

ROADS STANDARDS MANUAL
FRANKLIN COUNTY, TENNESSEE
2014

PREPARED FOR THE:
FRANKLIN COUNTY REGIONAL PLANNING COMMISSION

BY THE:
FRANKLIN COUNTY HIGHWAY DEPARTMENT

WITH ASSISTANCE FROM:
TENNESSEE DEPARTMENT OF ECONOMIC AND
COMMUNITY DEVELOPMENT
LOCAL PLANNING ASSISTANCE OFFICE
NASHVILLE, TENNESSEE

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INTRODUCTION

After a careful study by the Franklin County Highway Commission in regard to what is happening to the development in Franklin County in construction of new subdivisions and roads by private developers, the Franklin County Highway Commission has come to the conclusion that unplanned roads & subdivision development will become expensive to the taxpayers of Franklin County if a little planning and a few regulations are not implemented at this time, before any new roads or subdivisions are added to the County Highway System of roads.

PERMIT MUST BE OBTAINED BEFORE STARTING AND APPROVED AFTER COMPLETION BY THE CHIEF ADMINISTRATIVE OFFICER OF THE HIGHWAY DEPARTMENT.

The information contained in this manual was taken from certain Articles and Sections of the “Franklin County Subdivision Regulations” and put into a condensed format so that only the requirements and standards for road construction are contained in one easy to read manual. The purpose of this manual is to provide those who do construct roads in Franklin County can easily acquire a set of the regulations without obtaining the complete set of subdivision regulations.

This manual is not intended to delete or supersede any Article or Section of the “Franklin County Subdivision Regulations.” Any change in design or alteration of any road being constructed in subdivisions must first receive the approval of the Franklin County Regional Planning Commission.

Only those requirements and standards for road construction are found in this manual. Any other aspect of subdivision development is found in the Subdivision Regulations of Franklin County. Copies of those regulations can be made available at the Franklin County Planning & Zoning Office, located at the Franklin County Courthouse, Winchester Square.

**GENERAL REQUIREMENTS FOR ROADS
AND OTHER RIGHT-OF-WAYS ***

CONFORMANCE TO ADOPTED MAJOR THOUROUGHFARE PLAN

All roads and other features of the Major Thoroughfare Plan of Franklin County, Tennessee, shall be in the location and to be dimensions indicated on the Major Thoroughfare Plan adopted by the Planning Commission.

CONTINUATION OF EXISTING ROADS

Existing roads shall be continued at the same or greater width, but in no case less than the required width.

ROAD CONNECTIONS

Where proposed roads are to adjoin existing roads, the developer must make the connection at his expense and meet all road design requirements set forth in these regulations and also the subdivision regulations.

ROAD ELEVATIONS

The Planning Commission may require, where necessary, profiles and elevations of roads in areas subject to flood, as defined in these regulations. Fill may be used for roads provided such fill does not unduly increase flood heights. Drainage openings shall be so designed as to not restrict the flow of water and unduly increase flood heights. Drainage openings shall be so designed as to not restrict the flow of water and unduly increase flood heights. The minimum road elevation shall be no lower than the elevation for a flood of 50 - year frequency of occurrence.

The authority for establishing the 50 – year frequency of occurrence flood elevation shall be the Tennessee Valley Authority’s Flood Control Branch.

ROAD NAMES

The road names shall require the approval of the Planning Commission. Roads that are obviously in alignment with roads already existing and named shall be given the name of the existing road. Before assigning any road or lot a number, the developer shall first contact the E-911 Director of Franklin County in order to locate the correct road name and number.

RESTRICTION OF ACCESS

When a tract fronts on an arterial or highway, The Planning Commission may require such lots to be provided with frontage on a marginal access road or may require reverse frontage lots.

*These requirements are found in the Franklin County Subdivision Regulations.

ALLEYS

Alleys may be required at the rear of all lots used for multi-family, commercial or industrial developments but shall not be provided in one-and two family residential developments unless the subscriber provides evidence satisfactory to the Planning Commission of the need for alleys.

PRIVATE ROADS

There shall be no private roads platted in any subdivision unless such private roads are constructed to the same standards found in these regulations, as required for roads which are to be county-maintained.

