of engineered as-built drawings along with a digital copy of each based on the Tennessee State Plane Coordinate System in one of the following formats: .dwg, .dwx or .shp formats. Digital copies will not be released to outside entities without the written permission of the licensee of record. All paper drawings and calculations shall be sealed by an Engineer or Surveyor, as appropriate.

The Final Plat and Construction Documents must receive approval from all reviewing agencies (both City of Morristown and necessary public utility provider(s)) before being considered by the Regional Planning

Commission. Once all approvals are verified, the Final Plat will be considered by the Regional Planning Commission at the next available meeting. To be eligible for that meeting, all approvals must be complete and verified by the planning staff a minimum of ten (10) business days prior to the meeting date.

The following City Departments shall review the Final Plat and As Built drawings: Community Development & Planning, Engineering, GIS, Public Works, Fire and Police Departments.

The following County and/or State agencies may review the Final Plat and As Built drawings: Emergency Communications Department (911), Health Department, County Road Department, Sheriff's Department, Tennessee Department of Transportation, Tennessee Department of Environment and Conservation.

3.6 FINAL PLAT CONTENT

The Final Plat shall be drawn at a scale of not less than one inch equals one hundred feet (1"= 100') on an Arch C (18" x 24") sheet. Multiple pages with appropriate match lines may be considered for large subdivisions that cannot meet these parameters. An index sheet, with detailed page numbering, must be provided for multi-page subdivision plats or replats. As-built drawings may be on larger size sheets.

The Final Plat shall be prepared, and stamped, by a land surveyor licensed to practice in the State of Tennessee. Plats that do not clearly display the surveyor's stamp and signature shall immediately be deemed incomplete and shall not be reviewed further by the staff and the Regional Planning Commission.

The general layout of the Final Plat shall conform to the sample template provided in Figure 3.7-A3.

A. Required Data for Final Plat:

1. Subdivision name and total acreage of tract.
2. The name and address of the property owner.
3. The name and address of the developer (if different).
4. Surveyor's name, address, registration number and stamp with signature and date.
5. Date of preparation, graphic scale, north arrow and location map.
6. The names and right of way widths of streets abutting property.
7. Tax-map, group and parcel identification, and warranty deed of adjoining properties.
8. Boundary lines of tract distinguished from adjacent property and length of courses to the nearest hundredth of a foot. In all cases where the tract being subdivided, either in whole or in part thereof, consists of less than five acres, the entire boundary of the tract, including all exterior lot lines as well as new interior subdivision lines, shall be shown on the plat to the nearest hundredth of a foot.
9. Location and SCM station number of any reference monument whose use may be required by any provision contained herein. For subdivisions that lie within two thousand (2,000) feet, as measured along the nearest public right-of-way, of an existing SCM monument, there shall be a ground distance tie to that SCM monument. The tie shall be made using SCM coordinates of three or more points within the subdivision. The SCM coordinates shall be conveyed as true elevations above sea level. If the subdivision lies beyond two thousand (2000) feet, as measured along the nearest public right-of-way, of an existing SCM monument, the City Engineering Department will establish SCM coordinates on the reference monuments for the proposed subdivision using global positioning at a charge assessed to the developer due to the City of Morristown.
10. Locations, widths, name and purpose of all easements (including utilities).
11. All lot line distances expressed to the nearest one-hundredth of a foot and all lot line bearings expressed to the nearest second of arc.
12. Reservations and dedications indicated as to purpose on tract.
13. Lot numbers and block numbers, setback lines with dimensions or notation that all lots conform to existing zoning ordinance.

14. Closure error of 1/10,000 or better.
15. One hundred year flood elevation and drawn floodway boundary as defined by FEMA, or shown on a FIRM map or a notation to the effect that the surveyor has confirmed that none of the property lies within such a hazard area.
16. The total number of new lots and their square footage.
17. Existing or proposed sewer laterals (one for each lot).
18. A note acknowledging the required ten (10) feet utility easement along the interior of all lot lines.
19. New street addresses as provided by GIS/E911 Staff.
20. Zoning classification and building setbacks.
21. Additional right of way dedicated as required.
22. Street names, bearings, angles of intersection, and width.
23. Arc-length, radii, degree of curvature, and tangent distances.
24. The total length of proposed new streets.
25. Certification blocks (to be placed along the bottom edge of the plat; examples shown below)

- a) Certificate of Ownership and Dedication
- b) Certificate of Accuracy
- c) Certification of the Approval of Public Ways and Bond Posting
- d) Certification of the Approval of Water System
- e) Certification of Approval of the Power System
- f) Certificate of the Approval of Sewerage System
- g) Certification of Engineering Approval
- h) Certification of Approval for Recording

The Regional Planning Commission may require standards above the minimum contained herein whenever it feels the public health, safety, and welfare justifies such increases.

<p>CERTIFICATE OF ACCURACY</p> <p>I hereby certify that this is a Category II survey and the ratio of precision of the unadjusted survey is 1:10,000 as shown hereon.</p> <p style="text-align: center;">_____, _____</p> <p style="text-align: center;">Date</p> <hr style="border: 0.5px solid black;"/> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Surveyor</td> <td style="width: 50%; border: none;">TN Reg. No.</td> </tr> </table>		Surveyor	TN Reg. No.
Surveyor	TN Reg. No.		

<p>CERTIFICATION OF THE APPROVAL OF WATER SYSTEMS</p> <p>I hereby certify that (1) the water facilities have been installed in accordance with the adopted _____ Water System Design and Construction Standards; or (2) that a performance bond or other surety has been posted with the Regional Planning Commission in the amount of \$_____ to assure completion of all required improvements in case of default.</p> <p>_____, _____</p> <p>Date</p> <hr style="border: 0.5px solid black;"/> <p>Utility Service Provider or Health Department Official</p>
--

<p>CERTIFICATE OF THE APPROVAL OF SEWERAGE SYSTEM</p> <p>I hereby certify that (1) the sewage facilities have been installed in accordance with the adopted _____ Sewerage Design and Construction Standards; or (2) that a performance bond or other surety has been posted with the Regional Planning Commission in the amount of \$_____ to assure completion of all required improvements in case of default.</p> <p>_____, _____</p> <p>Date</p> <hr style="border: 0.5px solid black;"/> <p>Utility Service Provider or Health Department Official</p>

**CERTIFICATE OF
OWNERSHIP/DEDICATION**

I (We) hereby certify that I am (we are) the owners of the property shown and described hereon and that I (we) hereby adopt this Plan of Subdivision with my (our) free consent, establish the building lines, streets, alleys, walks, parks, and/or other open spaces to public or private use as noted.

_____,
Date

Owner

**CERTIFICATION OF THE APPROVAL OF
PUBLIC WAYS AND/OR BOND POSTING**

I hereby certify: (1) that streets, drainage systems and street signage have been installed in an acceptable manner according to city specifications; or (2) that a performance bond or other surety has been posted with the Regional Planning Commission in the amount of \$_____ to assure completion of all required improvements in case of default.

_____,
Date

City Engineer or County Road Superintendent

**CERTIFICATION OF APPROVAL FOR
RECORDING**

I hereby certify that the subdivision plat shown hereon has been found to comply with the subdivision regulations for Morristown, Tennessee, (adopted October 14th, 2014) with the exception of such variances, if any, as are noted in the minutes of the Regional Planning Commission and that it has been approved for recording in the Hamblen County Register of Deeds Office.

_____,
Date

Secretary, Morristown Regional
Planning Commission

**CERTIFICATION OF THE APPROVAL OF
POWER SYSTEMS**

I hereby certify that (1) the power facilities have been installed in accordance with the adopted _____ Power System Design and Construction Standards; or (2) that a performance bond or other surety has been posted with the Regional Planning Commission in the amount of \$_____ to assure completion of all required improvements in case of default.

_____,
Date

Utility Service Provider

3.7 "AS-BUILT" ENGINEERING DRAWINGS CONTENT

The "as-built" engineering drawings shall be prepared in the same manner as the approved Construction Plans, particularly in the following areas of work:

1. Street and Road Construction (Section 5.1)
2. Grading (Section 5.2)
3. Erosion and Sediment Control (Section 5.3)
4. Pavement and Design Thickness (Section 5.4)
5. Curbs and Gutters (Section 5.5)
6. Sidewalks (Section 5.6)
7. Street Trees (Section 5.7)
8. Street and Traffic Control Signs (Section 5.8)
9. Storm Drainage and Treatment (Section 5.9)

10. Driveway Culverts (Section 5.10)
11. Cross Drains (Section 5.11)
12. Sanitary Sewerage (Section 5.12)
13. Water Supply Systems (Section 5.13)
14. Electrical Utilities (Section 5.14)
15. Natural Gas Utilities (Section 5.15)
16. Other Utilities (Section 5.16)
17. Easements (Section 5.17)
18. Monuments and Iron Pins (Section 5.18)
19. Public Open Spaces (Section 5.19)

The Regional Planning Commission may require standards above the minimum contained herein whenever it feels the public health, safety, and welfare justifies such increases.

3.8 RECORDING OF PLAT

Upon final approval, the applicant shall submit to the Community Development Department (4) paper copies of the plat which have been duly signed by each respective utility provider, surveyor of record and required property owners, at which point a member of City Staff shall record the plat in the Hamblen County Office of the Register of Deeds upon the payment by the subdivider of any and all fees associated with the plat, the fee schedule being set by the Regional Planning Commission. Recording of the plat shall occur within ten (10) business days of collecting all fees or the final certification of the subdivision, whichever comes first.

3.9 FIELD TRIPS

The staff shall arrange for and conduct conferences with developers and field trips necessary for proper investigation of the Preliminary and Final Plats by affected City departments or area agencies and the Regional Planning Commission.

3.10 NOTIFICATIONS

The staff shall notify applicant or his authorized agent of the time and place of the public meeting to consider approval of the Preliminary and Final Plats. Notification shall take place at least five (5) days prior to the meeting of the Regional Planning Commission. The applicant, or his representative, shall attend the meeting at which the plat is to be considered. The Commission may deny approval if the applicant is not represented.

3.11 APPROVAL OR DISAPPROVAL

The Regional Planning Commission shall receive the recommendations of its staff and approve or disapprove the plat. In the event that the Regional Planning Commission fails to either approve or disapprove a plat within sixty (60) days of its official presentation to the Regional Planning Commission, such plat shall be deemed approved. If a plat is disapproved, reasons for such disapproval shall be stated in the records of the Regional Planning Commission.

3.12 RECORDS

The staff shall keep a record of all plats and Regional Planning Commission actions pertaining thereto.

SECTION 4

SUBDIVISION PLAT/ REPLAT APPROVAL

The purpose of this section is to assure that sound subdivision development will take place within the jurisdiction of the Morristown Regional Planning Commission by establishing minimum standards for use in the design of subdivisions.

4.1 STREETS AND ROADS

A. Conformity to the Adopted Transportation Plan:

The subdivision, or replating of land and the design of roads servicing such land shall be undertaken in conformity with the Transportation Plan, as adopted by the Morristown Regional Planning Commission.

