

**SUBDIVISION REGULATIONS
FOR THE
CITY OF LAFOLLETTE AND ITS PLANNING REGION
Adopted July 27, 2000**

**PREPARED BY
THE LAFOLLETTE
REGIONAL PLANNING COMMISSION**

**Assisted by the
Local Planning Office
Department of Economic & Community Development
East Tennessee Region
Knoxville, TN 37919**

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ARTICLE I.
PURPOSE, AUTHORITY AND JURISDICTION

A. Purpose

Land subdivision is the first step in the process of community development. Once land has been cut up into streets, lots and blocks and publicly recorded, the correction of defects is costly and difficult. Subdivision of land sooner or later becomes a public responsibility, in that roads and streets must be maintained and various public services customary to urban areas must be provided. The welfare of the entire community is thereby affected in many important respects. It is therefore to the interest of the public, the developer and the future owners that subdivisions be conceived, designed and developed in accordance with sound rules and proper minimum standards.

B. Authority

These subdivision regulations are adopted under authority granted by Sections 13-3-401 through 13-3-411 of the Tennessee Code Annotated. The planning commission has fulfilled the requirements set forth in this act as prerequisite to the adoption of such regulations.

C. Jurisdiction

These regulations shall govern all subdivision of land within the planning region of the City of LaFollette, Tennessee now or hereafter established and within these regulations, the term "subdivision" means the division of a tract or parcel of land into two or more lots, sites or other divisions requiring new street or utility construction, or any division of less than five (5) acres, for the purpose, whether immediate or future, of sale or building development, and includes resubdivision and when appropriate to the context, relates to the process of resubdividing or to the land or area subdivided, provided, however, that "subdivision" does not include a division of any tract or parcel of land into two or more tracts or parcels when such parts or parcels are five (5) acres or larger in size and do not require street or utility construction. Any owner of land within this area wishing to subdivide land shall submit to the planning commission a plat of the subdivision according to the procedures outlined in Article II, which plat shall conform to the minimum requirements set forth in Article III. Improvements shall be installed as required by Article IV of these standards.

LAFOLLETTE REGIONAL PLANNING COMMISSION

RESOLUTION NO. 2002-01

A RESOLUTION AMENDING THE SUBDIVISION REGULATIONS OF THE CITY OF LAFOLLETTE, TENNESSEE REGARDING CERTIFICATES OF ACCURACY

WHEREAS, the LaFollette Regional Planning Commission has adopted regulations governing the subdivision of land within the city in the manner provided for in 13-4-303, *Tennessee Code Annotated*; and,

WHEREAS, the LaFollette Regional Planning Commission may amend the subdivision regulations in the manner provided for in 13-4-303, *Tennessee Code Annotated*, and after a public hearing is held thereon; and,

WHEREAS, said public hearing was held on June 11, 2002.

NOW, THEREFORE, BE IT RESOLVED that the LaFollette Regional Planning Commission does hereby adopt the following amendments to the *Subdivision Regulations of the City of LaFollette, Tennessee and its planning region*;

Section 1. Article II. Procedure for Plat Approval, C. Final Plat, 6.b. shall be amended by deleting the words "or engineer".

Section 2. Article II. Procedure for Plat Approval, C. Final Plat, 6. Subdivision Certification Form 2. Certification of Accuracy shall be amended by deleting the word "Engineer".

Section 3. This resolution shall take effect upon its passage, the public welfare requiring it.

ADOPTED the 11th day of June 2002



Secretary

LAFOLLETTE REGIONAL PLANNING COMMISSION

ARTICLE II.
PROCEDURE FOR PLAT APPROVAL

A. General

1. The procedure for review and approval of a subdivision plat consists of two (2) separate steps. The initial step is the preparation and submission to the planning commission of a preliminary plat of the proposed subdivision. The second step is the preparation and submission to the planning commission of a final plat together with required certificates. This final plat becomes the instrument to be recorded in the office of the Campbell County Register of Deeds when duly signed by the secretary of the planning commission.

The subdivider shall consult early and informally with the planning commission and its technical staff for advice and assistance before the preparation of the preliminary plat and its formal application for approval. This will enable him to become thoroughly familiar with these regulations, official plans, or public improvements which might affect the area. Such informal review should prevent unnecessary and costly revisions.

2. Any owner of land lying within the area of jurisdiction of the planning commission who wishes to divide such land into two (2) or more lots, sites, or divisions, for the purpose, whether immediate or future, of sale or building development, and includes resubdivision and, when appropriate to the context, relates to the process of subdividing or to the land or area subdivided, shall submit a plat of such proposed subdivision to the planning commission for approval and shall obtain such approval prior to the filing of his subdivision plat for record. Any such plat of subdivision shall conform to the minimum standards of design for the subdivision of land as set forth in Article III of these regulations, and shall be presented in the manner specified in the following sections of this Article. No plat of a subdivision of land within the area of planning jurisdiction shall be filed or recorded by the county register without the approval of the planning commission as specified herein.
3. In order to secure review and approval by the planning commission of a proposed subdivision, the prospective subdivider shall, prior to the making of any street improvements or installations of utilities, submit to the planning commission a preliminary sketch plat as provided in Section B of this Article. On approval of said preliminary sketch plat he may proceed with the preparation of the final plat and other documents required in connection therewith as specified in Section C of this Article and the improvements set forth in Article IV.

B. Preliminary Sketch Plat

1. At least ten (10) days prior to the meeting at which it is to be considered, the subdivider shall submit to the planning commission seven (7) copies of a preliminary plat of the proposed subdivision drawn to a scale of not less than one (1) inch equals one hundred (100) feet. (Copies of the plat should be conveyed to the Building Inspector at the LaFollette Municipal Building.) A preliminary plat shall not be acceptable for submission unless it meets all the required standards of design, and unless it contains all the required information, or a written request for a variance from the requirements, along with supporting reasons for the request. A request for a variance shall be submitted in writing by the subdivider, along with the submitted subdivision plat.

As noted in Article III, Section A, Subsection 10, street or road profiles shall be submitted with the preliminary plat for any proposed street or road. The profiles shall display both natural and

finished grades, and shall be drawn to a scale no greater than one (1) inch equals one hundred (100) feet horizontally and one (1) inch equals twenty (20) feet vertically.

As noted in Article IV, Section C, Subsection 3, a stormwater drainage plan shall be submitted with the preliminary plat, where the plat includes any proposed streets or roads. For convenience, the drainage plan may be integrated into the preliminary plat.

