SUBDIVISION REGULATIONS

CITY OF LEBANON, TENNESSEE

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 in 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.

The Major Thoroughfare Plan, of which certified copies were initially filed in the office of the Register of Wilson County, Tennessee on June 9, 1954 (Latest revision April 2, 2009) and the following standards guiding the City of Lebanon Planning Commission are designed to provide for the harmonious development of the area; to secure a coordinated layout and adequate provision for traffic and also to secure adequate provision for light, air, recreation, transportation, water, drainage, sewer and other sanitary facilitates.

B. Authority

These subdivision regulations were adopted under the authority granted by Sections 13-4-301 through 13-4-309, Tennessee Code Annotated. The Planning Commission has fulfilled the requirements set forth in these acts as prerequisite to the adoption of such regulations.

C. Jurisdiction (as amended 3/20/09)

These regulations shall govern all subdivision of land within the corporate limits of Lebanon as now or hereafter established, and within the Lebanon Planning Region as established by resolution of the Tennessee State Planning Commission. Within these regulations the term "subdivision" shall mean the division of a tract or parcel of land into two 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. Any owner of land within this area wishing to subdivide land shall submit to the Lebanon 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 regulations.

When a subdivision is presented that involves a minor adjustment to a property line, combining lots, divides a single tract into no more than two lots, or which involves adjusting building lines, easements or other similar changes and does not involve any streets or public utility construction to serve such lot(s), the approval may be endorsed in writing on the plat by the Secretary of the Planning Commission upon certification by members of the Planning and Engineering Staff that the plat complies in all respects with these regulations and all other adopted ordinances and policies of the governing body. No plat may be approved under this provision if such plat involves a request for a deviation from these regulations or if such plat is not in total compliance with all ordinances and/or policies of the city as determined by the Planning and Engineering Staff. Any person authorized to endorse approval in writing on the final plat may refuse to provide such approval and request consideration of the plat by the Planning Commission at their next regularly scheduled meeting. Review for compliance with these regulations and all other adopted ordinances and policies of the governing body will follow the final routing policy employed by the Planning and Engineering Staff and thus will take approximately one week.

Planning Staff shall report to the Planning Commission at their regularly scheduled meeting any and all minor plats that have been approved since the last report.

ARTICLE II: PROCEDURE FOR PLAT APPROVAL

The procedure for review and approval of a subdivision plat consists of two 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 construction drawings (2 sets) and certificates for staff review. This Final Plat becomes the instrument to be recorded in the office of the County Register when duly signed by the City/Utilities Engineer, or his/her designee and the Secretary of the Planning Commission.

The applicant should consult early and informally with the Planning Commission and its technical staff for advice and assistance before preparation of the Preliminary Plat and its formal application for approval. This will enable the applicant to become familiar with these regulations, the Major Thoroughfare Plan and other official plans or public improvements which might affect the area. Such informal review should prevent unnecessary and costly revisions. Along with any submittal, proof of ownership or a contract for purchase shall be provided.

A. General

1. Any owner of land lying within the area of jurisdiction of the Planning Commission wishing to divide such land into two or more lots, sites, or divisions, for the purpose, either immediate or future, of sale or building development, or wishing to resubdivide for this purpose, shall submit a plan of such proposed subdivision to the Lebanon 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 section of this article. No plat of a subdivision of land within the Lebanon, Tennessee Region shall be filed or recorded by the Register of Wilson County without the approval of the Planning Commission as specified herein.

2. In order to secure review and approval by the Planning Commission of a proposed subdivision, the applicant shall, prior to the making of any street improvements or installations of utilities submit to the Planning Commission a Preliminary Plat as provided in Section B below. On approval of said Preliminary Plat, the applicant may proceed with the preparation of the Final Plat and other documents required in connections therewith as specified in Section C and the improvements set forth in Article IV.

B. Preliminary Plat

1. In accordance with the meeting calendar submission deadline, the applicant shall submit to the Planning Commission twenty-five (25) copies of the Preliminary Plat of the proposed subdivision drawn to a scale of not less than one inch equals one hundred (100) feet on sheets no larger than 24 inches by 36 inches.

2. The Preliminary Plat shall meet the minimum standards of design and the general requirements for the construction of public improvements as set forth in Article III and shall give the following information:

   a. The proposed subdivision name and location, the name and address of the owner or owners including the name, address and telephone number of a trustee or contact person, and the name of the designer of the plat who shall be a *licensed* surveyor as recognized by the State of Tennessee licensing board.

   b. Date, approximate north point, and graphic scale.

   c. The location of existing and platted property lines, streets, buildings, water courses, railroads, sewers, bridges, culverts, drain pipes, water mains, gas lines, electric transmission lines, and any public utility easements, the present zoning classification, both on the land to be subdivided and on the adjoining land, and the names of adjoining property owners and/or subdivisions. Existing features shall be distinguished from those that are proposed.

   d. Plans of proposed utility layouts (sewers, water, etc.) showing feasible connections to the existing or any proposed utility systems. When such connections are not considered practical, any proposed individual water supply and/or sewage collection and disposal system must be approved by the City/Utilities Engineer and the appropriate State of Tennessee Departments. For additional requirements see Article IV, A, Sections 7 and 8.

   e. The names, locations, widths and other dimensions of proposed streets, alleys, easements, parks, and other open spaces, reservations, lot lines, building setback lines, and utilities.

   f. Contours at vertical intervals of not more than two (2) feet for those areas appearing on the Lebanon topographic maps. For other areas contours shall be at vertical intervals of not more than five (5) feet.

   g. The acreage of the land to be subdivided and bearings and dimensions of property boundary.

   h. Location sketch map showing relationship of subdivision site to area.

   i. Present tract designation according to official records in the office of the appropriate recorder.

   j. Location and elevation of the 100-year floodplain; location of the floodway.

k. The following notes shall also appear:

"Streets shall be built to the road specifications in force at the time of construction."

"Road construction shall not begin without approval of the City of Lebanon Department of Public Works."
"This property is not (is) in an area designated as a special flood area, as shown on Community Map/Panel Number _____/_____, Effective date _____."
If a stream appears as a blue line on a USGS 7½ minute quadrangle map, the following note shall appear: "No alterations of this (these) stream(s) shown will occur prior to written approval being granted by the appropriate authorities."

l. Items on the Preliminary Subdivision Plat Checklist shall be shown on the plat upon submittal. The owner/developer or authorized agent shall complete and attach the checklist to the submittal. (See Appendix A)

m. At a minimum, preliminary drainage calculations, conceptual design layout of site drainage and storm water quality provisions and identification of at least two downstream structures.

3. Within thirty (60) days of the date of the Planning Commission meeting at which the Preliminary Plat is first considered, unless a deferral is agreed to by the applicant, the Planning Commission will review the plat and indicate its approval, disapproval, or approval subject to modifications as a basis for the preparation of the Final Plat. 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 will be indicated.

4. The approval of the Preliminary Plat by the Planning Commission will not constitute acceptance of the Final Plat and shall not be indicated on the Preliminary Plat.

5. Failure of the Planning Commission to act on the Preliminary Plat within sixty (60) days of the Planning Commission meeting at which it is first considered will be deemed approval of this plat unless a longer time frame is agreed to by the applicant.

6. A revised, according to any conditions of the Planning Commission's approval, Preliminary Plat shall be submitted to staff prior to the Planning Commission considering approval of any Final Plats. One (1) copy of the approved Preliminary Plat will be retained in the Planning Commission files; the other will be returned to the applicant.

7. The approval of the Preliminary Plat shall lapse unless a Final Plat based thereon is submitted within one (1) year from the date of such approval unless an extension of time is applied for and granted by the Planning Commission. Approval of any time

extension is at the discretion of the Planning Commission. When considering approval of a time extension, the Planning Commission may require the Preliminary Plat comply with any regulations adopted since it was originally approved.

8. Approval of a Preliminary Plat shall not constitute approval of roads, grading and/or drainage plans.

C. Final Plat

1. The Final Plat shall conform substantially to the Preliminary Plat as approved, and, if desired by the applicant, it may constitute only that portion of the approved Preliminary Plat which is proposed to be recorded and developed at the present time, provided, however, that such portion conforms to all requirements of these regulations.

2. In accordance with the meeting calendar submission deadline, the applicant shall submit the required number of Preliminary/Final Plats and Construction Drawings as noted on the application and other plans that may be required by the Planning Commission and/or Staff.

   The plat shall be drawn to a scale of not less than one (1) inch equals one hundred (100) feet on sheets not larger than twenty-four (24) inches by thirty-six (36) inches. When more than one sheet is required, an index sheet of the same size shall be filed showing the entire subdivision with the sheets lettered in alphabetical order as a key.

   After the plat has been approved by the Planning Commission one copy will be submitted to staff for execution of signatures then returned to the applicant, for filing with the County Register as the official plat of record.

   One copy of the approved and duly recorded plat shall then be submitted to the Planning Staff for inclusion in the file.

3. The Planning Commission shall approve or disapprove the Final Plat within sixty (60) days of the date of the Planning Commission meeting at which the Final Plat is first considered, unless a deferral is agreed to by the applicant. Failure of the Planning Commission to act on the Final Plat within sixty (60) days shall be deemed approval of it. If the plat is disapproved the grounds for disapproval shall be stated in the minutes 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 streets or other public way or ground.

5. A Final Plat must be recorded within twenty-four (24) months after approval by the Planning Commission or it becomes void.