REQUIREMENTS FOR PRIVATE ROADS

If private roads are to be constructed in any subdivision and has received the planning commission's approval, the following conditions shall be met:

- a. The private road must not connect between two (2) or more public roads.
- b. The fact that the private road is private shall be noted on the subdivision plat and in the individual deeds.
- c. The actual private road shall be marked with signs stating "Private Road".
- d. The private road shall meet the specifications set forth in Article of these regulations.
- e. An additional certification shall be added to the plat defining the ownership of said private road.

RESERVE STRIPS

There shall be no reserve controlling access to roads, except where the control of such strips is definitely placed with the county under conditions approved by the Planning Commission.

EASEMENTS

Easements having a minimum width of ten (10) feet shall be provided where deemed necessary along each side or rear lot line for utility lines and underground mains and cables. Easements of the same or necessary greater width shall be required along the lines of, or across lots, where necessary for the extension of existing or planned utilities.

Where a subdivision is traversed by a water course, drainage way, channel or stream, there shall be provided a storm-water or drainage right-of-way of adequate width. Parallel roads may be required by the Planning Commission in connection therewith.

**SPECIFIC DESIGN REQUIREMENTS FOR ROADS AND OTHER
RIGHT-OF-WAY**

ROAD RIGHT-OF-WAY WIDTHS

The right-of-way width shall be the distance across a road from property line to property line. Minimum road right-of-way widths shall be as follows.

- a. Primary Collector roads.....50 feet
- b. Minor Roads.....50 feet
- c. Marginal Access Roads.....50 feet
Marginal access roads are minor roads which are parallel to and adjacent to arterial roads and highways; and which provides access to abutting properties and protection from through traffic.
- d. Alleys.....20 feet
- e. Cul-de-sacs.....50 feet
Cul-de-sacs are permanent no outlets or courts designed so that they cannot be extended in the future.

Except where topographic or other conditions make a greater length unavoidable, cul-de-sacs, or no outlet shall not be greater in length than five hundred (500) feet. They shall be provided at the closed end with a turn-around having a property line radius of at least fifty (50) feet with an outside pavement radius of at least forty-five (45) feet.

- f. Temporary Cul-de-sacs.....45 feet
Where, in the opinion of the Planning Commission, it is desirable to provide for road access to adjoining property, proposed roads shall be extended by dedication to the boundary of such property. Such no outlet roads shall be provided with a temporary turn-around having a property line radius of at least fifty (50) feet with an outside pavement radius of at least forty-five (45) feet.
- g. One Lane Roads.....350 feet
One lane roads may not exceed three hundred fifty (350) feet of length. They shall have no less than a thirty (30) foot right-of-way with a pavement width of fourteen (14) feet. Construction must meet surface course requirements in this manual. Revised January 1, 2006.

If at all possible one way streets are to be discouraged. They must be approved by Chief Administrative Officer of the Highway Department in conjunction with Highway Commission approval.

ADDITIONAL WIDTH ON EXISTING ROADS

Subdivisions that adjoin existing roads shall dedicate additional right-of-way to meet the minimum road width requirements.

- a. The entire right-of-way shall be dedicated where any part of the subdivision is on both sides of the existing road, and
- b. Where the subdivision is located on only one side of an existing road, the amount of right-of-way to be dedicated is as follows:
 - 1. If the land across the roadway from the proposed subdivision has not been subdivided or developed, the sub divider is only required to dedicate one-half of the required right-of-way, measured from the center line of the existing roadway.
 - 2. If the land across the roadway has been subdivided or developed, the sub divider is required to provide enough additional right-of-way on his side of the roadway to bring the total right-of-way to be no less than fifty (50) feet.
- c. In cases where right-of-ways in excess of fifty (50) feet are required, additional widths shall be reserved and when used just compensation therefore shall be paid by the condemning authority.

ROAD PAVEMENT WIDTHS

Road pavement widths shall be as follows:

- a. Secondary Collectors.....22 feet
- b. Minor (Neighborhood).....22 feet
- c. Alleys.....18 feet
- d. Cul-de-sacs.....45 feet
- e. One Lane Roads.....14 feet
- f. Through proposed neighborhood or local business areas the road widths shall be increases of ten (10) feet on each side to provide for turning movements of vehicles into and out of necessary off-road parking areas without interference to traffic.