2. The preliminary sketch plat which shall meet the minimum standards of design as set forth in Article III and the general requirements for the construction of public improvements as set forth in Article IV shall give the following information insofar as possible.
 - a. The proposed subdivision's name and location, the name(s) and address(es) of the owner or owners, and the name of the designer of the plat who shall be an engineer or registered surveyor.
 - b. Date, approximate north point, and graphic scale.
 - c. The location of existing and platted property lines, existing streets, buildings, water courses, railroads, sewers, bridges, culverts, drain pipes, water mains, any public utility easements or lines, detention basins, the present zoning classification on the land to be subdivided and on the adjoining land, and the names of adjoining property owners or subdivisions.
 - d. Plans of proposed utility layouts (sewers, water, gas, fire hydrants and electricity) showing feasible connections to the existing or any proposed utility systems. When such connections are not practicable, any proposed individual water supply and/or sewage disposal system must be approved by the appropriate health authorities.
 - e. The proposed street names, and the locations and dimensions of proposed streets, alleys, easements, parks, and other open spaces, reservations, lot lines, building setback lines and utilities.
 - f. Topographic contours at vertical intervals of not more than five (5) feet.
 - g. The acreage of the land to be subdivided.
 - h. Location sketch map showing relationship of subdivision site to area.
 - i. If any portion of the land being subdivided is subject to flood as defined in Article III, Section E, the area subject to flood shall be shown.
3. A subdivider may omit the submission of a preliminary plat, submitting only a final plat if all the following conditions are met:
 - a. The proposed subdivision does not contain more than five (5) lots, sites, or divisions.
 - b. All public improvements as set forth in Article IV are already installed, or because of the nature of the development deemed not necessary by the planning commission. Any construction, installation, or improvement of any public improvements shall require submission of a preliminary plat as prescribed by Section B of Article II.
 - c. The subdivider has consulted informally with the planning commission and/or planning staff for advice and assistance before preparation of a final plat and its formal application for approval.

4. Within thirty (30) days after submission of a preliminary sketch plat (including all necessary information and materials), the planning commission shall review it and indicate its approval, disapproval, or approval subject to modifications. If a plat is disapproved, reasons for such disapproval shall be stated in writing. If approved subject to modifications, the nature of the required modifications shall be indicated.
5. One (1) copy of the preliminary sketch plat shall be retained in the planning commission files; one (1) copy shall be retained by the planning commission staff; one (1) copy shall be returned to the subdivider at the time of approval or disapproval with any notations as to required changes, if any.
6. The approval of the preliminary plat by the planning commission shall not constitute acceptance of the final plat and shall not be indicated on the preliminary sketch plat.
7. The approval of the preliminary plat shall lapse unless a final plat based thereon is submitted within twelve (12) months from the date of such approval, unless an extension of time is applied for and granted by the planning commission.

C. **Final Plat**

1. The final plat shall conform substantially to the preliminary sketch plat as approved, and, if desired by the subdivider, it may constitute only that portion of the approved preliminary sketch plat which he proposed to record and develop at the time, provided however, that such portion conforms to all requirements of these regulations. A final plat shall not be acceptable for submission unless it contains all of the required information, or where appropriate, a written request for a variance from each specific deviation from the requirements with reasons therefore.
2. To allow sufficient time for review and processing by the regional planning commission and staff, the subdivider shall submit seven (7) copies of the final plat, together with any other plans required by the commission at least ten (10) days prior to the meeting at which it is to be considered. (Copies of the plat should be conveyed to the building inspector at the LaFollette Municipal Building). The plat shall be drawn to a scale of one (1) inch equals one hundred (100) feet on sheets no larger than 24" x 30" in size. When more than one sheet is required, an index sheet of the same size shall be filed showing the entire subdivision with the streets lettered in alphabetical order as a key. When the plat has been approved by the planning commission, one (1) copy shall be returned to the subdivider with the approval of the regional planning commission certified thereon for filing with the county register as the official plat of record. One copy shall be retained in the records of the planning commission; one copy shall be retained by the planning staff; one copy shall be provided any utilities department or utility district as applicable.
3. The planning commission shall approve or disapprove this final plat (including all necessary information and materials) within thirty (30) days after its submission. If the plat is disapproved, the grounds for disapproval shall be stated upon the records of the planning commission.
4. Approval of the final plat by the planning commission shall not constitute the acceptance by the public of the dedication of any street or other public way or ground.
5. The final plat shall show:
 - a. The lines of all streets and roads, alley lines, building setback lines, lots numbered in numerical order, house numbers, reservations for easements, and any areas to be dedicated to public use or sites for other than residential use with notes stating their purpose and any limitations.

- b. Sufficient data to determine readily and reproduce on the ground the location, bearing, and length of every street line, lot line, boundary line, block line and building line, whether curved or straight, and including true north point. This shall include the radius, central angle and tangent distance for the centerline of curved streets and curved property lines that are not the boundary of curved streets.
 - c. All dimensions to the nearest one hundredth (100th) of a foot and angles to the nearest minute.
 - d. Location and description of monuments.
 - e. The names and locations of adjoining subdivisions and streets and the location and ownership of adjoining unsubdivided property.
 - f. Date, title, name and location of subdivision, graphic scale, and approximate north point.
 - g. Location sketch map showing site in relation to area.
 - h. If any portion of the land being subdivided is subject to flood, as defined in Article III, Section E, the limit of such flood shall be shown.
6. The following certificates shall be presented with the final plat:
- a. Certification showing that applicant is the land owner and dedicates any necessary streets, rights-of-way, or other sites for public use.
 - b. Certification by surveyor or engineer to accuracy of survey and plat and placement of monuments.
 - c. Certification of the approval of public water utility
 - d. Certification of the approval of public sewer utility
 - e. Certification of subsurface sewage disposal
 - f. Certification that all streets and appurtenances have been installed in accordance with established standards.
 - g. Certification from the E-911 coordinator that all street names in proposed subdivisions do not conflict with other street names in the county.
 - h. Certification for the installation of electric lines
 - i. Certification for recording by planning commission.

An example of each certification form noted above is provided on the following pages..

7. **All final plats shall be submitted on the standard plat sheet as required by the planning commission.**

ARTICLE III.

GENERAL REQUIREMENTS AND MINIMUM STANDARDS OF DESIGN

A. Streets

1. **Conformity to the Major Road Plan and Campbell County Road Acceptance Standards**

The location and width of all streets and roads shall conform to the official major road plan adopted by the LaFollette Regional Planning Commission. Where proposed streets or roads are located outside of the city and within the LaFollette Planning Region, the subdivider should consult early with the Campbell County Road Superintendent. This consultation should occur prior to the submission of a preliminary subdivision plat, primarily to ensure that any proposed streets or roads meet the acceptance standards of Campbell County.

2. **Relation to Adjoining Street System**

The proposed street system shall extend existing streets or roads. They shall be extended at a width no less than the required minimum width as set forth in Articles III and IV.

3. **Access Streets to Subdivision Boundaries**

Sufficient access streets or rights-of-way to adjoining properties shall, in the discretion of the planning commission, be provided in subdivisions to permit harmonious development of the area.

4. **Street Elevation**

No street shall be approved if any portion of it is more than two (2) feet below the base flood elevation as defined in Section E of this Article. Fill may be used for streets provided such fill does not increase flood heights. Stormwater drainage openings shall be designed so that they do not restrict the flow of water and unduly increase flood heights. Where such fill and drainage openings are proposed, the planning commission shall consult with the city street superintendent or county road superintendent (whichever is applicable) concerning the adequacy of the proposed design. In addition, the street pattern shall be designed so that in time of flood each lot shall be readily accessible to emergency vehicles.

5. **Street Right-of-Way Width**

The minimum width of right-of-way, measured from lot line to lot line, shall be as shown on the major road plan, or if not shown on such plan, shall be not less than as follows:

- | | |
|---------------------------------|--------------------------------|
| a. Arterial Streets or Highways | 80 feet, or as may be required |
|---------------------------------|--------------------------------|

Arterial streets or highways are used primarily for fast or heavy traffic and are located on the Major Street and Road Plan for the planning region.