6. The Final Plat shall show:

    a. The lines of all streets and roads, alley lines, lot lines, building setback lines, lots numbered in numerical order, reservations, 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 (100^{th}) of a foot and angles to the nearest minute.

    d. Locations and descriptions of monuments, pins, etc.

    e. The names and locations of adjoining subdivisions and streets and the location and ownership of adjoining un-subdivided property.

    f. Date, title, name and location of subdivision, graphic scale, and true north point.

    g. Location sketch map showing site in relation to surrounding area.

    h. Certification showing that applicant is the landowner and dedicates streets, rights-of-way and any sites for public use. (Appendix A, Form 1)

    i. Certification by surveyor or engineer to accuracy of survey and plat and placement of monuments. (Appendix A, Form 2)

    j. Certification by the County Health Officer when individual sewage disposal or water systems are to be installed. (Appendix A, Form 3)

    k. Certification by local approving agent (city engineer) (Appendix A, Form 4) that the subdivider has complied with one of the following alternatives:

        1. All improvements have been installed in accordance with the requirements of the regulations, or

        2. A Letter of Credit has been posted in sufficient amount to ensure completion of all such required improvements. The Letter of Credit shall be from a local bank located within one hour drive of the City of Lebanon. (as amended 10/27/09)

    l. Certification of approval to be signed by the Secretary of the Planning Commission (Appendix A, Form 5).

    m. Total acreage of entire development, acreage of this phase and road frontage of any remaining acreage to be developed.

    n. Location of the 100-year floodplain; location of the floodway; descriptions of monuments to locate floodplain/floodway boundary; 100-year flood elevation; minimum finished floor elevations two feet above the 100-year flood elevation,

one foot for garages/carports, for lots in the floodplain (or subject to local flood hazard).

o. Size and location of culverts; location and description of proposed erosion controls.

p. Location, description, and elevation of benchmark(s) within the subdivision.

q. The following notes shall appear:

"Streets will be built to the road specifications in force at the time of construction."

"Road construction shall not begin without approval of the City of Lebanon Department of Public Works."

"This property is not (is) in an area designated as a special flood area, as shown on Community Map/Panel Number _____/_____, Effective date _____."

If a stream appears as a blue line on a USGS 7½ minute quadrangle map, the following note shall appear: "No alteration of this (these) stream(s) shown will occur prior to written approval being granted by the appropriate authorities."

When a development is located within the 100-year floodplain and fill is proposed to elevate building sites, the following note shall appear, "Certification that proposed fill is in place to the specified elevation shall be provided to the Building Official prior to issuance of a building permit."

Natural drainage and sinkhole note (if applicable).When a natural drainage channel (or sinkhole/depression) exists on a property, sufficient data must be provided to show that any disturbance of the natural drainage channel (or sinkhole/depression) can be accomplished with a minimal impact on the performance of the storm water drainage system in the area. (Otherwise the above-mentioned note "If a stream appears as ----------" must appear.)

"Drainage easements outside dedicated R.O.W.'s are not the responsibility of Wilson County or the City of Lebanon."

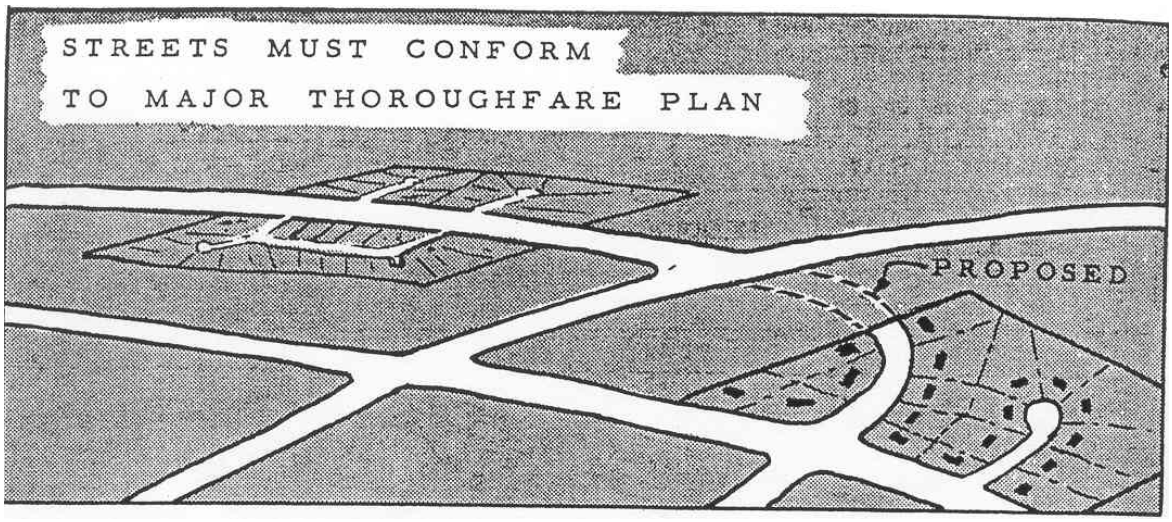
r. All items on the Final Subdivision Plat Checklist be shown on the plat upon submittal. The owner/developer or authorized agent shall complete and attach the checklist to the submittal. (See Appendix B).

ARTICLE III: GENERAL REQUIREMENTS & MINIMUM STANDARDS OF DESIGN

A. Streets

1. Conformity to the Major Thoroughfare Plan

   The location and width of all streets and roads shall conform to the official Major Thoroughfare Plan, which may include a Major Street Plan within a municipality and/or a Major Road Plan within an unincorporated area.



2. Relation to Adjoining Street System

   The proposed street system shall extend existing streets or projects at the same or greater width, but in no case less than the required minimum width.

3. Street Widths

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

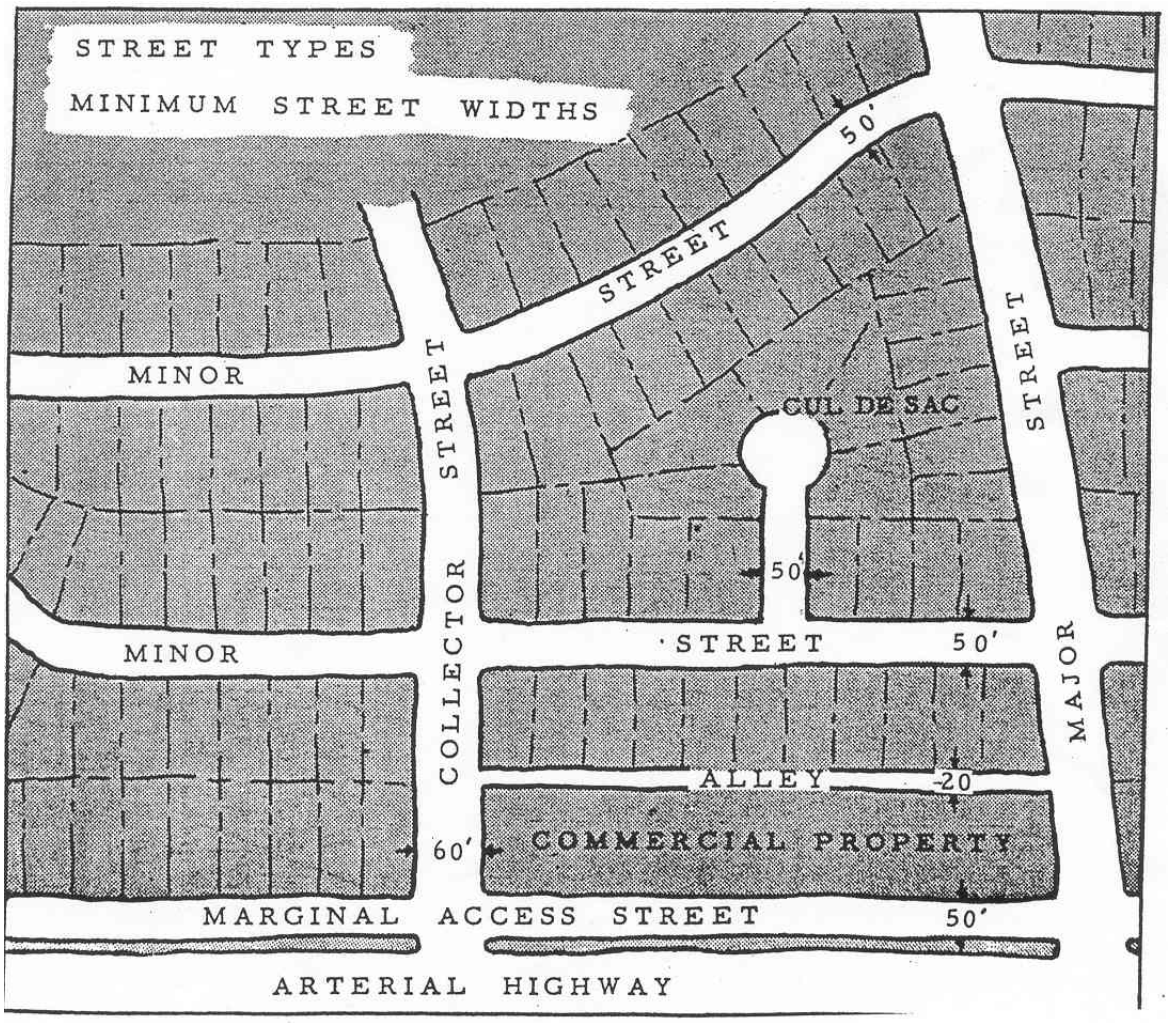
   a. Arterial Streets and Highways……80 - 160 feet may be required
      Arterial streets and highways are those to be used primarily for fast or heavy traffic and will be located on the Major Thoroughfare Plan.