B. Relation to Adjoining Road Systems:

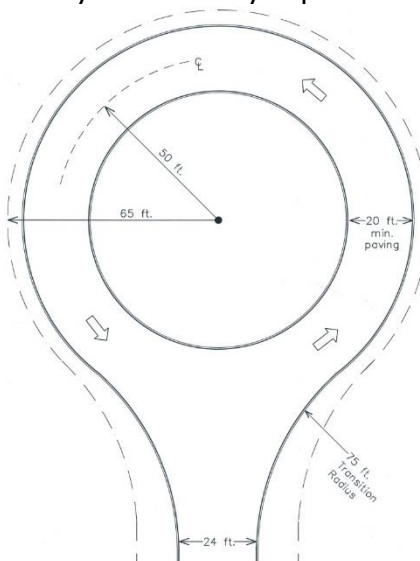
The proposed road systems of subdivision shall provide for the continuation of existing or platted streets in adjoining or nearby tracts. Where in the opinion of the Regional Planning Commission, it is desirable to provide for street access to adjoining property, streets shall be extended to the boundary of such property. Multiple access points for subdivisions shall be provided whenever possible.

C. Widths of Rights of Way and Pavements:

1. Interstates (Expressways) - As specified by the Tennessee Department of Transportation.
2. Arterial Streets - As specified by the City of Morristown and/or the Tennessee Department of Transportation (TDOT).
3. Collector Streets (within the City's Corporation Boundary) - Collector streets are those shown on the adopted Transportation Plan for the Morristown Planning Region. There are two design standards that may be used, which are:
 - a) Using curb and gutter, a minimum right of way width of sixty feet (60') with a minimum pavement width of thirty-six feet (36') with a ten foot (10') utility easement within the interior lot line adjacent to the right of way; **or**
 - b) Using curb and gutter, a minimum right of way width of sixty-six feet (66') with a minimum pavement width of thirty-six feet (36') without a ten foot (10') utility easement within the interior lot line adjacent to the right of way.
4. Collector Streets (Within areas outside the City's Corporation Boundary, but within the City's Urban Growth Boundary) – Collector streets are those shown on the adopted Transportation Plan for the Morristown Planning Region. There are four (4) possible options, which are:
 - a) Using curb and gutter, a minimum right of way width of sixty feet (60') with a ten foot (10') utility easement within the interior lot line adjacent to the right of way and a minimum pavement width of thirty-six feet (36'); **or**
 - b) Using curb and gutter, a minimum right of way width of sixty-six feet (66') with a minimum pavement width of thirty-six feet (36') without a ten foot (10') utility easement within the interior lot line adjacent to the right of way; **or**
 - c) Using extruded curb, a minimum right of way width of sixty feet (60') with a ten foot (10') utility easement within the interior lot line adjacent to the right of way and a minimum pavement width of thirty-six feet (36'); **or**
 - d) Without using curb and gutter, the minimum right of way width of seventy-five (75') feet with a minimum pavement widths of thirty-seven (37') feet, without the ten foot (10') utility easement within the interior lot line adjacent to the right of way.
5. Local Streets (within the City's Corporation Boundary) - Local streets are not shown on the adopted

Transportation Plan. They are designed primarily for the purpose described in its definition. This type street shall have curb and gutter with a minimum right of way width of fifty (50') feet and a minimum pavement width of twenty-four (24') feet, with a ten foot (10') utility easement within the interior lot line adjacent to the right of way.

6. Local Streets (Within areas outside the City's Corporation Boundary, but within the City's Urban Growth Boundary) – There are three (3) options, which are:
 - a) Using curb and gutter, the minimum right of way width of fifty feet (50') with a minimum pavement width of twenty-four feet (24'), with a ten foot (10') utility easement within the interior lot line adjacent to the right of way; or
 - b) Using extruded curb, the minimum right of way width of fifty feet (50') with a minimum pavement width of twenty-four feet (24'), with a ten foot (10') utility easement within the interior lot line adjacent to the right of way; or
 - c) Without using curb and gutter, the minimum right of way width of sixty-six (66') feet and minimum pavement width of twenty-eight (28') feet.
7. Marginal Access Streets - When a tract fronts on an arterial street, collector street or expressway, the Regional Planning Commission may require such lots to be provided with frontage on a marginal access street or may require reverse frontage lots. The minimum right of way width is fifty (50') feet, while the minimum pavement width is thirty-six (36') feet. Marginal Access Streets or Frontal Roads where required will be designed on a case by case basis.
8. Alleys - Alleys shall have a minimum right of way width of twenty feet (20') and a minimum pavement width of twenty feet (20'). Alleys shall be constructed, at a minimum, to local street standards. Alleys shall not be permitted as a public right of way after the adoption of these regulations.
9. Dead End Streets - Permanent Dead End Streets shall be no longer than one thousand feet (1000') measured along the center line from the entrance street right of way to the center of the cul-de-sac. For local streets a cul-de-sac shall have a right of way radius of not less than sixty-five (65) feet; the radius of the paved area fifty (50) feet (refer to illustration 9a shown below). A transition curve radius of not less than seventy-five feet (75') for connecting the turn-around with the end of the street is required and the maximum grade of the turn-around shall not exceed ten percent (10%). When unusual topographic or other conditions exist, the length of the cul-de-sac or type of turn-around may be varied by the Regional Planning Commission. The Regional Planning Commission may require additional rights of way and roadway improvements if variances are granted.



10. Temporary Dead End Street – Temporary Dead End Streets shall be no longer than one thousand five-hundred feet (1,500') measured along the centerline from the entrance street right of way to

the center of the cul-de-sac. Where a street is provided to give access to adjoining property, the street shall be constructed to the property line. Such streets shall be provided with a paved, temporary turn-around that will be dedicated as public. The turn-around will have a roadway diameter of sixty (60) feet. When the adjoining property is subdivided and the streets extended, that adjacent property owner shall be required to eliminate the temporary turn-around and install curbing to join the streets together. Where a street is provided to give access to adjoining property, and does not have any lots with frontage on said street, the street shall be constructed to the property line. Such streets shall not be required to provide a turn-around.

- a) All temporary turn-a rounds shall not be approved for a period of more than twenty-four (24) months by the Regional Planning Commission;
 - b) A bond sufficient to complete the permanent construction of a cul-de-sac in accordance with these Regulations and a maintenance bond for the temporary turn-a rounds, shall be posted by the developer and approved by the Regional Planning Commission, and approved by the City Council or County Commission for each temporary turn-around.
 - c) At the expiration of the twenty-four (24) month period, the City Council or County Commission may opt to declare the bond in default and proceed with the construction of the permanent turn-around or in cases of extreme hardship of the developer beyond his control, may extend the period of the bond for an additional twelve (12) month period.
11. Additional Width on Existing Streets - Subdivisions that adjoin existing streets shall dedicate additional right of way to meet minimum street or width requirements or requirements specified in the adopted Transportation Plan. The entire right of way shall be provided where any part of the subdivision is located on both sides of the existing street. When the subdivision is located on only one side of an existing street, one-half (1/2) of the required right of way, measured from the centerline of the existing roadway, shall be provided.

Table 4.1-C1 Generalized Street Classification Information:

Street Classification	Minimum Right Of Way (feet)	Minimum Pavement Width (feet)	Maximum Grade (%)
Principal Arterial	80	36	6
Minor Arterial	80	36	6
Collector (with curb and gutter) with 10-foot easement	60	36	8
Collector (with curb and gutter) without 10-foot easement	66	36	8
Collector (using extruded curb)	60	36	8
Collector (without curb and gutter) without 10-foot easement	75	37	8
Local (with curb and gutter)	50	24	10 (possibly 12)
Local (using extruded curb)	50	24	10 (possibly 12)
Local (without curb and gutter)	66	28	10 (possibly 12)
Marginal Access Street	50	36	8
Cul-De-Sac (Dead End Streets)	50	24-28	10

D. General Design Standards for Streets.

Please note that under certain circumstances, the City of Morristown and/or the Regional Planning Commission may require additional or stricter design standards than those listed in this document.

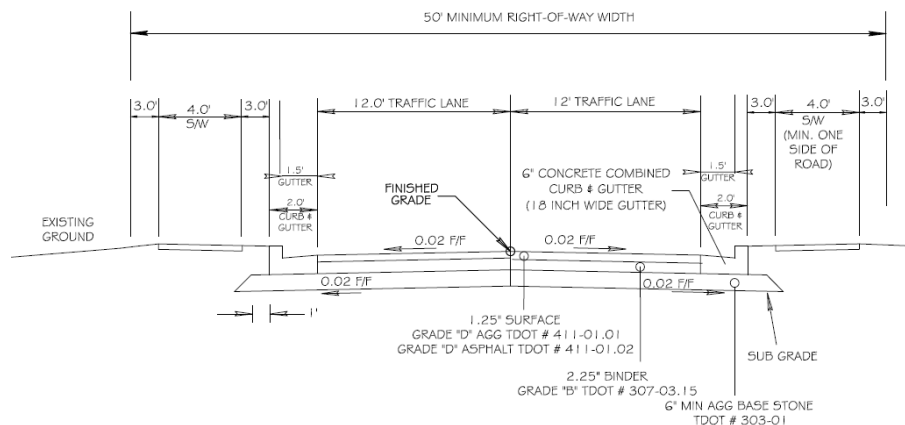
1. Horizontal Curves - where a deflection angle of more than ten (10) degrees in the alignment of a street occurs, radii shall be introduced according to the following standards:
 - a) On Principal Arterials, the minimum allowable horizontal radius of curvature at the centerline of the proposed road right of way shall not be less than nine hundred and twenty (920) feet.
 - b) On Minor Arterials, the minimum allowable horizontal radius of curvature at the centerline of the proposed road right of way shall not be less than nine hundred and twenty (920) feet.
 - c) On Collectors, the minimum allowable horizontal radius of curvature at the centerline of the proposed road right of way shall not be less than sixty (60) feet.
 - d) On Local streets greater than one thousand (1,000) feet in length, the minimum allowable horizontal radius of curvature at the centerline of the proposed road right of way shall not be less than two hundred and fifty (250) feet. On local streets less than one thousand feet in length, the minimum allowable horizontal radius of curvature at the centerline of the proposed road right of way shall not be less than one hundred (100) feet.
2. Vertical Curves - All changes in grade shall be connected by vertical curves of minimum length in feet equal to fifty (50) times the algebraic difference in rates of grade for principal and minor arterials and collector streets, and one-half (1/2) this minimum length for other streets.
3. Grades of Streets -
 - a) The minimum grade of any street or road shall not be less than one-half (1/2) of one percent (1%).
 - b) The maximum grade on Principal Arterial streets shall not exceed six percent (6%).
 - c) The maximum grade on Minor Arterial streets shall not exceed six percent (6%).
 - d) The maximum grade on Collector streets shall not exceed eight percent (8%).
 - e) The maximum grade on Local streets shall not exceed ten percent (10%), however, when special topological or other conditions justify, the Regional Planning Commission on the recommendation of the City's Engineering Department and/or the Hamblen County Road Department may increase the maximum allowable grade on a local street up to twelve percent (12%).
 - f) For the non-continuous leg of a T-intersection of two Local streets, the length of the connecting vertical curve shall not be less than fifteen (15) times the algebraic difference in percents of grade. For all other conditions, including four-way intersections of Local streets, and intersections of Local streets with Collectors or Arterial streets, the length of the connecting vertical curve shall not be less than twenty-five (25) times the algebraic difference in percent of grade.
 - g) The maximum grade in the bulb of the cul-de-sac streets shall not exceed ten percent (10%).
 - h) The maximum cross-slope shall not exceed three percent (3%).
 - i) The maximum grade is to be measured along the proposed centerline of the roadway extended through the center of the cul-de-sac bulb.
 - j) The cross-slope of the cul-de-sac bulb is to be measured on a line 90 degrees to the centerline of the roadway extended to pass through the center of the cul-de-sac bulb.
4. Tangents - Reverse curves in road right of way shall be connected by tangents of not less

than one hundred fifty (150) feet for principal and minor arterials, one hundred (100) feet for collectors, and fifty (50) feet for local/residential streets. Broken back curves in road right of way shall be connected by tangents of not less than one hundred seventy-five (175) feet for collector streets, and not less than one hundred fifty (150) feet for local streets.