- | | |
|----------------------|---------|
| b. Collector Streets | 60 feet |
|----------------------|---------|

Collector streets are those which carry traffic from minor streets to the major system of arterial streets and highways, and include the principal entrance streets of a residential development and streets for major circulation within such a development.

c. Minor Residential Streets

50 feet

Minor streets are those which are used primarily for access to the abutting residential properties and designed to discourage their use by thru traffic.

d. Cul-de-sac Streets

50 feet

Cul-de-sacs are permanent terminal streets or courts, containing turnarounds, and are designed so that they cannot be extended in the future. Unless exceptional topographic conditions occur, the length of cul-de-sac streets shall not exceed 1,000 feet

e. Dead-end Streets

Not allowed

Dead-end streets are similar to cul-de-sacs except that they provide no turnaround circle at their closed end and are not permitted as streets in any proposed subdivision. Stub streets planned for future continuation are not considered to be dead-end streets, however such streets must have temporary turnarounds to accommodate traffic until the streets are extended.

f. Marginal Access Streets

40 feet

Marginal access streets are minor streets which are parallel to and adjacent to arterial streets and highways; and which provide access to abutting properties and protection from through traffic.

g. Alley

20 feet

Alleys are minor public ways used primarily for service access to the back or side of properties otherwise abutting on a street. In cases where topography or other physical conditions make a street of the required minimum width impracticable, the planning commission may modify the above requirements.

6. Additional Width on Existing Streets

Subdivisions that adjoin existing streets shall dedicate additional right-of-way to meet the above minimum street width requirements.

- a. The entire right-of-way shall be provided where any part of the subdivision is on both sides of the existing street.
- b. When the subdivision is located on only one side of an existing street, one-half of the required right-of-way, measured from the centerline of the existing roadway, shall be provided.

7. Restriction of Access

Where a subdivision abuts or contains an existing or proposed major street, the regional planning commission may require marginal access streets, reverse frontage with screen planting contained in a non-access reservation along the rear property line, or such other treatment as may be necessary for adequate protection of residential properties to afford separation of through and local traffic.

8. Street Grades

Grades on any proposed streets or roads shall follow the standards indicated below.

a. Arterial Maximum Grade

The maximum grade on arterial streets shall not exceed six (6) percent.

b. Collector Maximum Grade

The maximum grade on collector streets shall not exceed eight (8) percent.

c. Local Streets

The maximum grade on local streets shall not exceed twelve (12) percent. However, when special topographic or other conditions justify, the planning commission may increase the maximum allowable grade on local streets to fifteen (15) percent.

9. Horizontal Curves

Where a deflection angle of more than ten (10) degrees in the alignment of a street occurs, a curve of reasonably long radius shall be introduced. On streets sixty (60) feet or more in width, the centerline radius of curvature shall be not less than three hundred (300) feet; on other streets, not less than one hundred (100) feet.

10. Vertical Curve

Every change in grade shall be connected by a vertical curve constructed so as to afford a minimum sight distance of two hundred (200) feet, said distance being measured from the driver's eyes, which are assumed to be four and one-half (4-1/2) feet above the pavement surface, to an object four (4) inches high on the pavement.

Profiles of all proposed streets or roads shall be required showing natural and finished grades drawn to a scale no greater than one (1) inch equals one hundred (100) feet horizontally, and one (1) inch equals twenty (20) feet vertically.

11. Tangents

A tangent of at least one hundred (100) feet in length shall be introduced between reverse curves on arterial and collector streets.

12. Intersections

Street intersections shall be designed at right angles insofar as possible, and no intersection shall be at an angle of less than sixty (60) degrees.

Property line radii at street intersections shall not be less than twenty (20) feet, and where the angle of street intersection is less than seventy-five (75) degrees a greater curb radius may be required. Wherever 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 the street corner shall be rounded or otherwise set back sufficiently to permit such construction.

13. Street jogs

Street jogs with center line offsets of less than one hundred twenty-five (125) feet shall not be allowed.

14. Cul-de-sac Streets

a. Minor terminal streets or courts designed to have one end permanently closed shall be no more than twelve hundred (1,200) feet long, unless necessitated by topography, as measured along the centerline from the entrance street right-of-way to the center of the turnaround. Such streets shall be provided at the closed end with a turnaround having an outside roadway diameter of at least eighty (80) feet and a street right-of-way diameter of at least one hundred (100) feet; however the planning commission may approve an alternate design.

b. Where, in the opinion of the planning commission, it is desirable to provide for street access to adjoining property, proposed streets shall be extended by dedication to the boundary of such property. Such dead-end streets shall be provided with a temporary turnaround having a roadway diameter of at least eighty (80) feet.

15. Reserve Strips

Every lot in subdivided property shall be served from a publicly dedicated street, except where private streets are approved for a planned unit development. There shall be no reserve strips controlling access to streets, except where the control of such strips is definitely placed with the city or county (whichever is applicable) under conditions approved by the planning commission.

16. Street Names

Proposed streets which are obviously in alignment with others already existing and named shall bear the names of existing streets. In no case shall the name for a proposed street duplicate an existing street name, irrespective of the use of suffix street, avenue, boulevard, drive, way, place, or court. Each street name shall be approved by the applicable city or county E-911 Coordinator, and such approval shall be shown on the plat.

17. Alleys

Alleys may be provided in a subdivision where the subdivider produces evidence satisfactory to the planning commission for the need of them.

B. Blocks

1. Length

Blocks shall not be less than four hundred (400) feet nor more than twelve hundred (1200) feet in length, except as the planning commission considers necessary to secure efficient use of land or desired features of street pattern. In blocks over eight hundred (800) feet in length, the planning commission may require one (1) or more public crosswalks of not less than ten (10) feet in width to extend entirely across the block at locations deemed necessary.

2. Width

Blocks shall be wide enough to allow two (2) rows of lots, except where reverse frontage on major streets and roads is provided or where prevented by topographical conditions or size of the property; in which case the planning commission may approve a single row of lots of minimum depth.

C. Lots

1. Adequate Building Sites

Each lot shall contain a building site not subject to flood as defined in Section E of this Article and not in violation of any existing easement or building setback lines required in Subsection 4 of this Section.

2. Arrangement

Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines. Each lot must front for a minimum of thirty (30) feet upon a public street or road, except where the planning commission approves a subdivision as a planned unit development.

3. Minimum size

The size, shape and orientation of lots shall be such as the planning commission deems appropriate for the type of development and use contemplated. Where public water and sanitary sewer systems are reasonably accessible, the subdivider shall connect with such systems. Where a public sewer is not accessible, an alternate method of sewage disposal may be used, upon approval by the planning commission and subject to the lot size requirements indicated below.

a. All lots created in the subdivision, other than those not intended for development, shall conform to the following lot size and lot width:

- (1) Lots served by both public water and public sanitary sewer shall not be less than seven thousand five hundred (7,500) square feet in area and not less than sixty (60) feet in width at the required minimum building setback line.
- (2) Lots served by a public water system but not served by a public sanitary sewer system shall not be less than twenty thousand (20,000) square feet in area, and not less than one hundred (100) feet in width at the required minimum building setback line. The planning commission may require a larger lot size upon the recommendation of the health department environmentalist.
- (3) Residential lots not served by a public water system shall have an area of at least five acres, with a width of at least three hundred fifty (350) feet at the required minimum building setback line

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

4. **Building Setback Lines**

- a. The minimum depth of building setback lines from the street right-of-way shall not be less than thirty (30) feet, and in the case of corner lots not less than thirty (30) feet from both front and side street rights of way.
- b. The developer is responsible for verifying the details of an existing easement with the party to whom the easement has been granted or transferred prior to developing the initial version of the subdivision. In the case of electric transmission lines where easement widths are not definitely established, there shall be a minimum building setback line from the center of the transmission line as follows:

<u>Voltage of Line</u>	<u>Minimum Building Setback</u>
46 KV	37-1/2 feet
69 KV	50 feet
161 KV and over	75 feet

D. **Public Use and Service Areas**

Due consideration shall be given to the allocation of areas suitably located, with adequate size for playgrounds and parks for local or neighborhood use as well as public service areas.