   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 Streets……..……50 feet
Minor streets are those, which are used primarily for access to the abutting properties and designed to discourage their use by through traffic.

d. Dead-end Streets (cul-de-sac)……..50 feet
Cul-de-sacs are permanent dead-end streets or courts designed so that they cannot be extended in the future.

e. Alleys……..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 impractical, the Planning Commission may modify the above requirements. If on-street parking is proposed and approved, the street widths shall

be increased ten (10) feet on each side to provide parking without interference of normal passing traffic.

4. Additional Width on Existing Streets

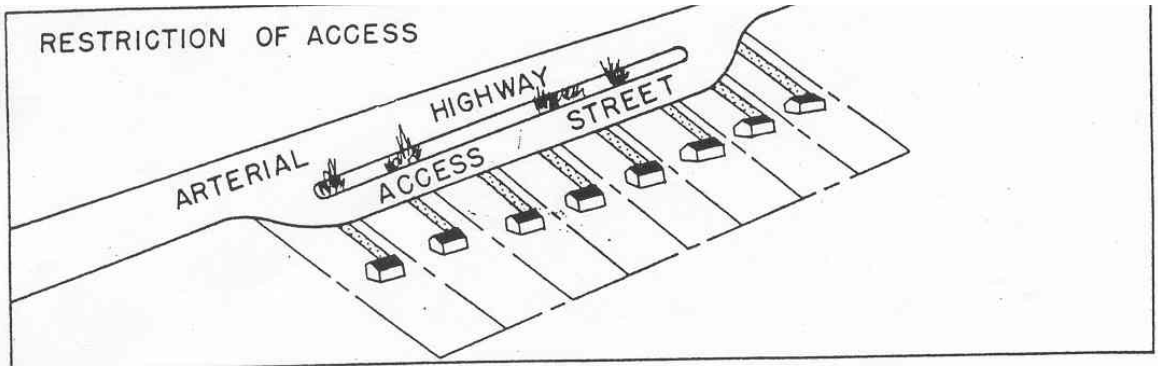
   Subdivisions that adjoin existing streets shall dedicate additional right-of-way to meet the minimum street width requirements.

   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. In no case shall the resulting right-of-way width be less than fifty (50) feet. At a minimum, one-half of the required right-of-way shall be dedicated.

5. Restriction of Access

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



6. Access to Existing Public Roads (as amended 3/25/08)

   Two points of access to an arterial or collector street shall be required for all residential developments consisting of 125 or more lots (and or units). The second point of access may connect to adjacent developments as long as the adjacent development had direct access to an arterial or collector street. In certain limited instances where the second point of access cannot be reasonably provided, a traffic study is required to demonstrate that an adequate level of service can be met. All traffic studies are subject to review by Staff and an independent professional to determine if recommendations are consistent with all transportation programs and needs.

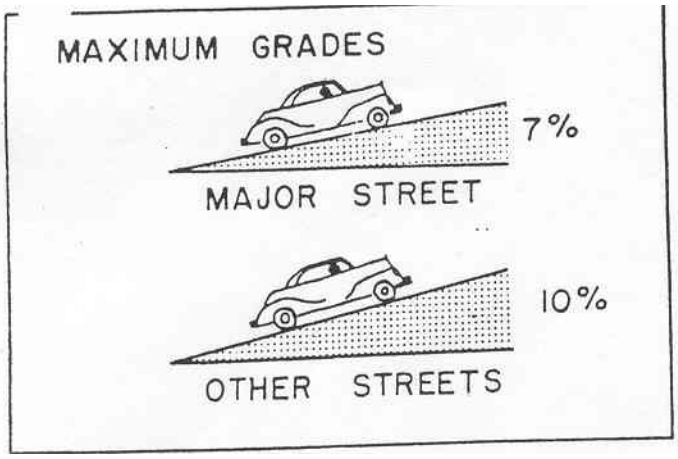
   Additionally, traffic studies may be required to be completed by the developer or individual proposing the subdivision at the request of either Staff or Planning

Commission. The traffic study is intended to provide information as to current and proposed or projected traffic levels along streets touching, immediately abutting or directly impacted by the subdivision.

When a street stubs to the subject property, such stub shall be extended through the subject property.

7. Street Grades

The minimum grade for a street with curbs shall be one (1) percent. Grades on major streets shall not exceed seven (7) percent. Grades on other streets may exceed seven (7) percent but not ten (10) percent.



8. Horizontal Curves

See Table 1.1 for specific street design standards.

9. Vertical Curves

See Table 1.1 for specific street design standards.

TABLE 1.1 – STREET DESIGN STANDARDS (as amended 10/27/09)

(#) Indicates applicable note.

	ARTERIAL		COLLECTOR			LOCAL	
			MAJOR		MINOR		
	Major (1)	Minor (1)	Commercial & Industrial	Residential	Residential	Commercial & Industrial (1)	Residential (1)
Design Speed (2)	50 MPH	45 MPH	50 MPH	45 MPH	35 MPH	35 MPH	35 MPH
Right of Way Width-Minimum (3)	100 Ft	80 Ft	60	60	60	60	50
Number of Lanes (7)	3	3	2	2	2	2	2
Traffic Lane Width	12	12	12	12	11	12	11
Minimum Horizontal Curve Radius (4)	1200 Ft	1200 Ft	1,039 Ft	1,039 Ft	510 Ft	510 Ft	510 Ft
Maximum Grade	6%	6%	7%	7%	7%	7%	10%
Minimum Sight Distance (5)	475 Ft	400 Ft	475 Ft	400 Ft	250 Ft	250 Ft	250 Ft
"K" Value for Crest Vertical Curve (6)	84	61	84	61	29	29	29
"K" Value for Sag Vertical Curve (6)	96	79	96	79	49	49	49

NOTES:

(1) See standard drawing details for sidewalk locations, curb types, inlets and alley requirements.

(2) The City's minimum design speed is ~~25~~ *35* MPH. Lower design speeds will require approval of the Lebanon Municipal Planning Commission.

(3) Where fill or cut slopes, utilities, roadway features, or other highway development must be included, additional right-of-way may be required.

(4) Where a deflection angle of more than 10˚ in the alignment of a street occurs, a long radius curve shall be introduced. For multi-lane facilities, the centerline is to be considered as the centerline for each direction of traffic.

(5) Minimum sight distance is based on the stopping site distance. For a horizontal curve, this is to be measured along the centerline of the inside lane around the curve with the site line being chord of curve.

(6) "K" values are the coefficients by which the algebraic difference in grades shall be multiplied by to determine the minimum length in feet for the specific vertical curve (L=KA).

(7) Minimum values - subject to a traffic impact study. A traffic study may require additional lanes.

(8) This distance is the minimum centerline radius with no superelevation.

(9) Variations from the above criteria shall be made at the sole discretion of the City Engineering Department when warranted based upon review and approval of engineering evidence/criteria presented to the Engineering Department by a registered engineer.

10. Intersections

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

a. At street intersections in residential areas, the minimum radius of the curb return shall be twenty-five (25) feet. In commercial and industrial areas, and when a residential street intersects with a non-residential street, the minimum curb return radius shall be thirty (30) feet. (Appendix C, ST-327)

b. Should the expected right-turning truck volume exceed ten (10) vehicles per hour in the design hour, then the designer shall use larger radii or three-centered compound curves to provide for the turning movement of the larger vehicles.

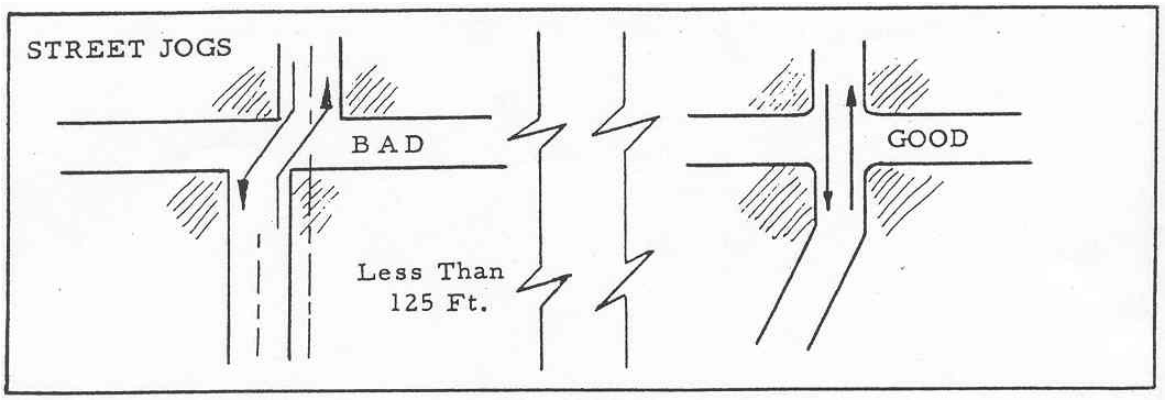
c. Where the angle of the street intersection is less than ninety (90) degrees, the Street Department may require greater radii.

d. Intersections with arterial and major collector streets shall be at least 800 feet apart.

e. Street jogs and/or intersections on minor collector and local streets of less than 200 feet shall not be allowed, except where both intersection streets are cul-de-sacs in which case the street jogs with centerline offsets of less than 125 feet shall not be allowed.

f. All intersections of two or more streets shall have a grade that does not exceed four (4) percent for the following distances from the intersection:

- Arterial Streets – 150 feet
- Collector Streets – 100 feet
- Local Streets – 60 feet



11. Tangents

Reverse curves in streets shall be corrected by minimum tangents of 150 feet for arterial and major collector streets. A 100-foot minimum tangent distance is required between reverse curves for minor collector and local streets.