5. **Pavement Crown** - The paved surface shall slope downward from the centerline of the roadway outward to the edge of the paved surface on each side at a rate of 0.02 feet per foot on a tangent roadway. For curves on all roads except local streets, the crown cross slope will vary and the Tennessee Department of Transportation design guidelines standards should be used.
6. **Length of Cul-de-sac Streets**
 - a) Temporary: Shall not exceed 1,500 feet in length
 - b) Permanent: Shall not exceed 1,000 feet in length.
7. **Corner Sight Distance**
The minimum corner sight distance at the intersection of any two streets regardless of classification shall be measured from a point on the minor road at least fifteen (15) feet from the edge of the major road pavement and measured from the pavement surface to a height of eye at 3.50 feet on the minor road to a height of object at 4.25 feet above the pavement surface on the major road. The minimum design standards for corner sight distance for various design speeds are shown below in Table 4.1-D1 (AASHTO Design Policies for Highways/Streets):

DESIGN SPEED (MPH)	CORNER INTERSECTION SIGHT DISTANCE (FEET)
60	600
50	500
40	400
30	300
20	250

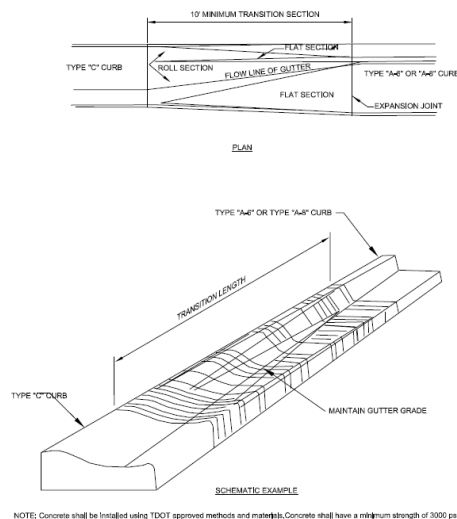
8. **Typical Pavement Section**
Figure 4.1-D1 (below) represents a typical road section for two lane, local roads with curb and gutter. The design engineer should consult with the City Engineer for typical sections for proposed collector and arterial streets or for proposed local roads without curb and gutter.



TYPICAL CURB & GUTTER ROAD SECTION
TWO LANE - LOCAL ROAD
NTS

- a) The typical section shows a cross slope of 2%, but existing conditions could be different. The contractor is to extend the asphalt at the same percent slope as the existing conditions.

- b) This standard asphalt section assumes a subgrade CBR of 9 or greater. If the subgrade has a CBR of less than 8, the City Engineer must approve in writing any designs for asphalt sections placed on subgrades with subgrade densities measuring less than a CBR of 8. The developer must submit CBR's for all roadway subgrades and submit findings to the City Engineer for approval before construction of curbing, base stone, or asphalt surfaces.
- c) According to Section 13-7-301, Tennessee Code Annotated, the Regional Planning Commission cannot require a subdivide, whose proposed subdivision is outside the City of Morristown's corporation boundary but within the City's planning region, to install curbs, gutters, or sidewalks, unless both public water and sewerage systems are to be constructed within eighteen (18) months after the subdivide requests approval of the proposed subdivision. If curb and gutter is required, the following standards apply:
 - i) Curb and gutter shall be installed on both sides of the street.
 - ii) The proposed gutter cross slope is to match the existing and proposed pavement. A 2% cross slope is considered the minimum cross slope allowed. Larger slopes may be needed where drainage issues control.
 - iii) The width of the proposed gutter shall be 18 inches instead of the TDOT standard 24 inches. Figure 4.1-D2 provides the method of transition between the two gutter widths.
 - iv) Where access streets to adjoining properties are provided and they provide no frontage for lots, they shall be curbed to the property line. Where a temporary turnaround is provided, curbs shall end at the transition curve.



NOTE: Concrete shall be installed using TDOT approved methods and materials. Concrete shall have a minimum strength of 3000 psi.

Standard Drawing 07-0003
Curb Transition
NTS

9. General Design Standards for Intersections, Street Offsets, and Radii at Intersections:

- a.) Angle of Intersection: Street intersections shall be as nearly at right angles as possible, and no intersection shall be at an angle of less than sixty (60) degrees.
- b.) Radii of Intersection: Property line radii at street intersections shall not be less than the values shown in the next two tables. Whenever necessary to permit the construction of a curb having a desirable radius without curtailing the sidewalk at a street corner to less than normal width, the property line at such street corner shall be rounded or otherwise set back sufficiently to permit such construction.

Table 4.1-E1 Radii of Property Lines and Curbs at Intersections in Residential and Professional Office Zones:

Corner (Degrees)	Angle	Minimum Curb And Property Line Radius (Feet)
Between 60 and 90		25
Greater than 90		75

Table 4.1-E2 Radii of Property Lines and Curbs at Intersections in Commercial and Industrial Zones:

Corner (Degrees)	Angle	Minimum Curb And Property Line Radius (Feet)
60 – 120		75

- c.) Street Offsets - The intersection of streets shall be spaced in accordance with the specifications of the City of Morristown Engineering Department. The minimum spacing between intersections is based on the street classification of the road between both intersections, as follows and is measured from centerline to centerline:

- a) Local: 165 feet separation
- b) Collector: 300 feet separation
- c) Arterials: 400 feet separation

10. Other Street and Road Specifications:

- a.) Street Names: Streets which are in alignment with existing streets shall bear the name of the existing streets. Street names shall not duplicate or closely approximate the names of existing streets, be given names that sound the same as existing streets (i.e. Pierce and Pearce), within the local zip code region or as defined by the appointed representative of the Hamblen County E-911 service area responsible for street addressing. The number of characters, including spaces, should not exceed twenty (20). Suffixes for street names may include Street, Avenue, Drive, Way, Lane, Place, Court, Boulevard, Parkway, Crossing, Glen, Green, Path, Trail, Terrace, Trace, Square, Point, Loop, or Circle, as appropriate. The Regional Planning Commission has the sole authority in renaming existing streets based on recommendations by City staff and/or Emergency Services.
- b.) Street Lights: Decorative, ornamental streetlights, if desired, shall be purchased by the developer or owner of the subdivision. The Power Utility Provider, or other appropriate utility agency, may design and/or approve and/or install the street lights in accordance with the Power Utility provider, or other appropriate utility agency, specifications.
- c.) Reserve Strips: Reserve strips controlling access to streets or utilities shall be prohibited.
- d.) Permanent Easements: Permanent Easements may be used for access within Planned Developments, Condominium Projects, and Apartment Complexes. Unless stated specifically different within a particular zoning district, the easements shall be a minimum of fifty feet (50') in width, private streets within the permanent easement shall have the same design and construction standards as public streets, and be inspected by the City Engineering Department or Public Works Department or County Road Department as appropriate.

- e.) Flood Elevation: Streets that are classified as local streets and located within a Flood Hazard area shall be constructed at least one (1) foot above the identified 100-year flood elevation for their entire length.
- f.) Limited Access Highway: Access by driveways onto limited access highways shall be prohibited. Public streets, frontage roads, or other means onto streets classified by the Regional Planning Commission as "Limited Access" shall be restricted to distances of at least five hundred (500) feet apart or as otherwise approved by the Regional Planning Commission.
- g.) Traffic Control Devices: shall be designed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). Subdivisions that increase traffic flow into existing or proposed street intersections and warrant traffic control devices shall be installed by the City of Morristown or the Hamblen County Road Department, and the subdivide shall pay full cost for any and all MUTCD items and required intersection improvements.

4.2 BLOCKS

The design of blocks in regard to length, width, and shape should reflect adequate provision for building sites, needs to access and circulation, and limitations created by topographic features.

A. Length

Blocks shall be no less than five hundred (500) feet in length, nor more than fifteen hundred (1500) feet in length, except as the Regional Planning Commission considers necessary to secure efficient use of land, or desired features of street pattern. In cases where the proposed blocks are eight hundred (800) feet or more in length, the Regional Planning Commission may require one or more public cross-walks of at least ten (10) feet in width to extend entirely across the block and at locations deemed necessary.

B. Width

Blocks shall be wide enough to provide two (2) tiers of lots minimum depth except where abutting or adjacent to marginal access roads and major streets, or prevented by topographical conditions or size of the property.

4.3 LOTS

Land for subdivision purposes shall be so selected as to provide sound building sites on suitable lots. The design and preparation of lots shall be undertaken, and the approval of such lots shall be based on the following standards:

A. 100-Year Flood-Free Building Site

Each lot in a subdivision shall contain a building site no less than one (1) foot above the 100-year base flood elevation outside of the limits of any existing easement and/or building setback lines as required by any applicable regulations. Building sites and sites for drain fields shall not be traversed by water and/or drainage courses and ditches.

B. Lot Arrangement

Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines. The shape and orientation of lots shall be such as the Regional Planning Commission deems appropriate for the type of development and use contemplated.

C. Conformance to Zoning

Minimum requirements for lot size and setback requirements shall conform to those established under any zoning ordinance in effect.

D. Commercial or Industrial Properties

Size of properties reserved or laid out for commercial or industrial properties shall be adequate to provide for the off-street service, traffic access and circulation, and parking facilities required by the type of use and development contemplated. Platting of individual lots should be avoided in favor of an overall design of the land to be used for such purposes.

E. Building Setback Lines

The minimum depth of building setback lines shall conform to those established under the applicable zoning classification. The building setback lines shall be shown on the plat and noted to refer to zoning designations. Front setback requirements shall apply to all sides adjacent to a public right of way (for example: corner lots).

F. Double Frontage and Reverse Frontage Lots

Double frontage lots may be employed to prevent excessive vehicular driveway access to streets, or to separate residential areas from other areas of conflicting land use or traffic use.

G. Lot Shape

Excessive depth in relation to width or very irregular shaped lots shall not be permitted. Corner lots shall be sufficiently wider or larger to permit the building setback lines within a particular zoning district.

H. Reservations and Dedications on Tract

The accurate outline of all property which is either offered for dedication to the public use or which is reserved by covenant in the deeds for the common use of the property owners in the subdivision shall be shown on the plat with the purpose printed thereon.

I. Lot Numbers and Block Numbers

Lot numbers shall be in numerical order. Block numbers may be assigned by the City of Morristown Planning Department staff or other appropriate agency.

J. Minimum Lot Width

Newly created lots shall have a minimum width of fifty (50) feet along a public right of way and shall provide for the minimum building setback widths as established under the applicable zoning classification.