1. **Public Open Spaces**

Where a school, neighborhood park or recreation area or public access to water frontage, shown on an official map or in a plan made and adopted by the planning commission, is located in whole or in part in the applicant's subdivision, the planning commission may require the dedication or reservation of such open space within the subdivision up to and including a total of ten (10) percent of the gross area or water frontage of the plot, for park, school or recreation purposes.

2. **Easements for Utilities**

Except where alleys are permitted for the purpose, the planning commission shall require easements, not exceeding five (5) feet in width for poles, wires, conduits, storm and sanitary sewers, gas, water mains or other utility lines along both side and rear lot lines. Where the rear lot lines of a subdivision adjoin property not subject to an easement of at least five (5) feet, then the required easement on such lines shall be ten (10) feet.

3. **Easements for Drainage**

Where any portion of a subdivision is traversed by a watercourse, drainageway, or stream, then a stormwater easement shall be provided for the purpose of widening, deepening, relocating, improving, or protecting such watercourse, drainage, or stream area.

4. **Pedestrian Easements**

In such cases and at such locations as the planning commission deems advisable, easements along side or rear lot lines not exceeding twelve (12) feet in width may be required for pedestrian or bicycle traffic to and from schools, neighborhood parks, and other public places.

5. **Community Assets**

In all subdivisions due regard shall be shown for natural features, such as large trees and watercourses, and for historical spots and similar community assets which, if preserved, will add attractiveness and value to the property.

E. Suitability of the Land

1. Land Physically Unsuitable for Subdivision

The planning commission may determine that land is unsuitable for development as a result of the following conditions or observations:

- a. Because of flooding, poor drainage, steep slopes, rock formations and other such features which may endanger health, life, or property, aggravate erosion, increase flood hazard, or necessitate excessive expenditure of public funds for supply and maintenance of services.
- b. Physical constraints to development which other public agencies concerned have investigated and found in the best interest of the public not suitable for the type of platting and development proposed.

Land with unsuitable development characteristics shall not be approved for subdivision purposes unless effective methods are formulated by the developer to reduce adequately the impacts of such features.

2. Land Unsuitably Located for Subdivision

The planning commission shall not approve what it considers to be premature subdivision of land which would involve danger or injury to health, safety, or property resulting from an adverse effect and/or excessive public expenditures for the following: water supply, sanitary wastewater disposal, schools, stormwater drainage, street or transportation access, or other public services or facilities.

3. Land Subject to Flood

Land which the planning commission has found to be unsuitable for subdivision due to flooding, bad drainage, steep slopes, rock formation, or other features likely to be harmful to the safety, health, and general welfare of the future residents shall not be subdivided unless adequate methods approved by the planning commission are formulated by the developer for meeting the problems created by the subdivision of such land.

In applying this provision, the following materials shall be utilized where applicable: the Flood Insurance Rate Map for the City of LaFollette, Tennessee (September 5, 1984); the Floodway Boundary Map for the City of LaFollette, Tennessee (September 5, 1984); the Flood Damage Prevention Ordinance for LaFollette, Tennessee; the LaFollette Zoning Ordinance; and, the Flood Insurance Rate Map for Campbell County, Tennessee (August 5, 1986).

Fill may not be used to raise land within the Floodway District. On other areas subject to flood, fill may be used provided the proposed fill does not restrict the flow of water and unduly increase flood heights.

F. Large Tracts or Parcels

When land is subdivided into larger parcels than ordinary building lots, such parcels shall be arranged so as to allow for the opening of streets in the future and for logical further resubdivision.

G. Variances

Variances may be granted under the following conditions:

1. Where the subdivider can show that strict adherence to these regulations would cause unnecessary hardship
2. Where the planning commission determines that there are topographical or other conditions peculiar to the site, and that a departure from these regulations will not destroy their intent. Any variance thus authorized shall be stated in writing in the minutes of the planning commission with the reasoning on which the departure is justified set forth.

H. Planned Unit Developments (PUD)

Planned unit developments are meant to provide opportunities for the creation of desirable environments through the application of flexible and diversified land development standards under a comprehensive plan and program professionally prepared. The planned unit development is intended to encourage the application of innovative designs and technologies to community development, which will result in superior living environments or development arrangements, based on identifiable themes and ideas. It is further intended to achieve efficiencies in the use of land and infrastructure systems, while providing clustered areas for building locations, usable attractive open spaces, safe vehicular circulation, and the general well being of the inhabitants.

Since planned unit developments involve the design of buildings and structures based on specific site conditions, the LaFollette Regional Planning Commission may consider departures from the standards of these regulations, where it can be shown that such departures do not violate their intent. Furthermore, any planned unit development proposed within the municipal area of the planning commission's jurisdiction shall conform with the requirements of the LaFollette Zoning Ordinance.

I. Zoning or Other Regulations

No final plat of land within the force and effect of existing zoning regulations shall be approved unless it conforms to such regulations. Whenever there is a discrepancy between minimum standards or dimensions noted herein and those contained in zoning regulations, building code, or other official regulations, the highest standard shall prevail.

ARTICLE IV

DEVELOPMENT PREREQUISITE TO FINAL APPROVAL

A perfectly prepared and recorded subdivision plat means little to a prospective lot buyer until he can see the actual physical transformation of raw acreage into lots suitable for building purposes and human habitation. Improvements by the subdivider spare the community from a potential tax liability. The following tangible improvements are required before final plat approval in order to assure the physical reality of a subdivision.

Required Improvements

Every subdivision developer shall be required to grade and improve streets and alleys, and to install curbs, monuments, sewers, storm water inlets and water mains, in accordance with specifications established by the planning commission. Below are the minimum standards for subdivision improvements.

A. Monuments or Corner Markers

1. Flat top iron pins, not less than one-half (1/2) inch in diameter and eighteen (18) inches in length, shall be set at all points where the street lines intersect the exterior boundaries of the subdivision, and at angle points and points of curve in each street. The top of the iron pins shall have a cap or tag of noncorrosive material with the surveyor's registration number or company name stamped thereon..
2. All other lot corners shall be marked with iron pipe not less than one-half (1/2) inch in diameter and eighteen (18) inches in length, and driven so as to be flush with the finished grade.

B. Grading

All streets, roads and alleys shall be graded by the subdividers so that pavements can be constructed to the required cross-section. Deviation from the above due to special topographical conditions, will be allowed only with special approval of the planning commission. Where streets are constructed under or adjacent to existing electric transmission lines, the nearest edge of the pavement shall be a minimum of fifteen (15) feet from any transmission line structure, and all grading for the street shall be done in a manner which will not disturb the structure or result in erosion endangering it. In the case of electric transmission lines, the clearance from the pavement to the nearest conductor shall meet the requirements of the local utility.