12. Dead End Streets (as amended 10/25/05)

a. Minor terminal streets or courts designed to have one end permanently closed shall be no more than five hundred (500) feet but not less than one hundred fifty

(150) feet in length (measured along the centerline, from centerline of the intersection to center of the turn-around), unless necessitated by topography. They shall be provided at the closed end with a turn-around having an outside roadway diameter of at least ninety (90) feet and a street right-of-way diameter of at least one hundred (100) feet.

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 turn-around easement of at least ninety (90) feet. At all temporary turnarounds, a sign shall be placed stating, "Street to be extended by authority of the City of Lebanon". The sign shall be similar in size to a speed limit sign. The developer who extends a street that has been provided with a temporary turnaround shall remove the temporary turnaround and restore the area of the temporary turnaround.

13. Private Streets and Reserve Strips

a. Private Streets
There shall be no private streets platted in any subdivision unless they are part of an approved Planned Unit Development (PUD).

Within PUDs, private streets shall be identified on the plat as an easement for lot access and as a public utility easement. Construction of any private street, including hardware such as catch basins and drainage structures, shall comply with the specifications for public streets. The plat and any declaration of covenants shall contain, in any description of the common element(s), a specific designation of the private streets as the responsibility of the Owners' Association and not the City of Lebanon. A sufficient funding level and source shall be provided to offset the costs of maintaining the private street in the future.

When deliberating the appropriateness of private streets for a specific development, the Planning Commission shall consider issues such as continual maintenance of the streets and street security lights by the property owner or Homeowners Association, and access and maintenance responsibilities for public utilities. A hold harmless agreement may be required.

If a development is proposed to have operable gates, issues such as emergency access, garbage collection and access for mail and other deliveries should be considered in any discussion regarding the appropriateness of private streets. Emergency access shall be provided by a universal operating system in accordance with requirements of the Commissioner of Public Safety.

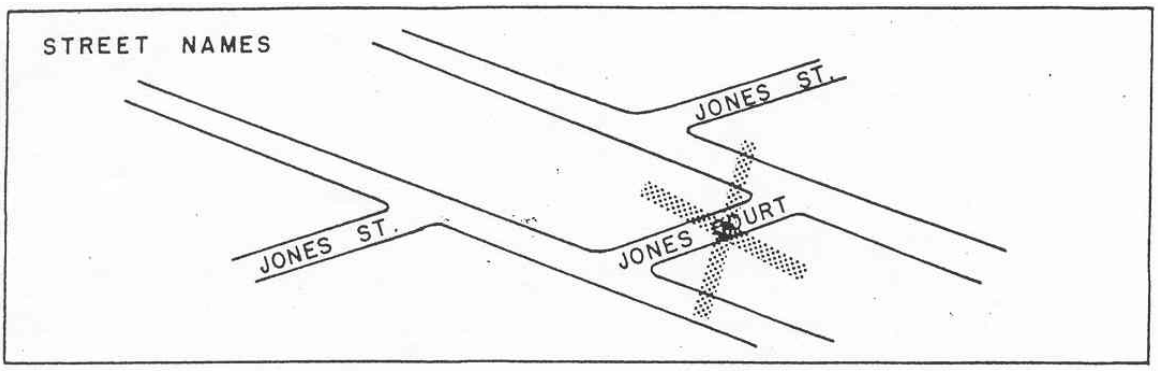
Adequate circulation shall be provided to allow vehicles to turnaround without passing through the gates. Gates, gate houses, or other facilities shall be so located so as to provide adequate access for vehicles and not block a public street.

In addition, appropriate stacking length shall be provided, based on the number of lots within the development, subject to approval of the City/Utilities Engineer, without blocking the street.

b. Reserve Strips
There shall be no reserve strips controlling access to streets, except where the control of such strips is definitely placed with the community under conditions approved by the Planning Commission.

14. 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 proposed streets duplicate existing street names, irrespective of the use of the suffix street, avenue, boulevard, driveway, place, or court.



15. Alleys

Alleys may be provided to the rear of lots used for business purposes to provide access for loading/unloading or other service uses. Alleys may also be provided in residential blocks, as approved by the Planning Commission, especially where small lots are proposed, in order to provide access to rear-loaded garages and for garbage collection.

16. Drainage

All streets shall be designed as to provide for the discharge of surface water from the right-of-way of the streets by grading and drainage and shall be approved by the City Engineer. Where water cannot be adequately discharged by surface drainage, storm sewers shall be required. Public streets are not to be used to collect and convey storm water runoff other than that which falls on a lot fronting that street. In addition, the street and drainage design shall be such that storm water runoff shall not be allowed to flow across street intersections. For construction standards and specifications for storm drainage see the Nashville Stormwater Management Manual.

Specific drainage design requirements relating to the design of streets are as follows:

a. A street shall not carry storm water runoff for a distance greater than 300 feet from the beginning point of runoff.

b. Gutter spread shall not exceed one-half ($^1/_2$) the travel lane. Gutter spread calculations are required and must be based on the same storm event as used to design all other portions of the storm system. An exception is made for minor local residential streets as follows: Gutter spread can exceed one-half ($^1/_2$) the lane width, maximum being 7 feet on 11 foot lanes. (as amended 10/27/09)

c. Discharge from the street shall be handled by means of a catch basin/curb inlet; the number, size and location to be determined by the design engineer as approved by the City Engineer. The type of catch basin/curb inlet shall be the City's standard for the particular application.

d. Culverts (pipe) within the street right-of-way shall be reinforced concrete pipe (RCP) as per ASTM C76, Table III or Table IV, with a minimum inside diameter of fifteen (15) inches. (as amended 10/27/09)

e. Catch basins/curb inlets at low points along the roadways and at the end of cul-de-sacs are to be as a minimum double inlet catch basins/curb inlets.

f. All localized storm drainage systems shall be designed for a minimum 10-year storm event with the exception of bridges, which shall be designed for a minimum 25-year storm event. Conveyance systems through a development shall be designed for a minimum 25-year storm event, unless otherwise required by the City Engineer.

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

h. The design engineer shall prepare and submit to the City Engineer a study of the effect of each subdivision on existing downstream properties and drainage facilities outside the area of the proposed subdivision.

i. All new storm drains shall be require to be marked "No Dumping Drains to River." (inserted 4/28/09)

17. Driveways

Driveways, both residential and non-residential, shall be concrete paved within the right-of-way of the street or to the back of the sidewalk, whichever is farthest from the curb. Residential drives shall be twelve (12) to eighteen (18) feet wide. Non-residential drives without islands shall be a minimum of twenty (20) feet wide and a maximum of thirty-five (35) feet wide. Non-residential drives with islands shall have, as a minimum, sixteen (16) feet wide entrance and exit lanes.

18. Lighting (inserted 10/27/09)

All industrial, commercial, and residential subdivision shall be required to install street lighting. Lighting plans shall be submitted to the City of Lebanon Engineering Department for review and approval. Subdivision lighting plans shall be reviewed per the following requirements:

a. Spacing shall not be greater than 400 feet, or no greater than every four side yard lines whichever is less.

b. At all entrances, intersections and other potentially dangerous traffic areas, as determined by the City Engineer.

c. Ends of all cul de sacs.

This spacing may vary slightly based on lot configurations and practical locations of MTEMC poles. Lighting shall be installed and functional upon issuance of the first certificate of occupancy for that particular phase, subsequent certificates may be withheld until lighting is complete.

B. Blocks

1. Length

Blocks shall not be less than eight hundred (800) 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 or more public crosswalks of not less than ten (10) feet in width to extend entirely across the block at locations deemed necessary.

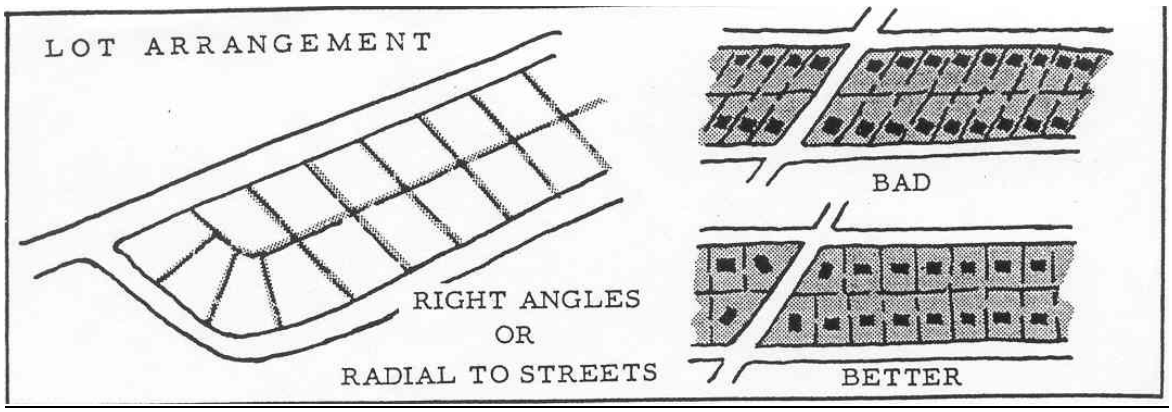
2. Width

Blocks shall be wide enough to allow two tiers of lots of minimum depth, except where fronting on major streets or prevented by topographical conditions or size of the property, in which case the Planning Commission will approve a single tier of lots of minimum depth.