SECTION 5

MINIMUM STANDARDS OF DESIGN FOR SUBDIVISION CONSTRUCTION PLANS APPROVAL

These standards for the design and construction of streets and utilities are established to ensure that all proposed subdivisions are provided with adequate, safe, and sufficient services.

5.1 STREET AND ROAD CONSTRUCTION

A. Street Plans

The developer shall provide street construction plans for approval by the City Engineer and Director of Public Works or County Road Superintendent. These plans will show plans and profiles of all streets (vertical and horizontal alignments), typical cross sections, natural and finished grades, vertical curves, horizontal curves, tangents, grades at intersections, angle of intersection, property line radii, street offsets, and sidewalk width and position. Plans must be approved prior to street construction. The City Engineer may require a Traffic Impact Analysis based on current policy by the City of Morristown.

Street Construction Plan(s) shall include the following:

1. Plan and profile(s) of proposed streets plotted on plan and profile sheets to a minimum scale of one inch equals fifty feet (1" = 50') horizontal, and one inch equals five feet (1" = 5') vertical.
2. Plan section including the street and right of way plotted to the proper scale with stationing shown, which should match that of the profile as nearly as possible on the plan sheet.
3. Typical roadway sections, as appropriate.
4. Profile section should include the proposed centerline finish grade profile, in addition to the existing centerline profile.
5. Where conventional sections are used, the stabilization required for the roadside ditches, including the linear extent and type of stabilization required, should be shown.
6. All vertical control points on or pertaining to the proposed center line profile such as P.V.C., P.V.I., P.V.T., all low points, street intersections, all percent grade and vertical curve data.
7. All horizontal control points on or pertaining to the proposed center line alignment, such as P.C., P.I., P.T., radii, and angle of intersections.
8. Existing and proposed utilities shall be shown on the plan and profile(s).

B. Centerline

The centerline of proposed streets that intersect existing roadways shall be marked or flagged in the right of way of the existing roadway prior to preliminary approval. Centerline of proposed streets shall be located in the center of the proposed right of way unless otherwise approved by the City Engineer.

5.2 GRADING PLANS

The subdivide shall grade or fill horizontally all streets, roads, and alleys to the full width of base construction. Due to special topographical conditions, deviation from the above will be allowed only with specific approval of the Regional Planning Commission as shown on street cross-sections.

Grading Plan(s) shall include, at a minimum, the following:

1. All cut and fill areas indicated as such, with the limits.
2. Existing and proposed contours at a maximum of two-foot (2') intervals. Contours based on GIS data are not permitted.
3. Existing and proposed utilities in background of drawing.

4. Any proposed swale ditches, channel changes, or improvements, with typical section and length of change indicated.
5. Proposed specifications shown on plan or in specification format.
6. Final stabilization measures proposed for all disturbed areas on the property.
7. Areas with slopes 3:1 or greater shall be stabilized with sod, erosion control blanket, riprap per manufacturer's specifications, or by other methods approved by the City. The plan shall show stabilization measures for each ditch.

5.3 EROSION & SEDIMENT CONTROL

Erosion and sediment control plan(s) shall be prepared in accordance with the Land Disturbance Ordinance of the City of Morristown.

5.4 CURBS & GUTTERS

Concrete curbs and gutters shall be installed on both sides of all new streets, except in areas where a proposed subdivision is to be developed in the adopted urban growth boundary where water and/or sewer services will not be serving the area within eighteen (18) months after the subdivision requests approval of the proposed subdivision. The curbs shall be backfilled and the fill shall slope into the storm drainage system. Where access streets to adjoining properties are provided and they provide no frontage for lots, they shall be curbed to the property line. Where a temporary turnaround is provided, curbs shall end at the transition curve.

5.5 SIDEWALKS

A. Sidewalks shall be required if one of the following applies: (A-11/ 9/ 2010)

1. Any development located along a corridor or pedestrian district as identified within the master sidewalk plan shall provide sidewalks in accordance with the current development standards of the City Engineer.
2. Any development over ten acres must provide a plan illustrating pedestrian movement across the site.
3. Any development less than ten acres and located outside of a pedestrian district or corridor as identified on the Master Sidewalk Plan or granted a variance from constructing the sidewalks shall submit a pedestrian fee as follows:

- i. 0 to 1 acre --- \$ 500.00
- ii. 1 to 2 acres -- \$1,000.00
- iii. 2 to 3 acres -- \$1,500.00
- iv. 3 to 4 acres -- \$2,000.00
- v. 4 to 5 acres -- \$2,500.00
- vi. 5 to 6 acres -- \$3,000.00
- vii. 6 to 7 acres -- \$3,500.00
- viii. 7 to 8 acres -- \$4,000.00
- ix. 8 to 9 acres -- \$4,500.00
- x. 9 to 10 acres- \$5,000.00

B. All sidewalks shall comply with the following:

1. Sidewalks shall be constructed of concrete having a 28-day compression strength of 3,000 PSI and shall be located in public rights of way adjoining property lines. Sidewalks shall be a minimum of four (4) inches thick with a four (4) inch compacted stone leveling base.

2. Concrete placement, curing, and the type and location of joints shall comply with American Concrete Institute (ACI) standards.
3. Handicap accessible ramps are required at all intersections.
4. In a dead end street, sidewalks shall end at the transition curve of the cul-de-sac.
5. Sidewalks measuring four (4) feet in width are required on one side of all new local streets, and five (5) feet in width on all other streets requiring sidewalks.
6. The developer shall install, or may post a bond as with all other subdivision improvements, all required sidewalks and/or greenways (if shown on the greenway master plan and designed to its specifications) within the platted subdivision upon eighty percent (80%) of the residences or buildings for construction within the platted subdivision having been completed and certificates of occupancy have been issued by the City, or the City of Morristown City Council requests that the sidewalk construction be done, or eighteen (18) months after the street binder layer has been placed.
7. In cases of topographical limitations or other physiographical constraints, a variance may be requested in accordance with Section 1.6 "General Provisions" of these regulations. If such a variance is given, the estimated dollar amount of the construction of the sidewalks receiving the variance shall be donated to the city for use in repairing or building other sidewalks.

5.6 STREET TREES

Street trees are a protection against excessive heat and glare and enhance the attractiveness and value of abutting property.

Trees should be planted along the development side of all streets where suitable street trees do not exist. The trees should be spaced fifty (50) feet apart, and outside of any utility easements. Trees should be located at least twenty-five (25) feet from the intersection of street right of way lines. Trees will not be required where the sight distance triangle is obstructed.

All trees should be watered and maintained until suitable maintenance is provided by occupants of properties.

5.7 STREET SIGNS & TRAFFIC CONTROL SIGNS

Street signs and traffic control signs shall be provided by the Morristown Department of Public Works and purchased by the subdivide for subdivisions within the City. The installation of these signs shall be coordinated with the Public Works Street Division. All street signs shall be in accordance with MUTCD regulations. Installation and maintenance of such signs prior to acceptance of the street for City of Morristown maintenance shall be the responsibility of the subdivide. It shall be the responsibility of the subdivide to provide street signs as designated by the County Road Superintendent for subdivisions developed within the Planning Region (Urban Growth Boundary).

5.8 STORM DRAINAGE & TREATMENT SYSTEMS

A. Adequate Drainage Systems

1. Adequate drainage systems shall have the hydraulic capacity to accommodate the maximum expected storm water discharge, as described in the following sections, for a specified tributary drainage area and precipitation duration and intensity. Adequate drainage systems shall be

designed to accomplish the following:

- a) Account for both offsite and onsite storm water.
 - b) Maintain natural drainage divides.
 - c) Convey storm water to a stream, channel, natural drainage way, or other existing facility.
 - d) Discharge storm water into the natural drainage way by connecting the drainage way at natural elevations, or by discharging the storm water into an existing facility of sufficient capacity to receive it, or by discharging into an approved (drainage well) sinkhole.
2. Determination of the size and capacity of an adequate drainage system shall take into account the future development of the affected portion of the watershed. The design must not adversely affect adjacent or neighboring properties.
 3. Concrete curb and gutter with storm water drainage systems are required on all public ways.
 4. It is the responsibility of the developer or property owner to pick up or acceptably handle the runoff as it flows onto his property from the watershed above, and transport it through his property to an adequate outfall. The outfall must be sufficient to receive the runoff without deterioration of the downstream drainage-way.
 5. The Soil Conservation Service (SCS) Method, as presented in TR-55, is the required method for determining runoff and designing stormwater management systems within the City of Morristown and its urban growth boundary. The Rational Method or any other reputable, established method can be used for determining peak flows for sizing drainage channels and piping systems.
 6. In areas where there are known drainage problems, no future land use changes which will impact the runoff peak rate, timing, and volume will be allowed until it is convincingly established that no adverse onsite and offsite impacts will result.
 7. A combination of storage and controlled release of storm water runoff shall be required for all development located in areas where there are inadequate man-made and/or natural drainage channels to accommodate the projected runoff. Alternative methods or proposals for accommodating the projected runoff may be submitted to the City Engineer and/or County Road Superintendent for review and approval.
 8. The peak release rate of storm water from any development shall not exceed the storm water runoff rate from the area in its existing state for the 2, 5, 10, and 25 (and 100-year if applicable) year return period storms. The carrying capacities of the channels/ storm drainage systems immediately downstream shall be considered in determining the amount of the release. In watersheds with recognized drainage problems, release rates may be required to be limited to less than what was calculated for the pre-developed rate. Refer to the Post-Construction Water Quality Management Ordinance for specific requirements.
 9. The City of Morristown encourages the preservation and conservation of wetlands as a means of reducing adverse impacts from storm drainage and sedimentation. Furthermore, any proposed development involving wetlands shall comply with the provisions of Section 404 of the Clean Water Act, and the Corps of Engineers Regulations 33CFR330 and 33CFR323, and/or any Tennessee Department of Environment and Conservation regulations.
 10. Storm sewers shall be piped completely from the street to the nearest natural drainage ditch with appropriate easements provided. However, open ditches or swales along the side property lines may be permitted if the hydraulic calculations show that a proposed ditch lining will prevent ponding or erosion in channel. Beginning at the rear lot setback limits open swales or ditches for conveying street drainage to a natural drainage ditch are acceptable. The design consultant shall submit two

(2) copies of an impact report, which outlines the downstream path and impact that the drainage will have on projects as located outside the area of development. Rip-rap will not generally be permitted except as approved by the City Engineer.

11. Water quality management facilities must be installed and maintained as described in the approved Water Quality Management Plan (WQMP). Permanent easements must be provided as required by the Post-Construction Water Quality Management Ordinance.