1. Preparation: Before grading is started, the entire right-of-way area shall be cleared of all stumps, roots, brush and other objectionable materials and all trees not intended for preservation.
2. Cuts: All tree stumps, boulders and other obstructions shall be removed to a depth of two (2) feet below the subgrade. Rock, when encountered, shall be scarified to a depth of twelve (12) inches below the subgrade. All topsoil shall be removed a minimum of two (2) feet below the subgrade and back filled with suitable material. No grading shall be done when the ground is frozen or muddy, unless mud is removed and deposited outside of streets.
3. Fill: All suitable material from roadway cuts may be used in the construction of fills, approaches, or at other places as needed. Excess materials including organic materials, soft clays, etc., shall be removed from the development site. The fill shall be spread in layers not to exceed twelve (12) inches loose and compacted by a sheep's foot roller with a minimum standard compaction of 95%. The filling of utility trenches and other places not accessible to a roller shall be mechanically tamped, and where water is used to assist compaction the water content shall not exceed the optimum of moisture.

C. Inspections

During the construction of any subdivision roads in the area of planning jurisdiction, where such roads will be public roads maintained by the City of LaFollette or Campbell County, the developer and/or his contractor shall be required to keep the applicable City or County Road Superintendent advised as to the progress being made. Such roads shall meet or exceed the standards required by these subdivision regulations. The following inspections and/or approvals shall be required by the applicable official (City Street Superintendent, County Road Superintendent, and/or County Surveyor):

- (a) after clearing and stripping
- (b) after grading and drainage are completed
- (c) after the stone base is in place, and
- (d) during and after application of all asphaltic materials.

The developer, or his representative, shall be responsible for notifying the Street or Road Superintendent for each inspection. When the plat is submitted to the planning commission for final approval, a final inspection shall be made. That official's findings and recommendations concerning approval of the roads shall be reported in writing to the planning commission.

In lieu of the completion of road improvements by the time of final plat submission, the planning commission may, upon request, accept an improvements guarantee. In considering such a guarantee, the planning commission may request the advice of the City Street Official or County Road Superintendent (or designated county road inspector) regarding the amount indicated for the completion of the street and road improvements. Such a guarantee shall not be released by the planning commission until the recommendation of the applicable road official has been obtained concerning the acceptability of the completed road(s).

D. Storm Water Control

An adequate drainage system, including necessary open ditches, pipes, culverts, intersectional drains, drop inlets, bridges, etc., shall be provided for the proper drainage of all surface water. Cross drains shall be provided to accommodate all natural water flow, and shall be of sufficient length to permit a full width roadway and the required slopes. Cross drains shall be built on a straight line and grade, and shall be laid on a firm base, but not on rock. Pipes shall be laid with the spigot end pointing in the direction of the flow, and with the ends fitted and matched to provide tight joints and a smooth, uniform invert. They shall be placed at a sufficient depth below the roadbed to avoid dangerous pressure of impact, and in no case shall the top of the pipe be less than one (1) foot below the roadbed. For the calculation of cross drain or culvert diameters, Talbot's Formula shall be used, except that no drainage pipe or culvert may be less than fifteen (15) inches in diameter (see Appendix IV). In lieu of Talbot's formula, another method of calculation for pipe or culvert size may be employed, if it is widely accepted by engineering professionals.

The following standards shall apply:

1. *Drainage System Design Criteria:* The following criteria shall be followed in the design and installation of storm water drainage systems:
 - (a) The installation of a drainage pipe is required for any driveway constructed by the subdivider, and which connects to a drainageway associated with any public street or road. This requirement is applicable on any roadway section which does not have curbing.
 - (b) Drainage pipes underlying driveways, and referred to in (a), shall be a minimum of fifteen (15) inches in diameter. However greater diameter may be necessary depending upon the flow of stormwater anticipated along the applicable drainage channel.

- (c) Catch Basins shall be integrated, where necessary, into any new roadway construction involving the installation of curbing. Catch basins shall be TDOT 12-32 (standard drawing D-CB-12-32), modified to accept the frame and grate as shown on standard drawing D-CBB-12A or other designs of comparable quality as approved by the county. Total casting weight shall be a minimum of 730 lbs. per catch basin. Castings shall be aligned using plan normal gutter elevations which shall be adjusted to allow for a 2' sump at face of curb.
- (d) Enclosed storm drains which collect and convey drainage on, across, and through public rights-of-way shall comply with standards for driveway side drains. Pipe shall extend beyond the ROW and shall terminate with a flared concrete headwall. Rip rap/quarry or field stone (4 to 8 inches in dimension) shall be placed a minimum of 6' beyond the headwall and laid over erosion control matting material equal to Erosion Control Fabric 955 by Synthetic Industries Inc.
- (e) Standards for enclosed systems: The minimum design criteria used for calculating the size of enclosed drainage systems shall be based on a ten (10) year frequency, twenty-four (24) hour duration storm. For major system designs, an engineer shall determine other appropriate criteria which are consistent with the intent of this section.
- (f) All hydrologic and hydraulic computations utilized in the design of stormwater detention or retention facilities must be prepared by a registered engineer proficient in the field of hydrology and hydraulics and licensed in the state of Tennessee. An acceptable method for calculating runoff and detention facilities is outlined in "Urban Hydrology For Watersheds", 2nd. Edition, U.S. Soil Conservation Service, Technical Release #55.
- (g) If curbs are not provided, drainage ditching shall be constructed so that the valley line of the ditch is placed at least six (6) feet from the edge of the pavement surface and at least eighteen (18) inches below the elevation of that surface. The slopes of the ditch shall normally have a ratio of at least 3:1, horizontally to vertically. Where the slope of a roadway is eight (8) percent or more, and drainage ditches are proposed, then rip-rapping, concrete swales, or other appropriate measures shall be taken by the subdivider to preserve drainage areas against erosion and sedimentation.
- (h) The surface of the finished street or road shall be constructed to include a crown of at least two (2) inches for the proper drainage of stormwater.

2. Stormwater Detention/Retention

Where significant problems exist in the conveyance of stormwater drainage from a proposed single family residential subdivision, amounting to at least five (5) acres or ten (10) lots, then stormwater detention or retention may be required.

Standards: Where detention or retention are necessary, the development shall be required to use generally accepted standards and procedures for calculating the release of stormwater from the site before and after development. The design criteria for the sizing of detention or retention basins are based on the maximum outflow rate of a 24-hour storm of 10 year frequency under the pre-development condition of the site, and adequate capacity for a 24-hour storm of 25-year frequency under the post-development condition.

3. Stormwater Drainage Plan

If any street improvement is proposed for a subdivision development, then a professionally (engineer, architect, registered surveyor) designed stormwater drainage plan shall be submitted to the planning commission with the preliminary plat. Where curbing, guttering, and underground piping are constructed, then the drainage system shall be designed by a certified engineer (P.E.). The plan may be integrated into the preliminary plat, if desired by the subdivider. It shall indicate

any needed stormwater structures, such as culverts, rip-rapping, concrete or asphalt swales, storm drains used with curbing, subsurface piping, and detention or retention basins. (See Subsection 2 above for detention/retention basins.)

4. Erosion Control

Effective erosion control measures shall be required during construction to eliminate sedimentation on public rights-of-way, watercourses, or adjacent properties. Among the most prevalent measures are straw bales or silt fencing, however other suitable methods may be permitted. Barren areas within the subdivision shall be replanted as soon as possible in the development process. At a minimum, grass shall be planted on denuded areas, but wherever feasible original vegetation shall be maintained on the development site.