C. Lots

1. Arrangement

Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines.



2. 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. Minimum lot sizes and other bulk regulations are specified in the Zoning Ordinance.

3. Corner Lots

Corner lots shall be sufficiently wider and larger to permit the additional side yard requirements of the Zoning Ordinance. Information shall be provided on the Final Plat showing which direction a house located on a corner lot will face.

4. a. Developer shall provide appropriate drainage calculations/study indicating existing limits of the 100-year flood event that must be prepared by a licensed Civil Engineer. This drainage calculation/study must provide a grading plan that provides alternate storage for fill placed in the regulated 100-year floodplain.

When circumstances (such as a one or two lot subdivision) are evident that a detailed study is not necessary as determined by the City Engineer, the developer or owners may provide a letter of recommendation from a licensed Civil Engineer regarding drainage and floor elevations.

b. The final subdivision plat shall indicate minimum floor elevations – including garages. Minimum floor elevations shall be not less than two (2) feet above the 100-year flood. Appropriate notes may also be required on the plat to advise future property owners of drainage issues and concerns.

c. The final subdivision plat shall indicate proposed fill requirements for each lot as required by the drainage calculations/study.

d. All building pads must be filled to not less than the 100-year flood elevation when affected by the regulated 100-year floodplain. All building pads not affected by the regulated 100-year floodplain must be filled to not less than the elevation required by the drainage calculation/study required in Section a. above.

e. Developer must post bond or Letter of Credit for all improvements from a local bank located within one hour drive of the City of Lebanon.

f. Developer shall provide certification to the City Engineer prior to request for building permit, that all lots have been filled and graded per the approved grading/drainage calculation/study. This certification shall be by a licensed surveyor or engineer prior to issuance of a building permit. Certification from a qualified geotechnical firm or individual regarding compaction of fill must be provided to the City Engineer prior to issuance of a building permit.

g. Once final foundation elevation is complete the builder shall provide certification, through his surveyor or engineer, to the proposed floor elevation by completion of a standard letter as developed by the City Engineer and provided by the City Building Official.

h. All plats must indicate the location and elevation of at least one on-site City approved benchmark, which shall be installed by the surveyor unless otherwise approved by the City Engineer.

i. The City of Lebanon Building Official or authorized staff shall make a site field investigation of all lots prior to issuance of the building permit. This site visit shall be coordinated with the driveway permit review by the Engineering Department.

j. Lot corners must be marked as shown on the approved recorded plat and building footprint staked prior to site field investigation by the Building Official or authorized staff.

k. The City of Lebanon Building Official in conjunction with the Engineering Department reserves the right to require detailed site grading and drainage plans prior to issuance of any building permit if deemed necessary to evaluate and insure drainage characteristics/features are adequately addressed by the builder for the benefit of future homeowners.

D. Public Use and Service Areas

Due consideration shall be given to the allocation of areas suitably located and of 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

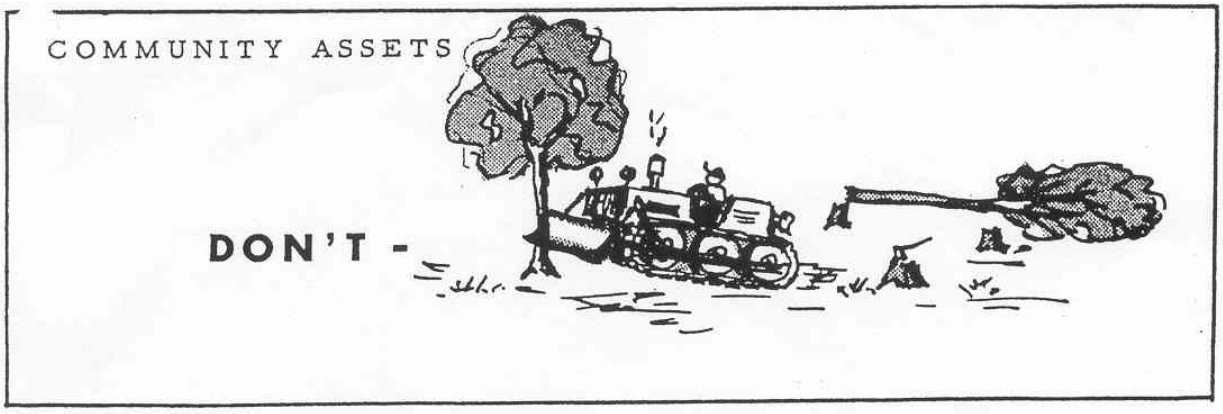
within the subdivision up to a total of ten (10) per cent of the gross area or water frontage of the plot, for park, school or recreation purposes.

2. Easements for Utilities

Except where alleys are permitted for the purpose, the Planning Commission may require public and infrastructure easements, typically twenty (20) feet in width, for poles, wires, conduits, storm and sanitary sewers, gas and water, mains or other utility lines, and sidewalks along all front lot lines. A similar ten (10) foot easement may be required along the side and rear property lines. Easements of the same or greater width may be required across lots, where necessary for the extension of existing or planned utilities.

Community Assets

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



E. Suitability of the Land

1. Suitability of the Land

The Planning Commission shall not approve the subdivision of land if from adequate investigations conducted by all public agencies concerned, it has been determined that in the best interest of the public the site is not suitable for platting and development purposes of the kind proposed.

Land subject to flooding and land deemed to be topographically unsuitable shall not be platted for residential occupancy, nor for such other uses as may increase danger to health, life or property or aggravate erosion or flood hazard. Such land within the plat shall be set aside for such uses as shall not be endangered by periodic or occasional inundation of shall not produce unsatisfactory living conditions.

2. Critical Lots

When a proposed lot contains natural or manmade features that affect the feasibility of construction, it shall be designated a critical lot. Lots are designated critical during the preliminary plan review process and/or subsequent subdivision submittals based on soil conditions, degree of slope, flooding, or other lot features.

a. A lot shall be designated as critical when the lot is created on a natural slope of 15% to 20%. Any lot/area with a slope exceeding 20% shall be set aside and noted on the plat as a No Disturbance Area that is not to be disturbed by grading operations. The Planning Commission has the right to grant variances for construction/disturbance of areas of slope exceeding 20%.
b. A lot shall be designated as critical when it contains natural floodplain.
c. A lot shall be designated as critical if it is adjacent to a large/significant drainage channel, blue line stream, sinkhole, and/or otherwise low lying area with the potential for flooding as determined by the City of Lebanon Engineering Department.
d. A lot shall be designated as critical if it contains problem soils, sinkholes, dropouts, or other adverse earth formations or topography. Lots or parcels identified as containing Agee silty clay loam, Dowellton silt loam, Eagleville silty clay loam, Lindell silt loam, Norene silt loam, Tupelo silt loam or Woodmont silt loam soils will be considered problem soils.
e. Lots in floodplains shall be subject to the floodplain/floodway development standards of the City's current floodplain ordinance.
f. A star symbol (*) shall be used to identify critical lots on the face of the preliminary plat, development plan, and final plat.

3. New Critical Lots

Any lot that will be created as a result of the grading process that meets the definition of a critical lot shall also be identified as such on the final plat.

4. Prior to Preliminary Plat or Plan Approval

Prior to approval of a preliminary plat or plan for a subdivision that includes lots designated as critical, the applicant shall provide the City Engineer with a preliminary grading study and a description of the measures to be taken:

a. To protect the natural features of the critical lots.
b. To minimize changes in grade, cleared area, and volume of cut or fill, and to control adverse impacts on the critical lots during and following the period of site disturbance.
c. To align streets to minimize disturbance of slopes.
d. To identify easements along property lines to meet future drainage needs.

5. Zoning Code Requirements

All critical lots shall meet the applicable requirements of the Zoning Code.

6. Critical Lot Plan Required

Prior to application for a building permit on a lot designated as "critical", a surveyed plan shall be submitted to the City Engineer for approval drawn at a scale of 1" = 20'. Said plan shall be stamped by a State of Tennessee licensed professional civil engineer specializing in geotechnical, soils, hydrology, and/or structures with a note of certification as to the soundness and stability of proposed structures on the property. The plan shall provide a survey of existing conditions, details of the proposed development, and address any concerns in relation to the feasibility of construction (all shown to a point 10 feet outside the lot boundaries) on the lot as is described in Appendix E.

The City of Lebanon Engineering Department shall require the developer to prepare an overall grading and drainage plan as part of the subdivisions construction drawings to be constructed by the developer addressing all potential critical lot issues. Post-construction certification by a State of Tennessee licensed civil engineer specializing in all applicable areas is required to verify site has been built per the approved plans.

7. Critical Lot Plan Review

Three copies of the critical lot plan shall be submitted to the City Engineer to initiate a staff review. The critical lot plan shall include the name and phone number of the person responsible for the preparation of the plan and the number for a contact person. Within 14 days of the submittal date, the staff person responsible for the review shall notify the applicant of the approval or disapproval of the plan or the plan changes necessary to gain approval.

8. Basis for Critical Lot Plan Approval

   Critical lot plan approval shall be based on the care taken to minimize the lot area subject to grading, the cut/fill required to prepare the lot for construction, and the effectiveness of the plan to preserve the natural features of the lot and Stormwater flow management details.