B. Storm Drainage Plan(s)

Storm drainage plan(s) shall include, at a minimum, the following:

1. A complete plan of the proposed development at a scale no less than one inch equals fifty feet (1" = 50'). This plan is to include existing and proposed contours at intervals no greater than 2' (two feet) (SCM to be used exclusively). Contours shall extend to the centerline of all roads bordering the site. Where drainage ultimately enters the groundwater via a sinkhole or injection well, the drainage area tributary to the sinkhole or injection well shall be delineated.
2. Existing and proposed buildings on the property.
3. Existing and proposed impervious surfaces. The number of ERU's (Equivalent Residential Units) shall be calculated as 1 ERU = 2,400 SF of impervious surface and noted on the plans. Impervious area is defined in the Stormwater Utility Service Charges Ordinance and includes pavement, concrete, gravel, roofs, patios, decks, areas of unvegetated soils, and all other areas covered with impervious materials.
4. Proposed and existing drainage structures, including inlets, catch basins, junction boxes, culverts, cross drains, headwalls, and outlet facilities, with size, type, slope, invert elevations, and quantity indicated.
5. Existing and proposed water quality management facilities as described in the approved Water Quality Management Plan, along with required easements.
6. Hydrologic and hydraulic calculations for appropriate design conditions and facilities.
7. Detention pond control structure details. If the pond is overtopped by 100-year storm, include the emergency overflow.
8. Any proposed swale ditches, channel changes, or improvements, with typical section, proposed lining, and length of change indicated.
9. Any high water or flood lines, either calculated or observed in the vicinity of the proposed development, and the source of said line or elevation indicated. If no high water or flood lines are present at the property, include a statement of this effect on the plans.
10. All fill areas indicated as such, with the limits and elevation indicated.
11. At least one benchmark located, with the proper elevation indicated (SCM to be used exclusively).
12. The location and size of the two drainage structures immediately downstream of the proposed development. This may be shown on a location map with a scale no less than one inch equals two thousand feet (1" = 2000').
13. Drainage arrows indicating the existing and proposed direction of runoff throughout the plan.

14. Invert and top of grate elevations on all catch basins and inlets in addition to flow line elevations, stations, and percent grades of all cross drains and pipe between inlets and catch basins.
15. Floodplain areas require the following information: existing and proposed flood plain and floodway boundaries along with flood plain elevations, cut and fill cross sections with quantity calculations, and lowest floor elevations for buildings in the flood plain. Hydraulic calculations should be submitted, as appropriate.
16. Temporary erosion and sediment control measures to be implemented during construction as required by the Land Disturbance Ordinance.
17. Final stabilization measures proposed for all disturbed areas on the property. Areas with slopes 3:1 or greater shall be stabilized with sod, soil erosion control blanket, riprap per manufacturer's specifications, or by other methods approved by the City. The plan shall show stabilization measures for each ditch.
18. Where special structures such as box culverts, bridges, or junction boxes are proposed, detail plans showing dimensions, reinforcement, spacing, sections, elevations, and other pertinent information shall be submitted.
19. Plans and calculations shall be designed and sealed by a registered engineer, and/or land surveyor as per Tennessee State Law. All plans requiring engineering calculations shall be signed and sealed by a registered engineer.

Omission of any of the above requirements for detailed plans and calculations shall render the application incomplete, and it will be returned to the applicant, or his engineer, for additional information.

C. Minor Systems (Non-regulated Waterways)

1. The design of the minor storm drainage system shall be based on a storm frequency of 25 years. This criterion shall be applied to both closed conduit and open channel systems. However, if the 25 year design flow for an open channel system is greater than 100 cubic feet per second (cfs), then the open or closed system shall be capable of passing the 100-year design flow within the drainage easement. Systems relying on sinkholes or injection wells for discharge shall be capable of passing the 100-year design flow within the drainage easement.
2. The following general guidelines shall be observed in the design of the minor system:
 - a) Design surface runoff across lots shall not have erosive velocities.
 - b) Quantities of surface runoff greater than 4 cfs that flow through lots shall be collected and conveyed in a system of open channels, closed conduits, or a combination of both.
 - c) Lots should generally be graded in such a manner that surface runoff does not cross more than three lots before it is collected in a system of open channels, closed conduits, or a combination of both.

Design flows shall be determined by the methods identified in this manual. Calculations shall be sealed by an Engineer and submitted with the drainage plan.

D. Major Systems (Local, State and/or Federally Regulated Waterways)

1. Wherever possible, natural waterways serving the major system should remain undisturbed, with proposed development situated wisely accordingly. However, due to the insufficient capacity of most

natural drains, improvements to the channel may be necessary to properly utilize the adjacent property. Improvements to natural open channels that are to function primarily as the major system shall be designed to pass the 100-year design flow without damage to the channel. Man-made channels designed to function as the major system (trunk line system) shall be capable of carrying a 100-year design flow. Where man-made channels are necessary, the channels should be located as far away from buildings or structures as possible and preferably in established greenbelts.

2. The onsite major storm drainage system for most developments is the natural backup system and consists of the less obvious drainage ways. Ideally, this major system should provide drainage relief such that no building will be flooded with a 100-year design flow even if the minor system capacity is exceeded. The 100-year frequency storm shall be used to compute runoff for the design of the onsite major drainage system. This system shall be designed to provide relief for flow in excess of the 25-year design flow.
3. The following guidelines pertain to design of the onsite major drainage system:
 - a) Areas should be graded in such a manner or buildings located or constructed in such a manner that if the capacity of the minor system is exceeded, no building will be flooded by the design flow.
 - b) Critical areas to consider are sumps, relatively flat areas, and areas where buildings are located below street or parking lots.
 - c) The 100-year frequency storm shall be used to compute runoff for the major drainage system.
 - d) In general, the minor storm drainage system should not be oversized as a basis for providing major system capacity. However, the minor system, overland relief swales, or surface storage should be designed so that no building will be damaged by flooding.
 - e) The major drainage system should be in the form of area grading or the location and construction of buildings in such a manner that overland relief swales or surface storage will provide adequate flood protection.
4. The major drainage system should be evident on the drainage plan, including overland relief swales and areas that may be affected by surface storage for a 100-year design storm. Calculations performed for major system design should be sealed by an Engineer and submitted with the drainage plan.

E. Municipal Flood Plain

Subdivisions shall be reviewed to determine whether the development will be reasonably safe from flooding. If a subdivision is in a flood prone area, it shall be reviewed subject to "Floodway Regulations of the Zoning Ordinance.

F. Open Channels

1. Channel Capacity:

Open channel capacity shall be determined by Mannings's equation. Appropriate Manning's n values as found in a classic text such as Open Channel Hydraulics by Chow shall be utilized for design and are subject to approval by the City of Morristown.

2. Lined Channels:

- a) Open channels shall be designed to limit the flow velocity to the maximum allowable velocity for the selected lining. Acceptable lining materials must be placed in accordance with applicable subdivision regulations. Approval of lining materials is subject to review by the City of Morristown.

- b) Channel lining shall be required when the design velocity exceeds the allowable, non-erosive velocity for a given channel reach and no other erosion control measures provide adequate protection. Allowable, non-erosive velocities for various soil types are presented in Table 5.9-G1.
- c) In general, riprap will not be allowed within the right-of-way unless specifically approved by the City Engineer.

G. Grassed Channels

The design of grassed channels shall consider the variable degree of retardant generated by different types of cover (See Table 5.9-G2). Temporary erosion control shall be utilized during non-growing seasons and during grass cover establishment. The engineer shall note on the drawings or in the specifications that "All grassed channels must be in a well-stabilized condition and show no sign of erosion at the time of final acceptance by the maintaining authority."

Table 5.9-G1
MAXIMUM VELOCITIES FOR
COMPARING LINING MATERIALS

MAXIMUM VELOCITY MATERIAL:	FEET/SECOND
Bare soil	
Silt or fine sand	1.50
Sandy loam	1.75
Siltloam	2.00
Stiff clay	3.75
Sod	4.0
Lapped sod	5.5
Vegetation	Use Table 5.9-G2
Rigid	10

Higher velocities may be acceptable for rigid linings if appropriate protection is provided.

Table 5.9-G2
MAXIMUM VELOCITIES FOR VEGETATIVE CHANNEL LININGS

		Maximum:
<u>Vegetation Type</u>	<u>Slope Range (%)</u>	<u>Velocity (feet per second)</u>
Bermuda grass	0-5	6
	5-10	5
Kentucky bluegrass	0-5	5
Buffalo grass	5-10	4
Grass mixture	0-5	4
	5-10	3
Lespedeza sericea	0-5	2.5
Alfalfa		
Annuals	0-5	2.5
Based on erosive soils		
Reference: USDA, TP-61 (1947)		

H. Easement Width

All open channels shall be located within the right of way of a drainage easement. Minimum easement width shall be determined from Table 5.9-H1. Easements must remain free of fences or any other structures in order to provide access for maintenance.

Table 5.9-H1	
MINIMUM EASEMENT WIDTH FOR OPEN CHANNELS	
<u>Top Width of Channel</u>	<u>Easement Width</u>
Less than 10 feet	15 feet greater than the top width of channel, with minimum of 10 feet on one side
10 - 20 feet	20 feet greater than top width of channel, with minimum of 15 feet on one side
Greater than 20 feet	25 feet greater than top width of channel, with minimum of 20 feet on one side

I. Storm Drains

Roadway drainage systems are to be designed to accommodate a storm with a twenty-five (25) year return frequency. Conduit materials shall be gasketed concrete pipe when proposed within the right-of-way. The gasketed concrete pipe shall extend from the right-of-way to the first storm structure at the site. The minimum size pipe shall be eighteen (18) inches in diameter unless approved in writing by the City Engineer or the County Road Superintendent.

1. Conduit Capacity:

Closed conduits shall be designed for the total flow intercepted by the inlets during the design storm event.

2. Pressure Flow:

Storm drain systems should generally be designed as non-pressure systems. However, pressure flow systems if coordinated with the County Road Superintendent and/or the City Engineer during the preliminary design phase, may be allowed. The hydraulic gradient for pressure flow systems shall not exceed the following criteria:

- a) An elevation greater than one foot below the established ground surface, or
- b) More than five feet above the crown of the conduit.

3. Easement Width:

Minimum allowable easement width for storm drains shall be determined from Table 5.9-I 1 or as required by the City of Morristown.

Table 5.9-I 1

MINIMUM EASEMENT WIDTH FOR STORM DRAINS

<u>Pipe Size (Maximum)</u>	<u>Depth To Invert</u>	<u>Width of Drainage Easement</u>
18 inches	3.5 feet	15 feet
24 inches	5.0 feet	20 feet
36 inches	6.0 feet	24 feet
54 inches	7.0 feet	30 feet
72 inches	9.0 feet	36 feet

NOTES: 1. For depths greater than shown, add two feet (2.0') for each additional foot to the invert.
 2. For larger pipe sizes and/or multiple lines of pipe – easement width shall be as determined by the City Engineer and/or County Road Superintendent.

4. Inlets:

TDOT standard drawings D-PB-1, D-MH-4, and D-CB-# (for pre-cast structures only) should be specified for construction of drainage structures and piping. Any other proposed inlets must be approved in writing by the City Engineer.

5. Culverts:

The design flow for culverts shall be based on the following return frequencies:

- a) 50-year for residential collector and commercial road crossings or as directed by the City Engineer or the County Road Superintendent.
- b) 25-year for residential roads and crossings.

Note: In addition, building elevations shall be checked for flooding caused by the 100-year, 24-hour storm.

6. Outlet Protection:

The design discharge at the outlet of drainage systems shall not result in velocities that equal or exceed the erosive velocity of the receiving channel, unless energy dissipation and erosion protection measures are placed at the outlet. Energy dissipation and erosion control devices shall have no overfall at the terminal end and shall discharge onto a stable section. The terminal section shall be considered stable if the terminal section design velocity is less than the erosive velocity.

7. Bridges:

All bridges with spans of 20 feet or greater shall be designed for the 100-year, 24-hour storm event. The design flow shall consider runoff from the total tributary area and will require appropriate calculations. Bridges may require additional approval from TDEC, TVA, US Army Corps of Engineers, FEMA, and/or other regulatory agencies.