E. Road Design Standards

1. Pavement Base

After preparation of the subgrade, the roadbed shall be surfaced with Type A mineral aggregate crushed stone, pugmill mixed with even wetting to maintain a uniform moisture content, in accordance with Section 303, Mineral Aggregate Base, Standard Specifications for Road and Bridge Construction, Tennessee Department of Transportation. The aggregate shall be applied in reasonably close conformity with the lines and grades shown on the street profile/plan. The average density shall not be less than ninety-five (95) percent of maximum density as determined by AASHTO T-99, Method D. Any constructed base shall extend at least three (3) feet from the edge of the pavement on each side of the street or road surface. The compacted thickness of the stone roadway shall be as follows for the dominant type of traffic using the road:

Residential 6"
Commercial 8"
Industrial 10"

2. Prime Coat

After a thoroughly compacted base has been established, a prime coat shall be applied as specified in Appendix III of these regulations.

3. Binder

A binder course consisting of compacted asphaltic concrete (307-B specification) shall be required for all streets or roadways as follows:

Residential 2.0"
Commercial 3.0"
Industrial 3.0"

4. Wearing Surface

A wearing surface consisting of compacted finish material (307-C specification) shall be required for all streets or roadways as follows:

Residential 1.25"
Commercial 2.0"
Industrial 2.0"

5. Minimum Pavement Widths

Minimum pavement widths shall conform to the standards listed below (where curbs and gutters are installed, the following widths shall be required between the curbs):

- a. Minor Residential Streets (inside city)

24 feet

Minor Residential Streets (outside city)	20 feet
b. Marginal Access Streets (1,200' or less in length or serving not more than 24 lots)	24 feet
c. Cul-de-sac (1,200' or less)(inside city)	24 feet
Cul-de-sac (1,200' or less) (outside city)	20 feet
d. Collector Streets (major and minor, with two moving lanes)	26 feet
e. Arterials (not usually paved by developer)	n/a
f. Alleys	12 feet
6. Curbs and Gutters	

The subdivider may provide permanent six (6) inch concrete curbs with twenty-four (24) inch integral concrete gutters; standard rolled curb and gutters; or other construction approved by the planning commission (see Appendix).

F. Sidewalks (may be required)

Sidewalks, if constructed, shall be located not less than one (1) foot from the property line to prevent interference of encroachment by fencing, walls, hedges, or other planting or structures placed on the property line at a later date. In single-family residential areas, concrete sidewalks shall be four (4) feet wide and four (4) inches thick. In multi-family or group housing developments, sidewalks shall be five (5) feet wide and four (4) inches thick. In commercial areas, sidewalks shall be ten (10) feet wide and four (4) inches thick.

G. Installation of Utilities and Driveways

After grading is completed and approved, and before any base is applied, all of the underground works--water mains, gas mains, etc.--shall be installed completely and approved throughout the length of the road right of way(s) and any other relevant areas. All driveways for houses to be built by the developer shall be cut and drained.

H. Water Supply System

It is the intent of these regulations to require six (6) inch inside diameter water mains as a minimum in future subdivisions throughout the municipality and planning region. The mains shall be connected to the city water supply system or other public utility in order to serve adequately all lots for domestic use and fire protection. Exceptions may be considered where the existing water lines and/or water pressure in the vicinity of a proposed subdivision are not adequate to connect to new six (6) inch water lines. Where main water lines are extended to provide public water service to subdivisions, fire hydrants shall be installed at intervals not exceeding eight hundred (800) feet, as measured along a right of way. At least one (1) hydrant shall be required in any subdivision where a main water line is extended for the provision of public water service.

I. Sanitary Sewers

When located within a sewer service area, sanitary sewers shall be installed in such a manner as to serve adequately all lots with connection to the public system.

Where lots cannot be economically connected with a public sewerage system, they must contain adequate area for the installation of approved septic tank and disposal fields, or another acceptable alternative, and must be approved in writing by the appropriate environmentalist.

J. Street Name Signs & Regulatory Warning Signs

Signs shall be installed by the developer and appear at all intersections in new subdivisions, including intersections with county roads. Appropriate regulatory and warning signs shall be installed as needed and shall conform to Uniform Traffic Control Manual guidelines.

K. Requirements for Acceleration and Deceleration Lanes

In order to provide for the safe and orderly movement of traffic on existing streets, the City of LaFollette Regional Planning Commission may require a developer to construct such lanes for acceleration and deceleration as may be appropriate. The commission's decision shall be based on the existing road widths, average and peak daily traffic, and safety conditions of the area.

L. Electric Transmission Lines

The subdivider shall provide the necessary major electrical distribution lines throughout the subdivision. Electrical lines shall make electrical power available to all lots shown on the subdivision plat.

M. Guarantee in Lieu of Completed Improvements

No final subdivision plat shall be approved by the planning commission, nor accepted for record by the county register of deeds, until one of the following conditions has been met:

1. All required improvements have been constructed in a satisfactory manner and approved by the planning commission.
2. The planning commission has accepted an irrevocable letter of credit, certified check, escrow account, or security or performance bond in an amount equal to the estimated cost of installation of the required improvements, whereby improvements may be made and utilities installed without cost to the City of LaFollette in case of default by the subdivider. The conditions of such guarantees shall provide for the installation of the secured improvements within a period not to exceed eighteen (18) months; provided however, that such period may be extended by the planning commission with the consent of the parties thereto, if the planning commission finds that the public interest will not be adversely affected by such extension.
3. Any owner or agent of any land may sell, transfer, or agree to sell any lot or lots shown on a plat having been given final approval by the planning commission; provided the owner or agent posts an acceptable guarantee to the public for the construction and installation of necessary improvements within the specified time period.

Sale of subdivision by auction does not exempt the subdivider from posting acceptable security in lieu of completed improvements; however, in the event that a parcel is sold as a whole, the security or performance bond shall be immediately released by the planning commission.

ARTICLE V

ENFORCEMENT AND PENALTIES FOR VIOLATIONS

A. General

The enforcement of these regulations and penalties for the unapproved recordation or transfer of land is provided by state law in the authority granted by Public Acts of the State of Tennessee.

B. Enforcement

1. 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 Campbell County or received or recorded by the County Registrar until said plat or plan has received final approval in writing by the planning commission, as provided in Section 13-4-306 and 13-3-410, Tennessee Code Annotated.
2. No board, public officer, or authority shall light any street, or lay out or authorize the laying out of water mains or sewers, or the construction of 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 planning commission, as provided in Section 13-4-307 and 13-3-406, Tennessee Code Annotated

C. Penalties

1. No county registrar shall receive, file, or record a plat of a subdivision within the planning region without the approval of the planning commission as required in Section 13-4-302, Tennessee Code Annotated, and any county registrar so doing shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by law.
2. Section 13-4-306 and Section 13-3-410, Tennessee Code Annotated, provide 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 planning commission and obtained its approval as required before such plat be recorded in the office of the appropriate county register, shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by the 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 other official designated by its chief legislative body, and the county, through its county attorney or other official designated by the county commission, may enjoin such transfer or sale or agreement by action or injunction.
3. Any building or structure erected or to be erected in violation of the subdivision regulations shall be deemed an unlawful building or structure, and the building commissioner, solicitor, or other official of the municipality or county 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 13-4-308 or 13-3-411, Tennessee Code Annotated.