9. General Guides for the Critical Lot Plan

   The following are typical review items, but not all inclusive:

   a. Driveways crossing sidewalks in compliance with the Public Works Department and ADA accessibility standards.
   b. The diversion of runoff away from foundations. A five percent (5%) grade over a minimum of 5' from the structure on all sides with the exception of the garage entrance is required. The garage entrance requires a minimum one percent (1%) grade.
   c. Grading near lot boundaries that does not undercut trees on adjacent lots or concentrate Stormwater flow to adjacent lots and structures.
   d. Grading at the minimum necessary to allow for building construction.
   e. Avoidance of excessive foundation and retaining wall heights.
   f. Design details of any retaining walls subject to structural loading.
   g. All information described on the Critical Lot Checklist available from the City Engineer.

10. Issuance of Building Permits

    No building permit shall be issued at any time prior to approval of the critical lot plan. For lots that require a minimum pad, certification from a registered surveyor listing actual pad elevation is also required prior to issuance of a building permit.

11. Issuance of a Certificate of Occupancy

    No Certificate of Occupancy will be issued for any lot designated as critical until certification from the design engineer has been provided to the City Engineer stating that the site was constructed in reasonable accordance with the approved Critical Lot Plan. For lots that required a minimum finished floor elevation, certification from a registered surveyor is required stating the exact elevations of all structures including garages.

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 future streets and logical further re-subdivision.

G. Variances

Where the applicant can show that a provision of these standards would cause unnecessary hardship if strictly adhered to, and where, because of topographical or other conditions peculiar to the site, in the opinion of the Planning Commission a departure may be made without destroying the intent of such provisions, the Planning Commission may authorize a variance. Any variance thus authorized is to be stated in writing in the minutes of the Planning Commission with the reasoning on which the departure was justifiably set forth.

H. Zoning or Other Regulations

No final plat of land within the force and effect of an existing zoning ordinance will be approved unless it conforms to such ordinance.

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 most restrictive standard shall apply.

ARTICLE IV: DEVELOPMENT PREREQUISITE TO FINAL APPROVAL

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

A. Required Improvements

Every subdivision developer shall be required to grade and improve streets and alleys; install sanitary sewers, stormwater systems, and water mains in accordance with specifications established by the city. The adopted requirements, whether in local regulations or in the following standards, shall govern. (as amended 10/27/09)

1. General Requirements (as amended 10/25/05)

   a. No building permit shall be issued until utility construction is underway, all roadway grading is complete, and the initial lift of the stone base is in place per the approved construction plans.

   b. No building permits shall be issued until a gravel driveway to the proposed home measuring at least 50 feet by 10 feet or to the front of the structure, whichever is greater, is in place.

   c. No Certificate of Occupancy will be issued until the As-Built plans for all utilities have been approved and the utility system accepted by the City of Lebanon.

   d. Roadway binder must be down by 25% of the permits pulled or one (1) year from start of construction, whichever comes first. Failure to comply will result in the City of Lebanon drawing on the Letter of Credit to complete through the binder stage of construction.

   e. No final topping until 75% of lots are developed. Final topping will be in place within six (6) months of 75% of lots being developed or at the discretion of the City Engineer. Written approval from the City Engineer is required prior to topping.

   f. A reduction of the required Letter of Credit for the public utilities will be considered once all utilities are installed and As-Built plans are received and approved. At such time that the As-Builts are approved, the City of Lebanon Engineering Department will issue an acceptance letter and start the required one year warranty period. In this letter it will state a reduced Letter of Credit amount, which will be equal to 10% of the initial Letter of Credit or initial estimated utility construction cost. (as amended 10/27/09)

g. A reduction of the required Letter of Credit in an amount not to exceed 50% for roadways, grading, drainage and lighting will be considered by the City of Lebanon Engineering Department once binder is in place. (as amended 10/27/09)

h. Once public improvements are complete, release of the Letter of Credit is subject to a one-year maintenance Letter of Credit being posted for 10% of the initial Letter of Credit or initial estimated roadway construction cost. (as amended 10/27/09)

2. Grading (as amended 10/27/09)

All streets, roads and alleys shall be graded to their full width by the developer so that pavements and sidewalks can be constructed on the same level plane. Due to special topographical conditions, deviation to the above will be allowed only with special approval of the Planning Commission.

Refer to Appendix D for road construction criteria/specifications.

3. Storm Drainage

An adequate drainage system, including necessary open ditches, curb and gutter, pipes, culverts, intersectional drains, catch basins, 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 full width roadway and the required slopes. The size openings to be provided shall be determined by acceptable engineering standards as approved by the City/Utilities Engineer, but in no case shall the pipe be less than fifteen (15) inches. Cross drains shall be built on 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 foot below the roadbed.

4. Roadway Base Stone/Paving (as amended 10/27/09)

After preparation of the sub-grade, the roadway base/paving shall be constructed in accordance with Appendix D of these regulations..

5. Minimum Pavement Widths

Due to the diversity of development in the planning region ranging from sparsely populated agricultural areas to the densely populated urban areas, required pavement widths will vary with the character of building development and the amount of traffic encountered. Minimum pavement widths between curbs shall be as follows:

Residential – Minor/Local

Typical Section

Extruded curb or modified curb and gutter see detail drawings Appendix C, TDOT RP-MC-2.

Average Daily Traffic [a]	Right of Way	Pavement Width	Cross-Section [c]
<- 1000	50 ft.	24 ft. [b]	8 in., 2 in., 1 1/2 in.
>- 1000	50 ft.	24 ft.	10 in., 2 in., 1 ½ in.

a - ADT for this requirement – assume 10 trips per day per single family dwelling.

b - The Planning Commission may permit a pavement width of 22 ft. on local residential and minor residential collectors. (as amended 10/27/09)

c - Stone base, asphalt binder, asphalt surface (topping), respectively

Residential – Collector

Typical Section

Modified curb and gutter (Appendix C, TDOT RP-MC-2, Type B), or standard curb and gutter (Appendix C, ST-100, ST-101 & ST-102) see detail drawings.

Subject to Staff recommendation and approval by the Planning Commission.

Right of Way	Pavement Width	Cross-Section [a]
60 ft.	34 ft.	10 in., 2 in., 1 ½ in.

a - Stone base, asphalt binder, asphalt surface (topping), respectively

c. Cul-de-Sac (permanent)

Length	Right of Way	Pavement Width	Cross-Section [a]
<- 500 ft.	50 ft.	~~20~~ *22* ft.	8 in., 2 in., 1 ½ in.
>- 500 ft.	50 ft.	22 ft.	8 in., 2 in., 1 ½ in.

a - Stone base, asphalt binder, asphalt surface (topping), respectively

6. Sidewalks, Driveway Ramps and Curbs

All sidewalks, driveway ramps and curbs shall comply with all ADA requirements.

a. Sidewalks (as amended 6/26/07 and 10/28/08)

Sidewalks shall be required along both sides of all new streets within subdivision developments. This construction shall be at the cost of the developer. Sidewalks shall be required on any subdivision of property within the City; a payment in lieu of for the sidewalk fund may be option. No Certificate of Occupancy or

recording of a Final Plat shall be granted until sidewalks are installed or the payment in lieu of is received.

The only exception to the requirement for the installation of sidewalks or the payment in lieu of installation shall be in the following situations:

- residential subdivisions only; and
- on existing roads where the subdivision is for 4 lots or less; and
- where sidewalks do not currently exist in the immediate vicinity; and
- it is not anticipated that sidewalks will extend into the particular area in the near future as determined by the Planning and Engineering Staff, Planning Commission and City Council on a map or similar graphic as the Major Thoroughfare and Land Use Maps

All of the above conditions shall be met in order for neither sidewalks nor payment in lieu of construction to be required.

Consideration shall not be given for a waiver from the installation of sidewalks or the payment in lieu of installation for non-residential subdivisions.

The Planning/Engineering Staff shall make a recommendation relative to the installation of sidewalks or the payment in lieu of construction. The Planning Commission may make a recommendation relative to the installation of sidewalks or the payment in lieu of construction. City Council will make the final determination relative to the installation of sidewalks or the payment in lieu of construction. Each decision will be made on a case by case basis. The payment in lieu of construction shall be contributed by the developer. The assessment for the installation of sidewalks shall be established by the Commissioner of Public Works on an annual basis. Any additional site work that would be required on the part of the applicant in order to install sidewalks may be an added assessment.

The ability to pay into the sidewalk account includes, but not limited to the following reasons:

- Natural conditions or barriers.
- Impending street and/or utility improvements and/or construction.
- A stormwater drainage ditch or similar public utility facility prevents the construction of a sidewalk, and neither the sidewalk nor the facility can be reasonably relocated to accommodate both the facility and the sidewalk.
- Other unusual circumstances exist that make the construction of sidewalks unreasonable or inappropriate.

Sidewalks shall be a minimum of 5 feet wide. Sidewalks shall be installed at the appropriate time as determined by the Engineering Department. Sidewalk construction shall conform with the lines and grades shown on approved plans,

and in accordance with detail drawings ST-320, ST-321, ST-321A, ST-326 and ST-327 (Appendix C)."

b. Driveway Ramps

Concrete driveway ramps shall be required on all curbed and/or curb and gutter streets. The ramps shall extend a minimum of five (5) feet behind the curb. Driveway ramp construction to conform with detail drawings ST-322, ST-323 and ST-324 (Appendix C).

Any driveway ramp which is to be placed after initial laying of curb shall require a permit from the City of Lebanon Engineering Department, and shall be installed in accordance with TDOT Standard Drawing RP-D-14. Particular notice shall be paid to not alter existing drainage patterns.

Any ramp which does not conform to the foregoing requirements is to be removed and replaced by the developer or contractor at his expense; this will be enforced under provision of the maintenance bond.

c. Curbs

Machine-laid (extruded) curbs in residential developments shall meet the following specifications.