8. Stormwater Detention/Retention:

Storm water detention is mandated for all new subdivision developments unless waived in writing by the City Engineer or County Road Superintendent. All hydrologic and hydraulic computations utilized in the design of storm water detention facilities must be prepared and sealed by a registered engineer proficient in the field of hydrology and hydraulics and licensed in the State of Tennessee. The required hydrologic and hydraulic computations shall be in accordance with the procedures outlined in the United States Department of Agriculture, Soil Conservation Service Technical Release No. 55 entitled "Urban Hydrology for Small Watersheds", and all subsequent revisions thereto, as modified by the City of Morristown to represent local conditions. Other computational procedures may be employed if approved by the City Engineer.

a) Release Rate:

The release rate from any detention facility should be less than or equal to that existing of the site prior to the proposed development for the 2, 5, 10, and 25-year storms, with emergency overflow capable of handling the 100-year discharge except where waived or altered by the Morristown Engineering Department. Adequate alternate drainage must be provided to accommodate major storm flows. Detention systems must be constructed during the first phase of major developments to eliminate damage to adjacent properties during construction. If siltation has occurred, detention systems must be restored to their design dimensions after construction is complete and certified as part of the as-built submittal.

b) Detention/ Retention Volume:

The required detention volume shall be that volume necessary to attenuate the post-development peak discharge to a level not to exceed the pre-development peak discharge. This volume may be minimized by careful attention to outlet structure design. Outlet control structures shall be designed to limit the outflow to the pre-developed peak for each of the return storms up to and including the design storm (25 years unless the pond is located on a major drainage channel, in which case the design would be for a 100 year storm).

- i. In most cases, this will require multiple outlets or the use of some type of variable opening(s) such as multi-staged discharge outlet control box(es), or "V-notched" weir.
- ii. A minimum pipe size of eighteen (18) inches shall exit the outlet control box to the desired outfall point.
- iii. All detention ponds shall have an emergency spillway designed to pass the 100-year runoff if the storage capacity is exceeded; larger ponds which fall under the purview of the Safe Dams Act must comply with those regulations. Emergency spillways shall be constructed in virgin soil material or may be incorporated into the outlet control structure's principal spillway.
- iv. All detention ponds with over 1.0 acre-feet storage capacity shall have a minimum of one (1) foot of "freeboard".
- v. Detention ponds shall have side slopes of 2:1 or flatter; for ponds in areas accessible to small children and more than five (5) feet in depth, consideration should be given toward security fencing.
- vi. Any subdivider/developer who uses the parking area for detention storage capacity shall clearly identify the limits and depth of expected detention pool.
- vii. The discharge from any stormwater control facility shall be directed into the natural surface watercourse or drainageway that existed prior to development. Stormwater drainage may not be redirected from one natural watershed to another, nor shall stormwater flows be discharged into a natural depression or sinkhole without written approval by the City Engineer and/or County Road Superintendent and TDEC.

c) Retention Ponds:

As a minimum, these shall provide the required storage capacity to accommodate the differential volume of runoff caused by the development and shall have an emergency spillway capable of passing the 100-year flood. Slope, security and maintenance requirements are the same as for detention ponds.

d) Drawdown:

Detention storage volume shall be drained within 72 hours. This requirement includes that volume above permanent pool in retention systems. Drawdown may be accomplished by a small orifice or notched weir. Other methods may be approved subject to the City Engineer and/or County Road Superintendent review.

e) Maintenance:

Care must be taken to ensure that any required detention facilities do not become nuisances or health hazards. Detention facilities should be designed to require minimal maintenance, and maintenance responsibility must be clearly stated on the plans.

All detention facilities located in residential developments shall be within storm drainage easements and shall be maintained by the property owner or home owners' association. Detention facilities located in condominium developments, apartment or townhouse complexes, single family PUDs, industrial, commercial, or institutional developments shall be within public storm drainage easements and maintained by the property owner or homeowners association. A maintenance agreement must be executed before the Final Plat is approved. Refer to City of Morristown's Stormwater Management/BMP Facilities Maintenance Agreement

J. Sinkholes and Injection Wells

1. All drainage systems discharging to sinkholes or injection wells shall be designed using the 100-year storm for the critical duration of the watershed tributary to the sinkhole or injection well. A geologic investigation and report is required, along with a demonstration that development will not occur within the area flooded by the 100-year storm and that all state and federal permitting requirements are complied with.
2. An erosion control plan shall identify the erosion control practices and sediment trapping facilities which are appropriate for the site conditions in question. In addition, the appropriate schedule of implementation shall be identified. Particular attention is required for concentrated storm water flows. Either concentrated storm water flows shall be avoided or the conveyance system shall be protected sufficiently to prevent significant erosion. Sediment trapping devices are generally required at all points where storm water leaves a site laden with sediment. The plan shall identify permanent storm water conveyance structures, final stabilized conditions of the site, provision for removing temporary control measures stabilization of the site where temporary measures are removed, and maintenance requirements for any permanent measures.
3. The following Sinkhole and Injection Well Plan information or approval from the appropriate regulating agency must be provided prior to the alteration or increase of the natural drainage for watershed discharging to such features as sinkholes and injection wells.
 - a) Proposed onsite and offsite drainage channels that are tributary to a sinkhole throat or injection well inlet shall be delineated, along with appropriate hydraulic calculations to define the existing and altered (if appropriate) 100-year flood plain and to confirm that offsite flooding will not be

increased.

- b) Detailed contours are to be shown for all sinkholes that are to receive storm water runoff from the site. These contours are to have a maximum interval of 2 feet and are to be verified by field surveys.
 - c) A geologic investigation of all sinkholes receiving storm water runoff from the site shall be performed. The report from this investigation shall be signed and sealed by a registered professional, licensed in the State of Tennessee and experienced in geology and groundwater hydrology and shall contain the following:
 - i. Location and nature of aquifers.
 - ii. Potential for siltation problems.
 - iii. Foundation problems that may be expected around sinkholes.
 - iv. Details of drainage structures to be built in sinkholes.
 - v. Any other factors relevant to the design of drainage from sinkholes.
 - vi. Plans showing the 100-year flood plain. This flood plain shall be designated as a drainage easement on the final subdivision plat.
 - viii. Details of plan for grading and clearing of vegetation within the 100-year flood plain.
- 3. Compliance with any and all conditions that may be required by the federal government or the State of Tennessee shall be documented.
 - 4. The Tennessee Division of Ground Water is the primary regulatory agency for sinkholes and injection wells. Drainage into a sinkhole may require a permit for a Class V well under rules for Underground Injection Control (UIC).
 - 5. Demonstration that development will not occur within the area flooded by the 100-year flood. The 100-year elevation may be lowered by construction of a detention pond. Calculations that document a lowering of the 100-year flood elevation shall be based on the 100-year, 24-hour storm using an appropriate safety factor for discharge into the sinkhole.

K. Erosion Protection and Sediment Control

Erosion protection and sediment control measures shall be installed and maintained during and after construction in accordance with the approved site plan and the City's Land Disturbance Ordinance.

L. Cut and Fill Slopes

Cut and fill slopes shall be designed and constructed in a manner which will minimize erosion. Consideration must be given to the length and steepness of the slope, the soil type, upslope drainage area, groundwater conditions, and other applicable factors. As a minimum, all slopes greater than 3 to 1 shall be stabilized with sod, erosion control blanket, riprap per manufacturer's specifications, or other method approved by the Engineering and/or the County Highway Departments.

5.9 DRIVEWAY CULVERTS

Driveway culverts shall be a minimum of eighteen (18) inches Inside Diameter (ID) and a minimum length of twenty (20) feet or as indicated on the Driveway Permit required for connection to a public street and shall be made of the materials indicated on said permit issued by the City. Polyvinyl Chloride (PVC), High Density Polyethylene (HDPE) or any other plastic pipe shall not be used as a driveway culvert. Driveway culvert material shall be Reinforced Concrete Pipe (RCP), Corrugated Metal Pipe (CMP), or other material approved by the City Engineer.

Headwalls shall be required at both ends of the pipe in all cases. On arterial streets and Tennessee State designated roads, safety end-walls (TDOT D-PE-6 series) are required.

5.10 STORM DRAINS IN CITY RIGHT-OF-WAY

- A. All cross drains shall be a minimum of eighteen (18) inches ID unless approved in writing by the City Engineer or County Road Superintendent, as applicable, and shall consist of gasketed Reinforced Concrete Pipe (RCP), as approved by TDOT. All RCP pipe shall be installed to the minimum standards of the Morristown Engineering or Hamblen County Highway Departments.
- B. Corrugated Metal, Steel, PVC, HDPE or Plastic pipe shall not be used without the written approval of the City Engineer or the County Road Superintendent.
- C. Pipes that are smaller than forty-eight (48) inches in diameter shall require a minimum cover of one (1) foot, exclusive of base and paving from top of the pipe to finished subgrade. A minimum cover of two (2) feet is required for pipes forty-eight (48) inches and larger. All pipes shall be built on straight line and grade and shall be laid with the spigot end pointing in the direction of the flow, with the ends fitted with a butyl sealant or mortar and matched to provide tight joints and a smooth uniform invert.
- D. Pipes shall be bedded on a six inch (6") thickness of Class "B" materials and backfilled. Recesses shall be dug in the bedding materials to accommodate the bell. Class "B" bedding shall be Size No. 57 or 67, as shown in Section 903, latest edition of the Standard Specifications for Road and Bridge Construction, Tennessee Department of Transportation. Culverts and storm drains in existing roadways shall be backfilled to the depth of the cut or as directed by the City Engineer and/or the County Road Superintendent. Headwalls shall be required at both ends of the pipe. On arterial streets and Tennessee State designated roadways, safety end-walls approved by TDOT are required.

5.11 UTILITIES IN RIGHTS-OF-WAY OF PROPOSED OR MODIFIED STREETS TO BE DEDICATED TO THE CITY

A. Location of Proposed Utilities

Utilities within the right-of-way of subdivisions shall generally be located as shown below in Figure 5.12-1.