NOTE: The pavement widths are measured from inside of curb to inside of curb. These widths are considered the minimum necessary to accommodate modern traffic. All Arterials and Collector are designed to be high-volume, high-speed traffic movers. At no time should parking be allowed along Arterials or Collectors; however in the case of Local Roads, road parking must be considered in the pavement width. Where no road parking is permitted or none is anticipated, allowances can be made. A parallel parking lane normally requires eight (8) feet.

ROAD GRADES

Maximum and minimum road grades review Typical Tangent Section Type One and Type Two.

NOTE: These road grade limits are considered to be the optimum requirements to provide adequate safety. Different topographical situations may necessitate adjustment. The minimum grade requirement is necessary for drainage purposes. In this regard, it should be considered that in addition to accommodating traffic, roads are the heart of the surface drainage system.

HORIZONTAL CURVES

Where a deflection angle of more than ten (10) degrees in the alignment of a road occurs, the road shall have a centerline radius of no less than the following:

- a. Arterials.....300 feet
- b. Collectors.....200 feet
- c. Minor Roads.....100 feet
- d. One Lane Roads.....100 feet

VERTICAL CURVES

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 sight distance being measured from the driver's eyes, which are assumed to be four and one half (4 ½) feet above the pavement, to an object four (4) inches high on the pavement. Where, in the opinion of the Planning Commission, topography warrants its profiles of all roads showing natural and finished grades drawn to a scale of not less than one (1) inch equals one hundred (100) feet horizontally and one (1) inch equals twenty (20) feet vertically may be required.

INTERSECTIONS

Road intersections shall be as nearly at right angles as is possible, and no intersection shall be at an angle of less than sixty (60) degrees.

Curb radii at road intersections shall not be less than twenty (20) feet, and where the angle of a road intersection is less than seventy-five (75) degrees; the Planning Commission may require a greater curb radius. Wherever necessary to permit the construction of a curb having a desirable radius without curtailing the sidewalk at a road corner to less than normal width, the property line at such road corner shall be rounded or otherwise setback sufficiently to permit such construction.

TANGENTS

Between reverse curves there shall be tangent having a length not less than one hundred (100) feet.

ROAD JOGS

Road Jogs with centerline off-sets of less than one hundred fifty (150) feet shall not be allowed.

REQUIRED SITE IMPROVEMENTS

Prior to approval, an agreement shall be reached between the sub divider or his agent and the County Government with regard to the installation of any road improvements or utility construction called for in the subdivision. The sub divider shall be required to have installed at his expense the following improvements.

NOTE: The sub divider at his expense, may contract with any licensed construction company to install the necessary improvements.

GRADING

All roads, streets and alleys shall be graded to the required cross section. Due to special topographical conditions, deviation from the above will be allowed only with special approval of the Planning Commission. Where roads are constructed under or adjacent to existing electric transmission lines, the nearest edge of the roadway surface shall be a minimum of fifteen (15) feet from any transmission line structure and all grading for the road shall be done in a manner which not to disturb the structure or clearance from the road to the nearest conductor. The conductor shall meet the requirements of the National Electrical Safety Code.

- a. Preparation – Before grading is started the entire right-of-way area shall be first cleared of all stumps, roots, brush and other objectionable materials and all trees not intended for preservation.
- b. Cuts – All tree stumps, boulders and other obstructions shall be removed to a depth of two (2) feet below the sub grade. Rock, when encountered, shall be sacrificed to a depth of twelve (12) inches below the sub grade. This provision applies to the roadway and not necessarily to the entire right-of-way.
- c. 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 compacted by a sheep's foot roller. The filling of utility trenches and other places not accessible to a roller shall be manually tamped.

INSTALLATION OF UTILITIES

After grading is completed and approved and before any base is applied, all of the required underground work – water mains, sewer lines, gas mains, etc., and all service connections shall be installed completely and approved throughout the subdivision.