Concrete Specifications

Concrete for curb and gutter, sidewalk and driveway construction shall be Class "A" air entrained concrete as specified in Section 604.03, TDOT Standard Specifications.

1. Concrete – Concrete strength (20 day) 3500 PSI
   Maximum slump – 1 ½ inch
   Gradation of Aggregate (river gravel)

Sieve Size	Percent Passing
#4	96-100
#8	80-100
#16	55-80
#30	45-65
#50	10-25
#100	2-7

Concrete shall be cured by covering with burlap, cotton, or jute mats or sacking, which is kept moist for a period of at least five (5) days, or by the application of a liquid membrane to prevent evaporation losses. In the latter case, the material and method of application shall be approved by the Public Works Department.

2. Alignment – Curbs shall vary from the specified alignment (on the plans) not more than 0.10 feet.

3. Typical Section – Unless otherwise directed by the Engineering Department, the curbs shall conform to the typical section shown on Standard Drawing ST-100, ST-101, ST-102, or TDOT RP-MC-2 (Appendix C).

   Concrete shall be tested in accordance with provisions set forth in A.A.S.H.O. T-22 by a private testing laboratory. The frequency of testing shall be two (2) test specimens for each fifty (50) cubic yards and fraction thereof placed in one day. Test specimens are to be made and cured in accordance with A.A.S.H.O. T-23. The aforesaid test will be conducted at the expense of the developer and copies of test results shall be submitted to the Engineering Division.

7. Installation of Utilities

   After grading is completed and approved and before any base is applied, all of the underground work—water mains, gas mains, etc., and all service connections shall be installed completely and approved throughout the length of the road and across the flat section.

8. Water Supply System

   Water mains shall be extended from or connected to the City of Lebanon's water distribution system in such a manner as to adequately serve all lots shown the subdivision plat for both domestic service and fire protection.

   The size and location of water mains, the location and types of valves and hydrants are approved by the Planning Commission subject to the detailed review and approval by the City/Utilities Engineer confirming that the design and construction shall be in accordance with City of Lebanon and State of Tennessee Department of Environment Conservation Standards and Specification.

   When a subdivision development proposed within the City of Lebanon's Urban Growth Area and/or within the City of Lebanon's Planning Jurisdiction is proposed to be served by another Water Distributor, District or Authority the owner/developer shall provide written documentation from the water system Distributor, District or Authority indicating the current and proposed system flow and pressures in the immediate area. Water service provided by other Distributors, Districts or Authorities must be approved by Resolution by the Lebanon City Council.

   No subdivision development shall be approved until adequate fire flows and pressures are available or an appropriate plan of services approved. Adequate fire flows shall be based on current State of Tennessee requirements.

9. Sanitary Sewers

Sanitary Sewer Service shall be extended by the owner/developer from existing City of Lebanon Sewage Collection System facilities.

The size and location of sewer mains, services, manholes, pump stations and related sewage facilities are approved by the Planning Commission subject to the detailed review and approval by the City/Utilities Engineer confirming that the design and construction shall be in accordance with City of Lebanon and State of Tennessee Department of Conservation and Environment Standards and Specifications.

Sewer capacity shall be granted based on the City of Lebanon Sanitary Sewer Capacity Management Plan. No individual subdivision shall be approved for sewer connections of more than 15% of the current available capacity for residential developments (approximately 20 lots) in any single month. The City/Utilities Engineer and the Planning Commission may place limits on the number of consecutive monthly approvals. This limit may be based on actual progress being made on the construction of the project, size of the development, offsite construction costs, and other possible economic and capacity availability factors.

Wherever a subdivision of property cannot be reasonably served, in the opinion of the Lebanon Planning Commission and City/Utilities Engineer, by an extension of the City of Lebanon Sewerage System, the owner/developer shall may make application to the City/Utilities Engineer for the installation of alternative sewage collection and disposal facilities.

The Planning Commission shall consider alternative collection and disposal facilities upon recommendation of the City/Utilities Engineer, Commissioner of Public Works and Mayor.

Alternative collection and disposal systems shall be reviewed and approved by the City/Utilities Engineer and appropriate State of Tennessee Departments. A copy of the approved plan and related documents shall be submitted to the City/Utilities Engineer for reference purposes.

If the City of Lebanon does not install and maintain the alternative sewage collection and disposal facilities Agreements shall be developed between the City of Lebanon and appropriate entities indicating the maintenance responsibility for any approved sewage collection and disposal system that does not connect to the City of Lebanon collection system. The final plat of record shall duly note such maintenance responsibilities.

10. Stop and Street Name Signs (as amended 10/27/09)

Stop and street name signs shall appear at all intersections. It shall be the responsibility of the developer to install stop and street name signs, as appropriate, on all streets within a proposed subdivision. Street/stop signs shall meet the requirements of and installed in accordance with the most current Manual on Uniform Traffic Control Design (MUTCD), including height, off-set, other dimensional properties, and reflectivity.

B. Recommended Improvements

Although not required by these regulations, the planting of street trees is considered a duty of the developer as well as good business practice.

Street trees are a protection against excessive heat and glare and enhance attractiveness and value of abutting property. The Planning Commission will assist the subdivider in location of trees and species to use under varying conditions.

It is recommended that trees be planted inside the property lines, outside of any easement, where they are less subject to injury, decrease the chance of motor accidents and enjoy more favorable conditions for growth. If trees are to be planted within a planting strip in the right-of-way, their proposed locations and species to be used must be submitted for the Planning Commission's approval since the public inherits the care and maintenance of such trees.

C. Guarantees in Lieu of Completed Improvements (as amended 10/27/09)

No final subdivision plat shall be approved by the Planning Commission or accepted for record by the County Registrar of Deeds until the improvements listed shall be constructed in satisfactory manner and approved by the Commissioner of Public Works, or his authorized agent, within the City of Lebanon, or in lieu of such prior construction, the Planning Commission may accept a Letter of Credit in an amount equal to the estimated costs of installation of the required improvements, whereby improvements may be made and utilities installed without cost to the city in the event of default of the applicant. See Appendix B for Letter of Credit requirements.

ARTICLE V: ENFORCEMENT AND PENALTIES FOR VIOLATIONS

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.

A. Enforcement

1. No plat or plan of a subdivision of land into two or more lots located within the planning region shall be admitted to the land records of the county or received or recorded by the County Registrar of Deeds until said plat or plan has received final approval in writing by the Planning Commission as provided in Section 3493.10, Supplement to Code of Tennessee, (1950).

2. No board, public officer, or authority shall light any road, lay or authorize the laying of water mains or sewers, or the construction of other facilities or utilities in any road located within the planning region unless such road shall have been accepted, opened or otherwise received the legal status of a public road prior to the adoption of these regulations, or unless such road corresponds in its location and lines to a road shown on a subdivision plat approved by the Planning Commission, or on a road plan made and adopted by the City Council as provided in Section 3493.14, Supplement to Code of Tennessee, (1950).

B. 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 3407.10 and 3493.10, Supplement to Code of Tennessee, (1950), and any county registrar so doing shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by law.

2. Section 10, Chapter 222, Public Acts of 1951 provides; "That whoever being the owner or agent of the owner of any land, transfers or sells or agrees to sell or negotiates to sell such land by references to or exhibition of or by other use of a plat of subdivision of such land without having submitted a plat of such subdivision to the Regional Planning Commission and obtained its approval as required by this Act and before such plat be recorded in the office of the appropriate county registrar, shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by law; and the description by metes and bounds in the instrument of transfer or other document used in the process of selling or transferring shall not exempt the transaction from such penalties. PROVIDED HOWEVER, said owner or agent of any land may sell, transfer or agree to sell any lot or lots shown on a plan having been given tentative approval by said Regional Planning Commission; and provided, further, said owner or agent post bond in form and amount and with conditions and surety satisfactory to said Regional Planning Commission, providing for and securing to the public the actual construction and installation of such improvements and

utilities within a period specified by the Commission and expressed, in the bond. The City, through its Attorney, or other official designed by the City Council, may enjoin such transfer or sale or agreement by action or injunction."

3. Within a municipality, the solicitor or other official designated by its chief legislative body may enjoin unapproved transfer or sale of property by action or injunction as provided in Sections 3493.14, Supplement to Code of Tennessee, (1950).

4. 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 or the Attorney or other official designated by the City Council may bring action to enjoin such erection or cause it to be vacated or removed as provided in Section 11, 222, Public Acts of 1951.

ARTICLE VI: ADOPTION AND EFFECTIVE DATE

A. Before adoption of these Subdivision Regulations or any amendment thereof, a public hearing thereon shall be held by the Planning Commission; thirty (30) days notice of the time and place of which shall be given by one publication in a newspaper of general circulation in each county lying wholly or partly in the planning region.

B. These rules and regulations shall be in full force and effect from and after their adoption and effective date.

Advertised:	February 21, 2005
Public Hearing Held:	March 22, 2005
Adopted:	March 22, 2005
Effective:	April 27, 2005
Amended:	October 25, 2005 (Signs at temporary cul-de-sacs)
Amended:	October 25, 2005 (Certificate of Occupancies and final topping)
Amended:	June 26, 2007 (Sidewalks in all new developments)
Amended	November 27, 2007 (Sidewalks in all subdivisions)
Amended	March 25, 2008 (Access points for subdivisions)
Amended:	October 28, 2008 (Sidewalks required in subdivisions of 5 lots or more)
Amended:	March 24, 2009 (Staff review of 2 lots or less)
Amended:	April 28, 2009 (Storm drain labels)
Amended:	October 27, 2009 (Various requirements related to road construction, inserting street light requirements and modifications to appendices)
Amended:	May 25, 2010 (Appendix A - Certificates required on final plats)

Amended: January 25, 2011 (Critical Lot Requirements and inclusion of Appendix E).