All utility providers shall review the plans as detailed in Section 3.4

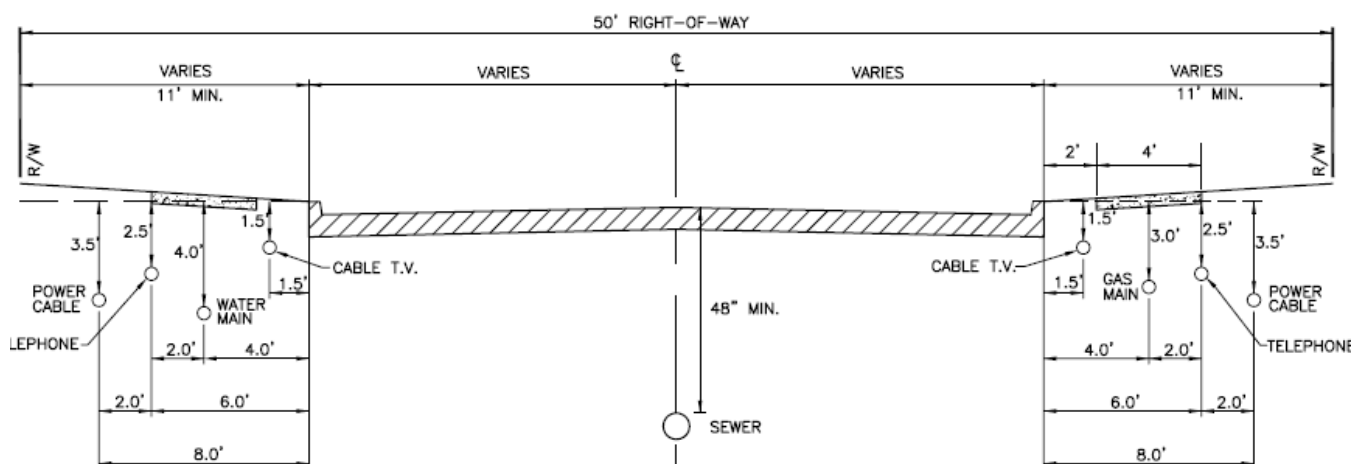


Figure 5.12-1

5.12 SANITARY SEWAGE SYSTEMS

A. Public Sewerage Systems

When the proposed subdivision or development is located within the corporate limits of the City of Morristown, the applicant will be responsible for determining which utility district the development is located and meeting the design and construction criteria for that utility provider. Where applicable, the design shall be in accordance with the City's Master Sewer Plan.

B. Individual Sewerage Systems

When the proposed subdivision or development is not located within two thousand (2,000) feet of a public sewerage system, the subdivider may utilize private subsurface sewage treatment systems (septic tanks) provided the systems meet the standards of the Tennessee Department of Environment and Conservation, Division of Ground Water Protection, Chapter 1200-1-6. The private subsurface sewage treatment system must be located on the lot it serves. The minimum lot size for residential lots shall be twenty thousand (20,000) square feet in area.

When an existing private subsurface sewage treatment system (septic tank) is located on the property being subdivided, the plat shall show the location of the system based on Health Department records, Tennessee Department of Environment and Conservation, Division of Ground Water Protection approval, or it shall be noted on the plat that the location of the subsurface sewage treatment system (septic tank) is unknown.

In the event that individual sewerage systems are approved, and that a public sewerage system extension is later constructed making connection reasonable, the subdivider agrees that future connections to the public sewerage system shall be made at the property owners' sole expense, including any connection fees. This agreement shall be placed on the recorded Final Plat.

C. Package Treatment Plants, STEP, Low Pressure or Vacuum Sewage Collection Systems

In order to provide sufficient and reliable sanitary sewer service, and to help avoid future infrastructure maintenance or replacement costs due to inefficient or remote facilities, the use of "package" or on-site treatment processes are not approved. Low pressure or vacuum sewage collection systems may be used at subdivider's expense if approved by the City Engineer.

5.13 WATER SUPPLY SYSTEMS

It is the responsibility of the developer to contact the appropriate water service provider as part of the submittal process. A set of plans shall be provided by the developer indicating the location of streets, rights of way, lot lines and on grade utilities. This will enable the utility to provide the developer with all service options and information on any aid- to-construction while allowing the utility to begin a system evaluation and service study.

When the subdivision is located within the service area of a water utility district, potable water mains shall be designed and constructed by the subdivider and connected to appropriate utility district's water system.

For fire prevention measures, a fire hydrant shall be required within five hundred (500) feet of the furthest point of any building setback line within any residential district (for properties adjacent to any street), or within two hundred-fifty (250) feet to the furthest point of any building setback line within any commercial or industrial district (for properties adjacent to any street), or as approved by the Fire Marshall.

Each hydrant shall be a pumper hydrant with two (2) 2 ½ connections, and/or a 4 ½ steamer connection that have National Standard Threads, or commonly called Fire Department Threads.

The minimum fire flow shall be 500 gallons per minute, with a minimum water line size of 6 inches for residential areas. In commercial or industrial areas, the minimum water line size is 8 inches. The minimum fire flow within commercial and industrial districts may vary depending on the type of land use and as required by the Fire Marshall.

5.14 ELECTRICAL UTILITIES

A. Plans / Specifications

It is the responsibility of the developer to contact the appropriate electric service provider as part of the submittal process. A set of plans shall be provided by the developer indicating the location of streets, right of way, lot lines and on grade utilities. This will enable the utility to provide the developer with all service options and information on any aid- to-construction while allowing the utility to begin a system evaluation and service study.

B. Primary Distribution

Primary distribution circuits shall be designed by the authorized electric service provider. The installation of underground electrical primary is at the discretion of the utility. If underground primary is requested, the electric service provider may install all or part of the distribution overhead if, in its determination, the underground construction would in any way compromise the economic or electrical integrity of its distribution system. In residential developments, the installation of underground primary is preferred. These installations are subject to aid-to-construction as required by the current policy of the electric service provider. All services in new residential developments are encouraged to be underground. Electric distribution construction shall comply with the National Electric Safety Code (NESC). Electric facilities shall be installed in accordance with the National Electric Code (NEC).

C. Services

All 120/240 volt services in new residential developments shall be underground. Upon application for a building permit, the property owner should contact the electric service provider for information regarding underground policy, fees, and approved service locations. In all cases, underground services shall be in the appropriate conduit at a minimum depth of 36 inches per Morristown City Ordinance 2415.

D. Lighting

Street lighting is provided by the City of Morristown and installed and maintained by the electric service provider. Basic lighting on overhead facilities are provided at no cost to the developer. In underground developments, installation of basic lighting equivalent to those installed in overhead developments is also provided at no cost. If decorative lighting is desired; the fixture and standard may be chosen from an approved list provided by the electric service provider. Decorative lighting will be subject to an aid-to-construction equal to the cost of the decorative lighting minus a credit for the provided basic lighting.

5.15 NATURAL GAS UTILITIES

The local natural gas utility agency carries out the design and construction of the natural gas distribution system.

The developer may be assessed a fee from the gas utility agency for materials and labor.

It shall be the responsibility of the subdivider to inform the Gas Utility agency if he wishes the proposed subdivision to be considered for natural gas service. The provision of the requested service and the fees to be assessed for the service shall be determined by the current operating policies of the gas utility.

5.16 OTHER UTILITIES

All utility services shall be so designed as to conform with all appropriate state, local, and utility agency requirements.

5.17 EASEMENTS

Easements for new or the continuation of existing utilities shall be provided for all subdivisions with the width and other characteristics as required by the City. Unless stated specifically within these regulations, there shall be an easement of at least ten (10) feet in width adjacent to all (existing and proposed) lot lines (within each lot's interior) for any platted or replatted subdivision. The limits of easements shall include the stated width, location and bearings and distances as necessary for the reasonable exercise and use. Any and all easements, whether existing or proposed, shall be shown on the Preliminary Plat and the Final Plat of the proposed subdivision. Any easement that is for public use, i.e. for location of public utilities, shall be dedicated as a public easement and shown on the Final Plat.

5.18 MONUMENTS AND IRON PINS

- A. Permanent reference markers and/or monuments shall be required for all subdivisions of five (5) lots or more, and placed at not less than two (2) locations within, or on the boundary, of the record plat area and at such intermediate points as shall be required by the appropriate city or county agency. The location of all such markers and/or monuments shall be shown on the Design Plan and Final Plat.
- B. All required permanent reference monuments and required iron pins shall be in place after final grading is completed and/or prior to release of any Performance Bond established by the Morristown Regional Planning Commission.
- C. Concrete boundary monuments shall be located on public right of way lines, at public way intersections, and at all corners abutting a right of way. All corners in the subdivision shall be identified with iron pins, which comply with the Minimum Standards of Practice of the Tennessee State Board of Examiners for Land Surveyors.
- D. Iron pins, which comply with the Minimum Standards of Practice of the Tennessee State Board of Examiners for Land Surveyors, shall be installed at the external boundaries of a subdivision, including all corners, breaks at each end of curves and at distances of not more than one thousand (1,000) feet apart in any straight line, or at shorter intervals if topography requires. Monuments shall also be installed at all angle points and at points not less than twenty (20) feet from any stream, except that when such corners or points fall within a public way or proposed future public way, the monuments shall be placed on the side line of the public way.
- E. The proposed locations of the required concrete boundary monuments and iron pins shall be shown on the Preliminary Plat.

5.19 PUBLIC OPEN SPACES

Where a school, park, or other use is shown on a General Community Plan or Comprehensive Plan and is located in whole or in part in a subdivision, the Regional Planning Commission may require the reservation for public open space up to a total of ten (10) percent of the area of the subdivision for the City or County.

5.20 INSTALLATION OF IMPROVEMENTS

A. Earth Work

The following general earthwork procedure shall be followed for construction of roadways, embankments, and other general grading activities for projects to be owned by the City of Morristown. Earthwork for building foundations and other structures shall be performed in accordance with approved architectural plans.

1. Install erosion and sediment control measures in accordance with Tennessee Department of Environment and Conservation (TDEC) and City of Morristown requirements. This includes having a Land Disturbance Permit from the City of Morristown before any earthwork begins.
2. All trees, shrubs and other vegetation shall be cleared unless marked to remain. Disposal of cleared and grubbed materials shall be performed in accordance with local and state ordinances.
3. Existing foundations, fences, slabs, pavements, and below-grade structures shall be removed from the area to be graded. Remove organic material and soft or otherwise unsuitable material from the area to be graded.
4. Topsoil, if present, shall be stripped and stockpiled from all areas with suitable topsoil. The quantity of topsoil stripped and stockpiled shall be sufficient to provide a minimum of 4-inches of topsoil over all areas to be seeded. Contractor shall apply stabilization fabric to all slopes steeper than 3H:1V. Contractor shall grass disturbed areas to provide a healthy, leafy stand of grass.
5. Subgrade material shall be placed in loose lifts not to exceed 8-inches in thickness with a maximum particle size of 3 inches and compacted to at least 95 percent of the standard proctor maximum dry density (ASTM D 698) at a moisture content no more than 2 percentage points below to 2 percentage points above the optimum. Larger particles shall be well distributed within the fill to mitigate the potential for infiltration of surface water. For all areas to be paved the upper six inches of all cut and fill surfaces shall be scarified and then densified to 100 percent of the standard proctor (ASTM d 698).
6. After final grading and immediately prior to the preparation of an area for seeding, the contractor shall spread a minimum of 4-inches of topsoil on the area to be seeded. All areas are to be seeded and mulched according to specifications.
7. Contractor is to refer to the Tennessee Department of Environment and Conservation Division of Water Pollution Control for details on installing and maintaining the erosion control devices called for in this plan.

B. Geotechnical Quality Assurance

1. The contractor/developer will retain the services of a city-approved independent geotechnical engineering firm to determine project conformance of earthwork and pavement materials and the completed work elements with the project specifications and Morristown street standards. All

geotechnical reports and tests shall be submitted to the City Engineer weekly during active construction. All test results shall be submitted via email using pdf formatted documents.