REQUIRED INSPECTIONS DURING ROAD CONSTRUCTION

Before road construction begins the developer shall contact the Superintendent of the Highway Department as notification and to discuss pre-construction project specifications. While road construction is taking place, inspections shall be made by the Superintendent of the Highway Department before, during and after each step process and prior to the next course or procedure. The Superintendent of the Highway Department shall check the width, depth and crown of the road among other things. Weight tickets showing the type, class, weight of gravel and surfacing material shall be furnished to the Superintendent of the Highway Department after completion of each step.

STREET OF ROAD BASE

When Hot Mix topping (Grade CW) is applied at the rate of one hundred forty nine (149) pounds per square yard, or one and one quarter (1 ¼) inches, and road leveling at two (2) inches or two hundred twenty (220) pounds per square yard of Grade C. Mineral Aggregate 303-02 shall be compacted to a minimum of four (4) inches. This does not change the six (6) inch requirement when the base is completed, the developer must notify the Superintendent of the Highway Department and allow his office time to inspect the base before proceeding to the installation of the surface course.

SURFACE COURSE

NOTE: Subdivision roads shall have an asphaltic concrete (hot mix) surface course as further specified.

- a. The Asphaltic Concrete Surface Course hot mix (Grade CW) shall be constructed with asphaltic concrete to a minimum compacted thickness of one and one quarter (1 ¼) inches. In all cases it shall have not less than an average weight of one hundred forty nine (149) pounds per square yard and asphalt level Grade C at a rate of two (2) inches at two hundred twenty (220) pounds per square yard. Bituminous plant-mix base (hot mix) shall be in accordance to the Tennessee Department of Transportation's "Standard Specifications for Roads and Bridge Construction" (or any subsequent revisions), March 1, 1981. When the surface course is completed the developer must notify the Superintendent of the Highway Department and allow his office time to inspect the surface course in the third and final inspection. At the time of notification, the developer is required to provide a job-mix formula to the Superintendent of the Highway Department to ensure that proper materials and standards will be used during construction.

STORM DRAINAGE

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. The size of the culvert shall be determined by the Franklin County Road Superintendent. Cross drains should be provided to accommodate all natural water flow and shall be sufficient length to permit a full width roadway and the required slopes. The size and location of cross drains shall be determined by the U.S. Soil and Water Conservation Service, but in no case shall they be less than fifteen (15) inches in diameter. All storm drainage contained in pipes or culverts under the roadway must be concrete, have TDOT's (Tennessee Department of Transportation) stamp of approval, and have end walls, head walls, or rip-rap with a concrete apron wall where necessary to prevent erosion. The size and location of cross drains shall be determined by a licensed engineer, architect, or surveyor if the Superintendent of the Highway Department determines that the development is of such size as to require it, but in no case shall they be less than fifteen (15) inches in diameter. If drainage engineering data is compiled for the development, copies of said data shall be furnished to the Superintendent of the Highway Department.

SIDEWALKS

For the safety of pedestrians or on approaches to community facilities, (schools, parks, etc.) installation of sidewalks on both sides of the roads shall be required of the developer when considered to be necessary by the Planning Commission.

When sidewalks are required the following specifications shall be met; Sidewalks shall be located no less than one (1) foot from the property line to prevent interference or 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 development 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.

CURBS AND GUTTERS, OR ROAD SHOULDERS

Within Franklin County, the sub divider shall provide one of the illustrated types of concrete or asphalt curbs and gutters, or three (3) feet of gravel shoulders on each side of the paved surface. Where curbs and gutters are installed, backfill shall slope as shown in "Typical Tangent Section, Type 2", and shall be higher than the curb to ensure drainage of surface water into storm drainage system. Where gravel shoulders are installed, the shoulders shall be constructed as shown in "Typical Tangent Section, Type 1".

GUARANTEE IN LIEU OF COMPLETED IMPROVEMENTS

No final subdivision plat shall be approved by the Planning Commission or accepted for record by the County Register of Deeds until one of the following conditions have been met;

- a. All required improvements have been constructed in a satisfactory manner and approved by the Planning Commission.
- b. The Planning Commission has accepted a surety bond or certified check 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 or county in the event of default by the sub divider.

NOTE: The Planning Commission should contact the appropriate official to determine cost estimates of the necessary improvements.