ARTICLE VI

ADOPTION AND EFFECTIVE DATE

- A. Before adoption of these subdivision regulations, a public hearing as required by Section 13-3-403 and 13-4-303, Tennessee Code Annotated, was afforded any interested person or persons. Notice of such hearing was announced in a local paper, being of general circulation within the area of planning jurisdiction, and stating the time and place for the hearing.
- B. These rules and regulations and any amendment thereto shall be in full force and effect from and after their adoption and effective date.

LaFollette Regional Planning Commission:

Chairman

Adopted:

Public Hearing

SUBDIVISION CERTIFICATION FORMS

1. CERTIFICATION OF OWNERSHIP AND DEDICATION

This is to certify that the owner(s) of the property shown and described hereon hereby adopt this subdivision plat and dedicate all streets, alleys, walks, park or other public ways and open space to public or private use as noted.

Date Owner Owner

2. CERTIFICATE OF ACCURACY

I certify that the plat shown and described hereon, is a true and correct survey to the accuracy required by the planning commission and that monuments have been placed as shown hereon, to the specifications of the planning commission.

_____, 20_____
Date Registered Engineer/Surveyor

3. CERTIFICATION OF THE APPROVAL OF WATER UTILITY

I hereby certify that _____ improvements have been installed in an acceptable manner, and according to the specifications of the LaFollette Regional Subdivision Regulations in the subdivision entitled: _____.

_____, 20_____
Date Local Utility Approving Agent

4. CERTIFICATION OF THE APPROVAL OF SEWER UTILITY

I hereby certify that _____ improvements have been installed in an acceptable manner, and according to the specifications of the LaFollette Regional Subdivision Regulations in the subdivision entitled: _____.

_____, 20_____
Date Local Utility Approveing Agent

5. CERTIFICATION OF SUBSURFACE DISPOSAL

This subdivision is approved for subsurface sewage disposal. The owner/developer shall obtain from the Health Authority or Representative a permit for each lot prior to any construction on the property. The permit shall establish the maximum size dwelling and the specific location of the primary and the secondary disposal areas. Owner/developer shall not do any construction or mutilation (cutting or filling) of the so designated primary and secondary disposal areas without the prior approval of the Health Authority or Representative. (not required if 4 is applicable).

_____, 20_____
Date Local Health Authority/Environmentalst

6. CERTIFICATION OF STREETS

I certify that streets and related appurtenances installed, or proposed for installation, fully meet the specifications and inspection requirements established by the LaFollette Regional Planning Commission.

_____, 20____
Date

City Street Official or County Road
Superintendent

7. CERTIFICATION OF STREET NAMES

I certify that all street names are in compliance with E-911 and do not conflict with other street names in the county.

_____, 20____
Date

E-911 Coordinator

8. CERTIFICATION OF ELECTRIC LINES

I certify that electric lines have been installed in an acceptable manner and according to the requirements of this company, or a letter of credit, security bond has been posted with the planning commission to assure completion of all required improvements in case of default.

_____, 20____
Date

Electric Utility Representative

9. CERTIFICATE OF APPROVAL FOR RECORDING

I certify that this plat has been found to comply with the subdivision requirements for the city and/or planning region, with the exception of such variances, if any, which are noted. All improvements have been installed, or an acceptable surety posted in order to assure completion. This lot is approved for recording in the office of the county register.

_____, 20____
Date

Secretary, LaFollette Regional Planning
Commission

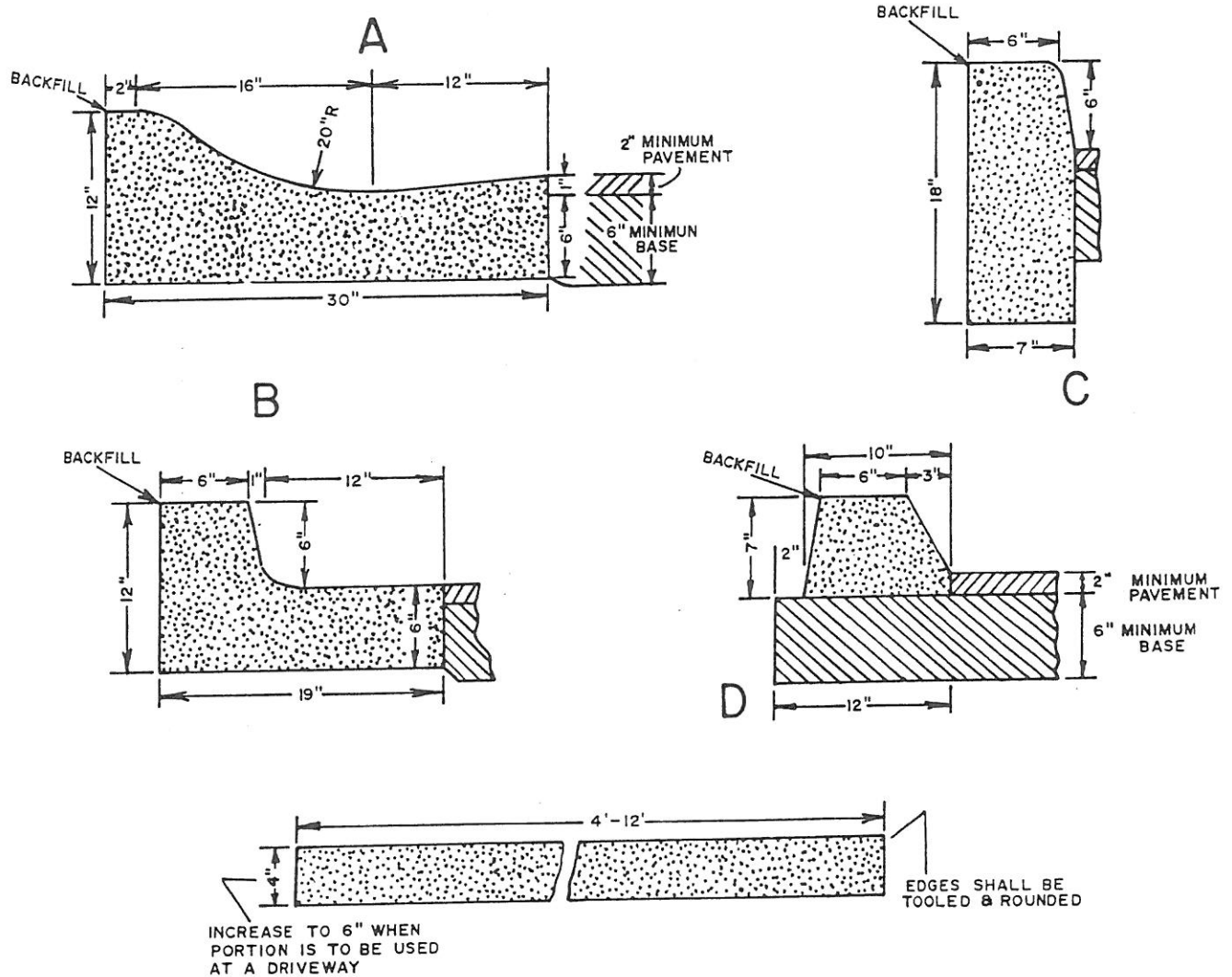
APPENDICES

APPENDIX I

CEMENT, CONCRETE CURBING AND SIDEWALKS

A. Description

This item shall consist of Portland cement concrete curbs, curbs and gutters, or sidewalks constructed on a prepared subgrade in accordance with these specifications and either of the cross-sections shown. The required width of the base varies with the type of curbing selected:



- Type A. Base two (2) feet narrower than required pavement width.
- Type B. Base two (2) feet narrower than required pavement width.
- Type C. Base equal to required pavement width.
- Type D. Base two (2) feet wider than required pavement width.