2. Work shall be performed in a manner that does not disturb existing utilities, structures, or other site facilities not indicated to be removed.
3. Proposed materials and source of supply shall be approved by the geotechnical engineer as specified, prior to use during construction.
4. Testing of proposed soils to be used for soil fill (for determination of acceptability of soil and for quality control during compaction):
 - a) Soil classification (ASTM D 2487): minimum of one test per material type
 - b) Laboratory moisture content (ASTM D 2216): minimum of one test per material type
 - c) Moisture-density curve (ASTM D 698): minimum of one test per material type
 - d) Atterberg limits (ASTM D 4318): minimum of one test per material type

C. Soil Fill

Soil fill shall consist of sands with fines (SP-SM, SP-SC, SM, SC), silt (ML), low to medium plasticity clay (CL), or blends of these materials as defined by the Unified Soil Classification System (USCS). Fill materials not indicated within the above classifications must be approved by the geotechnical engineer prior to use in roadway construction.

D. Field Quality Control

The following tests shall be performed the independent geotechnical quality control firm during placement of soil fill:

1. In-place density (using ASTM D 2922, ASTM D 1556, or other appropriate test methods): minimum of one test per 5,000 square feet for each one-foot thick fill layer.
2. Moisture content (using ASTM D 3017, ASTM D 2216, or other appropriate test method): minimum of one test per 5,000 square feet for each one-foot thick soil layer.

E. General Site Grading

1. Grade existing material to the elevations and limits shown on the drawings. Tolerances for grading shall be as specified as shown in the civil drawings.
2. Unsuitable subgrade soils encountered during site grading in areas requiring fill placement shall be removed and replaced under the direction of the geotechnical engineer.
3. Shape and compact fill with uniform levels or slopes between points where elevations are shown on the drawings.
4. Grade areas adjacent to structures to achieve drainage away from the structures and to prevent ponding.

F. Proofrolling and Stabilization of Subgrade

1. After stripping of topsoil and excavation to grade, as applicable, scarify and recompact the existing subgrade soils to a depth of at least six inches prior to fill placement.
2. Proofroll the exposed subgrade to detect unstable conditions. Proofrolling shall be performed

after a suitable period of dry weather to avoid degrading the subgrade. Perform proofrolling with a loaded dump truck or similar equipment acceptable to the geotechnical engineer. Make several passes over each section with the proofrolling equipment.

3. The contractor may be required to excavate unsuitable subgrade soils to a depth sufficient to produce a stable bearing surface for fill placement as determined by the geotechnical quality control firm. Excavation shall continue until suitable subgrade soils are exposed as determined by the geotechnical quality control firm.
4. Soft or highly plastic soils which pump, rut or wave during proofrolling, as determined by the geotechnical quality control firm, shall be classified as unsuitable subgrade soils and shall be excavated and removed.
5. For pavement areas where fill material is not required, the subgrade soils shall be prepared as follows: scarify to a depth of 12 inches; adjust moisture content as necessary; recompact; and maintain specified subgrade moisture content until aggregate base course is placed.

G. Driveways and Handicap Ramps

1. The contractor shall use standard TDOT drawings (RP-D-15 and RP-D-16) and specifications when installing entrances. Note that the optional grass strip section located in the curb height transition area will not be approved by the City of Morristown unless specifically allowed in writing by the City Engineer.
2. The contractor shall use standard TDOT drawings (RP-H-3, RP-H-7, RP-H-8, and RP-H-9) and specifications when installing handicap ramps. Note that steel truncated dome surfaces may be allowed with the City Engineers written approval.

H. Asphalt and Curbs

1. The contractor shall use TDOT Standard Specifications for Road and Bridge Construction when installing aggregate base, asphalt pavements, and curbs. Asphalt plant material certifications shall be sent electronically to the City Engineer's office on a weekly basis in pdf format and kept on the job site in an orderly fashion. Asphalt, concrete, and stone tickets are to be made available at the job site for City staff to review upon request.
2. The contractor shall pay special attention to asphalt mix as it is delivered. The City of Morristown will not accept asphalt that is segregated or does not have properly constructed seams and joints. The contractor must follow the installation procedures in the TDOT Standard Specifications for Road and Bridge Construction.
3. The contractor/developer will provide test strips of all asphalt courses for the purposes of calibrating testing equipment and establishing prototype areas to determine product finish quality for the project (see TDOT 407.15 Test Strips).
4. The City Engineer's office must inspect and approve the test strip areas before the contractor may proceed with any work on the asphalt surfaces.
5. Curbs shall be backfilled and the fill shall slope into the storm drainage system.

I. Storm Sewer and Drainage

1. Drainage structures and pipe shall be installed in accordance with the latest edition TDOT Specifications for Road & Bridge Construction.

2. All storm water piping shall be RCP unless another material is specifically approved by the City Engineer in writing. All concrete pipe joints shall gasketed watertight and installed as specified by TDOT.
3. All piping shall be bedded in accordance with manufacturer's recommendations or as specified by TDOT (most conservative bedding method to be used).
4. If any existing structures to remain are damaged during construction, it shall be the contractor's responsibility to repair and/or replace the existing structure as necessary to return it to existing conditions or better.
5. Contractor shall assure positive drainage away from buildings for all natural and paved areas and towards drainage structures. The area outside of all structures shall be sloped at a minimum of 1.0% unless otherwise noted.

J. Utilities

All of the underground utilities and all service connections shall be installed completely in the location shown on the approved plans, and approved by the appropriate agency throughout the length of the road and across the right of way section. All utilities shall be developed in accordance with appropriate state, local, and utility agency requirements, and meet the design standards contained in these regulations.

The following guidelines shall be followed for utility installation.

1. Anyone digging in the right-of-way shall call "Tennessee One Call" Center at 811 or 800-351-1111.
2. Before any utility is installed, the entire width of the right-of-way shall be rough graded.
3. In general, the deepest utilities should be installed first to minimize any possible interference with laterals or service lines.
4. In cul-de-sacs or turnarounds, the dimensions from the curb shall vary. However, the standard utility spacing shall be maintained.
5. Backfill of all utility trenches constructed in the roadway shoulder shall be 95% compaction standard proctor maximum dry density (ASTM D 698) at a moisture content no more than 2 percentage points below to 2 percentage points above the optimum. Backfill of all utility trenches under the proposed roadway or curb and gutter section shall be stone.
6. Each utility shall be responsible for repair of any damage they create to other utility lines, or to the street improvements within the right-of-way. No utility shall be responsible for damages to another utility which is located outside their assigned space.
7. Once the road base has been placed, all further installation of utilities under the roadway shall be bored.

5.21 INSPECTION OF IMPROVEMENTS

Engineering "As-Built" plans are to be submitted prior to final approval. All subdivisions shall be inspected by the City of Morristown or Hamblen County as appropriate. Sufficient inspections shall be made to ensure compliance with the specifications set forth in these regulations. The subdivider shall notify the appropriate agency of his intention to begin work five (5) days prior to commencing. Engineering "as-built" plans and

calculations reflecting the “as-built” condition shall be submitted by the project engineer prior to Final Plat approval.

5.22 BUILDING PERMITS ISSUANCE

Building permits shall not be issued for any lot prior to completion of the required improvements for streets and utilities as set forth in these regulations unless a bond has been posted and approved (for more information about bonds, please refer to Section 5.23). These improvements include:

- A. All City-required and developer installed utilities (*i.e.*: electrical conduit (if applicable), sanitary sewer facilities, storm drainage systems and water quality management facilities, water system facilities, survey/boundary monuments) are installed and have been approved by the appropriate official.
- B. All streets and designated turn-around areas (temporary cul-de-sacs) are constructed to the minimum standards for base material and binder as set forth in these regulations, including all required tests established in these regulations, and approved by the County Road Superintendent or the City Engineer.
- C. All drainage and erosion control improvements are installed in accordance with the minimum standards set forth in these regulations and are approved by the County Road Superintendent or City Engineer.

5.23 REQUIRED BONDS

As per the City’s Land Disturbance Ordinance and Post-Construction Water Quality Management Ordinance, a performance bond or other surety as accepted by the City of Morristown will be required equal to 1.5 times the estimated construction costs of the work related to erosion control and stormwater management to insure proper construction. Work to be bonded includes erosion control measures, storm pipes, detention ponds and outlet control structures, stormwater quality treatment devices and practices, and any other components of the approved Water Quality Management Plan. Specific requirements for the bond and allowances for releasing the bonds are provided in the following sections.

5.24 BONDING OF IMPROVEMENTS

If a developer and/or owner requests to receive Final Plat approval for a subdivision before all required infrastructure is in place, then a performance bond, irrevocable letter of credit, or other surety may be posted. The amount of this surety shall be one and one-half (1.5) times the estimated costs of the final layer of asphalt and all other developer installed infrastructure improvements in the subdivision.

- A. The project engineer shall submit an itemized list of the estimated costs for infrastructure improvements. The City Engineer and/or County Road Superintendent shall approve or adjust the proposed cost estimates for all infrastructure improvements.
- B. All performance bonds, irrevocable letters of credit, or other sureties shall include the following:
 - 1. Principal’s name and address
 - 2. Surety’s name and address
 - 3. Notation: “Shall be held bound unto the City of Morristown”
 - 4. A sum determined by the City Engineer
 - 5. Subdivision name and phase (if applicable)
 - 6. Work to be performed
 - 7. Expiration date (as determined by the Morristown Regional Planning Commission not to exceed two (2) years)
- C. Once the bond amount is determined and is submitted, the Final Plat of the subdivision shall be presented to the Regional Planning Commission for approval, subject to the bond being accepted.
- D. The City of Morristown staff shall be empowered to demand forfeiture of any performance bond or the payment of any irrevocable letter of credit deemed necessary by the Morristown Regional Planning Commission in order to complete the needed improvements and/or maintenance in the approved subdivision.

5.25 MAINTENANCE BONDS

- A. The City Engineer or County Road Superintendent shall determine the amount of a maintenance bond, irrevocable letter of credit or other surety. The amount of this surety shall be established to cover the estimated costs of maintenance for the developer installed infrastructure improvements for a minimum of one (1) year. The amount of this surety shall be approved by the Morristown Regional Planning Commission.
- B. The City Staff, acting under the authority of the Morristown Regional Planning Commission, shall be empowered to demand forfeiture of any maintenance bond or the payment of any irrevocable letter of credit deemed necessary by the Morristown Regional Planning Commission in order to complete the needed improvements and/or maintenance in the approved subdivision.

5.26 TIME LIMITS

Prior to granting Final Plat approval, the subdivider and the Regional Planning Commission shall agree upon a deadline of the completion of all required improvements. Such a deadline shall not exceed two (2) years from the date of Final Plat approval. The Regional Planning Commission shall have the authority to recommend the extension of such deadline for one (1) additional year where the subdivider has presented substantial reasons and/or hardships.

5.27 REDUCTION OF GUARANTEE

In cases where partial improvements have been made under provisions of the subdivision regulations the amount of the guarantee may be reduced upon compliance with the inspections and certifications by the City of Morristown or Hamblen County as appropriate and the dedication of a portion of the required improvements. The amount of the reduction shall not exceed the percentage of the improvements already completed. In no case, however, shall the Regional Planning Commission reduce the improvement guarantees to less than 50% of the original amount until all work is complete.

5.28 RELEASE OF GUARANTEE

The Regional Planning Commission shall formally release the guarantee once all required improvements are installed and approved by the appropriate agencies.

5.29 DEDICATION OF IMPROVEMENTS

Formal acceptance and dedication of public infrastructure by the City of Morristown shall not be deemed complete until the final plat has been approved by the Regional Planning Commission, all associated sureties have been released and a resolution adopted by the City of Morristown City Council.