EROSION CONTROL

The development of land usually necessitates some degree of grading, excavating or the removal of topsoil, trees and vegetation. Such major changes in the landscape usually produce adverse conditions to adjoining properties, public drainage facilities, and right-of-ways. Erosion and sedimentation become even more serious when changes in the landscape occur on moderately to steeply-sloped land.

- a. Detailed Erosion/Sedimentation/Highway Chief Administrative Officer Control Plan may be required - When deemed necessary, the County Engineer shall require that a detailed erosion/sedimentation control plan be submitted with the plat, and that the developer use appropriate control measures to ensure that erosion, or adverse conditions caused by erosion or sedimentation, is eliminated or help to a minimum during the development of the subdivision and after its completion.

- b. Control Measures – The following control measures should be used on all subdivisions of effective control of erosion and sedimentation;
 1. The development plan for the subdivision should be fitted to the topography and soils to reduce erosion.
 2. The smallest practical are of land should be exposed at any one time during development.
 3. When land is exposed during development, the exposure should be kept to the shortest practical period of time. No disturbed lot area or road side area shall be left exposed (without some planted or seeded vegetation) for longer than three (3) months.
 4. Mulching or other temporary protective measures should be used to protect exposed areas during development.
 5. Temporary furrows, terraces, sediment or debris basins should be installed to prevent washing and erosion during construction and during the time between road surfacing.
 6. The permanent final vegetation and road pavement should be installed as soon as practical in the development after the land area is exposed.

NOTE: When peak runoffs are substantially increased by development, detention ponds or other special means may be required to hold flood waters form downstream properties until these waters can be released slowly.

- c. Determination of Peak Runoff's – For drainage areas up to two hundred (200) acre, the Rational Formula may be used for determining peak runoffs. Soil Conservation Service (SCS) methods may be used for watersheds up to two thousand (2000) acres. For larger watersheds, flood frequency methods of Corps of Engineers' Method may be used. The Burki-Ziegler Formula or Talbot Formula shall not be used for any watershed.

REGULATIONS FOR ACCEPTANCE OF ROADS TO FRANKLIN COUNTY HIGHWAY DEPARTMENT ROAD SYSTEM

Regulations that must be met before any new road or subdivision roads will be added to the Franklin County Highway Department Road System;

1. A fifty (50) foot cleared right-of-way will be required.
2. Must have a thirty (30) foot minimum graded road surface, with six (6) inches of compacted crushed stone in place from shoulder to shoulder, width being no less than thirty (30) feet. AEP Prime shall be applied at .28 per square yard, allowing seventy two (72) hours before paving.
3. Grading of sub grade road surface shall be performed in such a manner as to provide adequate drainage of water from sub grade. Ditches and drains shall be maintained to provide drainage.
4. Compaction of sub grade and stone is required.
5. All cross drains and side drains must be installed by developer and all side drains no less than fifteen (15) inches in diameter or as directed by the Chief Administrative Officer will be installed. County Highway Department will not be responsible for any tile or drains for ingress or egress to any development.
6. Compaction of each phase of construction must be proof rolled with truck of no less than twenty one (21) tons.
7. Erosion Control must be provided.
8. All cul-de-sac and turn around must have a radius of no less than forty five (45) feet from the center point of a cul-de-sac or turn around.
9. Developers will be responsible for all signs such as stop, street, road name, or any other that will be required for the safety of the road or subdivision, or as directed by the Chief Administrative Officer.
10. Subdivision roads must be paved with one and one quarter (1 ¼) inches of Hot Mix topping (Grade CW) and a leveling course Grade C at two (2) inches. The Hot Mix must be a minimum of twenty two (22) feet wide and must have shoulder stone, unless curb or sidewalks are necessary.
11. Center lines and side lines must be painted with reflector pain, a minimum of four (4) inches in width.
12. After completion of said development it must be checked by the Franklin County Highway Department and given a completion permit signed by Chief Administrative Officer.

A copy of all permits and documents must be given and approved by the Planning Commission along with the Highway Commission and Chief Administrative Officer before acceptance to County Highway System.

NOTE: Documents must include plat.

Clyde Hill, Jr., Chairman

Chuck Tipps, Secretary

Joe David McBee, Commissioner

Bobby Clark, Commissioner

**John W. Woodall
Chief Administrative Officer**