B. Materials

1. Aggregates: Coarse aggregate shall consist of crushed gravel. It shall be clean, hard, tough, durable pieces free from injurious amounts of soft friable, thin, elongated or laminated pieces, soluble salts, organic or other deleterious matter.

Fine aggregate shall consist of either a natural sand or a stone sand composed of sound particles of approved stone. All sand shall be free of clay or other adherent coatings and injurious amounts of deleterious matter.

2. Cement: Standard Portland cement and high early strength Portland cement shall meet the requirements of current federal specifications SS-C-192 or equal.
3. Water: Water shall be free from oil, acids, alkali and vegetable matter and shall be clean.
4. Gradation: The aggregate when tested by means of laboratory sieves shall meet the following requirements:

<u>Sieve Designation</u>	<u>Percent by Weight</u> <u>Passing Square Mesh Sieve</u>	
	<u>Coarse Aggregate</u>	<u>Fine Aggregate</u>
1-1/2 inch	100	---
1 inch	95-100	---
1/2 inch	35- 70	---
3/8 inch	---	100
No. 4	0 -10	95-100
No. 16	---	45- 80
No. 50	---	10- 30
No. 100	---	2- 10

5. Proportions: Concrete shall contain six (6) bags of cement per cubic yard and shall be proportioned in an approximate 1:2:4 mix as follows: Mix with each bag of cement 188 pounds of fine aggregate and 345 pounds of coarse aggregate, using six (6) gallons of water. Weight of aggregates is based on a specific gravity of 2.65. Compressive strength shall be 3,000 pounds per square inch at 28 days.

C. Construction Methods

1. Preparation of Subgrade: All boulders, organic material, soft clay, spongy material, and any other objectionable material shall be removed and replaced with approved material. The subgrade shall be properly shaped, rolled and uniformly compacted to conform with the accepted cross-sections and grades.
2. Forms for Concrete: The forms for the concrete shall be of wood or metal, straight, free from warps or kinks and of sufficient strength. They shall be staked securely enough to resist the pressure of the concrete without spring. When ready for the concrete to be deposited they shall not vary from the approved line and grade and shall be kept so until the concrete has set. Where a face form for a curb is used it shall be so designed as to permit it to be securely fastened to the other forms.
3. Placing and Finishing Concrete: Just prior to placing the concrete, the subgrade (or base) shall be moistened, the concrete mixed to the proper consistency shall be placed in the forms and

thoroughly tamped in place so that all honeycombs will be eliminated and sufficient mortar will be brought to the surface. After this the surface shall be brought to the smooth even finish by means of a wooden float. All faces adjacent to the forms shall be spaced so that after the forms are stripped the surface of the faces will be smooth, even and free of honeycomb. All edges shall be tool rounded. Slope sidewalks one quarter ($1/4$) inch per foot toward the pavement surface.

4. Expansion and Contraction Joints for Concrete: Half-inch ($1/2$) expansion joints shall be placed at intervals not exceeding sixty (60) feet. At intervals not greater than ten (10) feet nor less than five (5) feet the concrete curb shall be scored for a depth equal to one-third ($1/3$) the total depth of the concrete. Sidewalks shall be scored to a depth of one (1) inch every four (4) to six (6) feet and at all intersections with curbs or other structures.
5. Curing Concrete: When completed the concrete shall be kept moist for a period of not less than seven (7) days and longer, if necessary, and shall be protected from the elements in a satisfactory manner.
6. Backfilling: Backfill shall be of suitable selected material and shall be placed and tamped in layers of not over six (6) inches in depth until firm and solid. Backfilling shall follow immediately after the concrete forms have been removed, and shall be higher than and sloped toward the top of the curb to insure surface drainage on the paved surface of the roadway. Paved and "V" type ditches for drainage behind the curb will not be permitted. Slope sidewalk planting strips shall be placed one-quarter ($1/4$) inch per foot toward the pavement surface.

D. Seasonal Limits

No concrete shall be poured on a frozen or thawing subgrade, or during unfavorable weather conditions, or when the temperature is 38° F. and falling.

APPENDIX II
STREET AND ROAD PAVING
TWO COURSES OF ASPHALTIC CONCRETE (HOT MIX)

Asphaltic paving for streets and roads shall consist of two courses, a binder course (307-B) and a wearing surface (307-C), each composed of a particular combination of aggregate and bituminous material prepared as a hot mix. Both paving courses shall conform to the specifications described in the latest edition of Standard Specifications for Road and Bridge Construction, a publication of the Tennessee Department of Transportation. The binder course shall meet the requirements of Mix 307-B, and shall conform to the applicable dimensions noted in Article IV, Section D of this document. After a suitable tack coat, the wearing surface meeting the requirements of Mix 307-C, shall be applied according to the applicable dimensions also noted in Article IV. The finished pavement surface shall have a minimum crown of two (2) inches to assure the proper drainage of stormwater.

APPENDIX III

PRIME COAT REQUIREMENTS

After a thoroughly compacted and broomed base has been established, a prime coat shall be applied as follows: Between April and November 15 at a temperature of 35 degrees or above, tar grade RT-2 or RT-1 inclusive, or MC-1 or MC-2, shall be applied at the rate of four-tenths (4/10) gallon per square yard of base surface. The stone chips, graded from one-half (1/2) inch down to number eight (8) with no dust, shall be applied at the rate of ten (10) to fifteen (15) pounds per square yard, rolled until thoroughly compacted and left to cure for such time as the relevant road official may direct, but not less than seven (7) days.

APPENDIX IV

TALBOT'S FORMULA FULL CIRCLE DRAINAGE TABLE

This chart is based on Talbot's Formula for determining correct culvert sizes for the area to be drained.

Diameter of Culvert Acres of In Inches	Area of Waterway Opening In Sq. Ft.	Acres of Mountainous Country	Acres of Rolling Country	Acres of Level Country
15	1.227	1	6	11
18	1.767	2	9	18
24	3.142	5	20	39
30	4.909	8	36	71
36	7.068	14	59	115
42	9.621	20	89	175
48	12.566	29	125	250
54	16.000	40	175	345
60	19.635	55	230	455
66	23.760	70	295	585
72	28.274	85	375	735
78	33.183	105	460	910
84	38.484	130	560	1110

MULTIPLE CULVERT INSTALLATION

This table shows the number of smaller diameter culverts equal in water carrying capacity to that of one culvert of larger size. It is based on culverts laid on the same slope.

EXAMPLE: One 24" diameter culvert is equivalent to three 15" culverts or two 18" culverts in water carrying capacity.

Dia. in Inches	15"	18"	21"	24"	30"	36"	42"	48"	54"
15"	1								
18"	1.5	1							
21"	2.2	1.4	1						
24"	3	2	1.4	1					
30"	5	3	2.3	1.7	1				
36"	8	5	3.5	3.6	1.5	1			
42"	11	7	5	3	2.2	1.4	1		
48"	15	10	7	5	3	1.9	1.4	1	
54"	19	13	9	6.5	4	2.6	1.8	1.3	1
60"	25	16	11	8	5	3.3	2.3	1.7	1.3
66"	29	20	14	10	6	4	2.8	2	1.6
72"	37	25	17	12	7.5	5	3.5	2.5	1.9
84"	53	35	25	18	11	7	5	3.6	2.8