Appendix A Certification Forms

FORM 1 - Certification Of Ownership And Dedication

I (we) hereby certify that I am (we are) the owners of the property shown and described hereon and that I (we) adopt this plan of subdivision with my (our) free consent, establish the minimum building restriction lines, and dedicate all streets, alleys, walks, parks and other open spaces to public and private use as noted, along with all necessary easements for the construction of cut and fill slopes, cut and fill ramps, inlet and outlet ditches or channel changes beyond the right-of-way limits of the road.

_____ _____

Signature of Owner Date

FORM 2 – Certificate of Accuracy

I hereby certify that the plan shown and described hereon is a true and correct survey to the accuracy required by the Lebanon, Tennessee Municipal Regional Planning Commission and that the monuments have been placed as shown hereon to the specifications of the State Board of Examiners for Land Surveyors.

_____ _____

Signature & Stamp of Registered Surveyor Date

FORM 3 – Certificate of General Approval for Installation of Sub-surface Sewage Disposal with Restrictions (if applicable)

General approval is hereby granted for the proposed subdivision hereon as being suitable for sub-surface sewage disposal with the listed and/or attached restrictions. Before the initiation of construction, the location of the house or other structure and plans for the sub-surface sewage disposal system shall be approved by the Local Health Authority.

_____ _____

Local Health Authority Date

Lot(s) # _____ shall not have a residence with more than _____ bedrooms unless otherwise approved by the Local Health Authority.

FORM 4 – Certificate of the Approval of Public Streets (as amended 5/25/10)

I hereby certify: (1) that the public streets have been installed in an acceptable manner and according to City specification in the subdivision entitled: _____ or, (2) that a Letter of Credit in the amount of $_____ has been posted with the City of Lebanon Department of Public Works to assure completion of all required improvements in case of default.

_____ _____

Date Name & Title

FORM 5 – Certificate for Approval of Recording

I hereby certify that the subdivision plat shown hereon has been found to comply with the Subdivision Regulations for Lebanon, Tennessee, except for Variances, if any, as noted in the minutes of the Planning Commission and that it has been approved for recording in the Office of the County Registrar.

_____ _____

Secretary of the Planning Commission Date

Void unless recorded by _____

FORM 6 – Certificate of Sewer System (as added 5/25/10)

I hereby certify: (1) that the seer system outlined or indicated hereon has been installed in accordance with current State and/or local government requirements or (2) that a Letter of Credit in the amount of $_____ has been placed with the City of Lebanon Public Works Department to assure completion of all required sewer improvements in case of default.

_____ _____

Date Name & Title

FORM 7 – Certificate of the Approval of Water system (as added d 5/25/10)

I hereby certify: (1) that the water system outlined or indicated hereon has been installed in accordance with current State and/or local government requirements or (2) that a Letter of Credit in the amount of $_____ has been placed with _____ to assure completion of all required water improvements in case of default.

_____ _____

Date Name & Title

Appendix B Letter of Credit Requirements

LETTERS OF CREDIT

The following information must be in *each* Letter of Credit:

Beneficiary: CITY OF LEBANON
NGINEERING DEPARTMENT
200 North Castle Heights Avenue, Suite 300
Lebanon, TN 37087
ATTN: Regina Santana

The following statements are not required to be verbatim; however, verbiage must accurately reflect all significant elements of the statement:

We hereby open our Irrevocable Letter of Credit in your favor for the account of _____ _____ (Developer), _____ (Address) for a sum not to exceed the aggregate amount of $ _____ available by your one or more clean drafts drawn at sight on us.

Each draft so honored must be marked "Drawn under _____ (Institution and address), Letter of Credit # _____" and be accompanied by a signed statement by the City of Lebanon that _____ (Developer) has failed to honor his/its obligations with the City of Lebanon its subsidiaries and affiliates for the construction of _____ for _____ (project name & phase).

Partial drawings are permitted.

It is a condition of this Letter of Credit that it shall be deemed automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless sixty (60) days prior to any expiration date we send notice to you be receipted registered mail or receipted overnight courier that we elect not to consider this Letter of Credit renewed for any such additional period. Upon receipt of such notification, Beneficiary has the right to draw on the full amount of the Letter of Credit. Letter of Credit non extension notice shall be sent to the beneficiary at the address as stated above, or as amended.

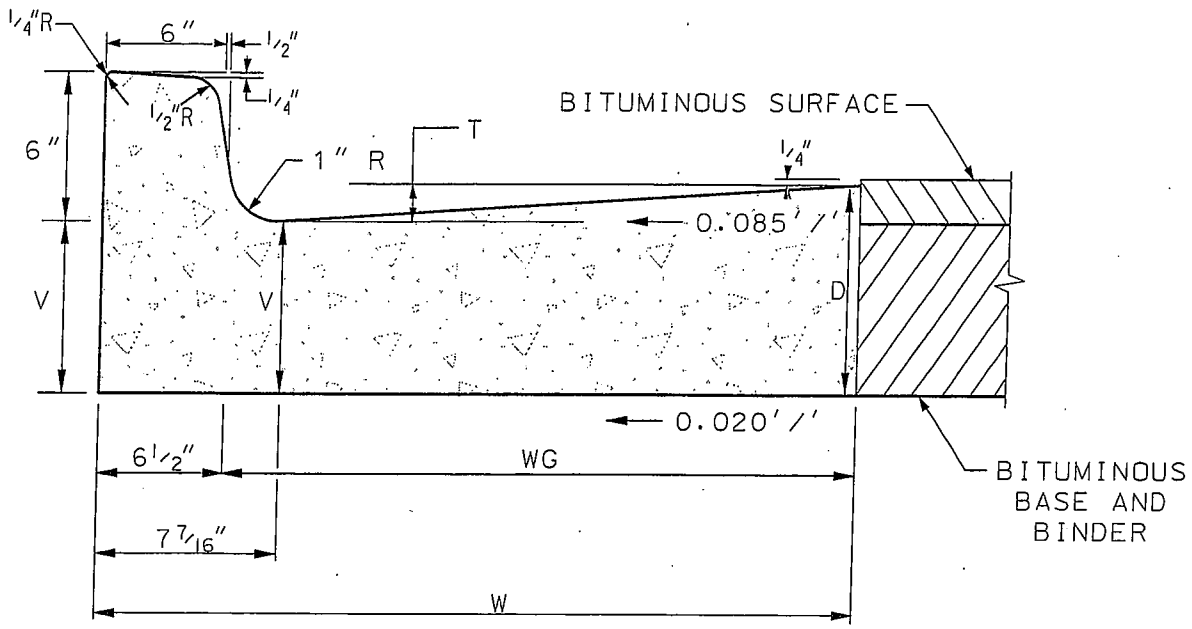
We hereby agree with you that all drafts drawn under and in compliance with the terms of this credit will be duly honored if drawn and presented for payment to our (main) office, located at _____ (address).

Additional requirements:

1. **Letter of Credit must be able to be drawn from a local bank (within one hour's driving distance MAXIMUM).**
2. **Beneficiary information as listed at top must be on the Letter of Credit.**
3. **The Letter of Credit must clearly state the name, address, and telephone number of the contact person from the bank itself.**

Questions or Comments? Please contact Regina Santana at 615-444-3647 ext. 248.

Appendix C Standard Drawings

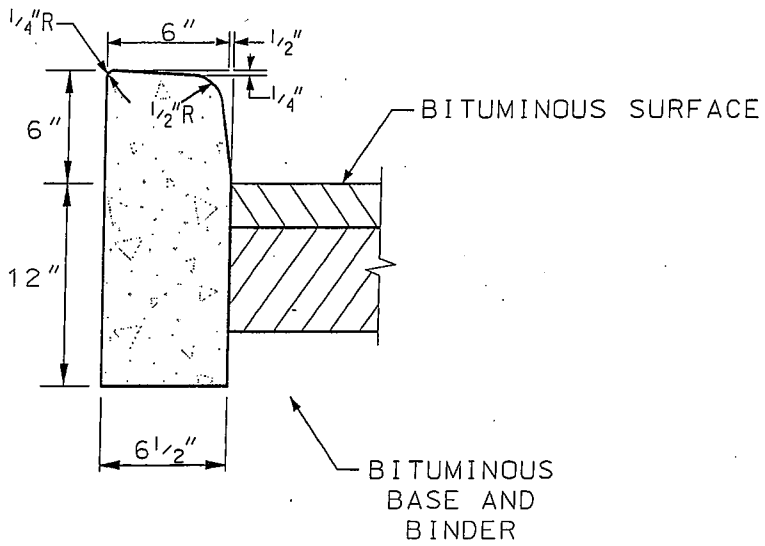


6" CONCRETE COMBINED CURB AND GUTTER					
TYPE	TOTAL WIDTH (W) IN INCHES	WIDTH OF GUTTER (WG) IN INCHES	VERTICAL DROP (T) IN INCHES	VERTICAL DEPTH (D) OF GUTTER	VERTICAL DEPTH (V) OF GUTTER AT FLOW LINE
6-30	30	23 1/2	2	AS NOTED ON TYPICAL X-SECTIONS	D - 1.53"

NOT TO SCALE

6" Concrete Combined Curb and Gutter

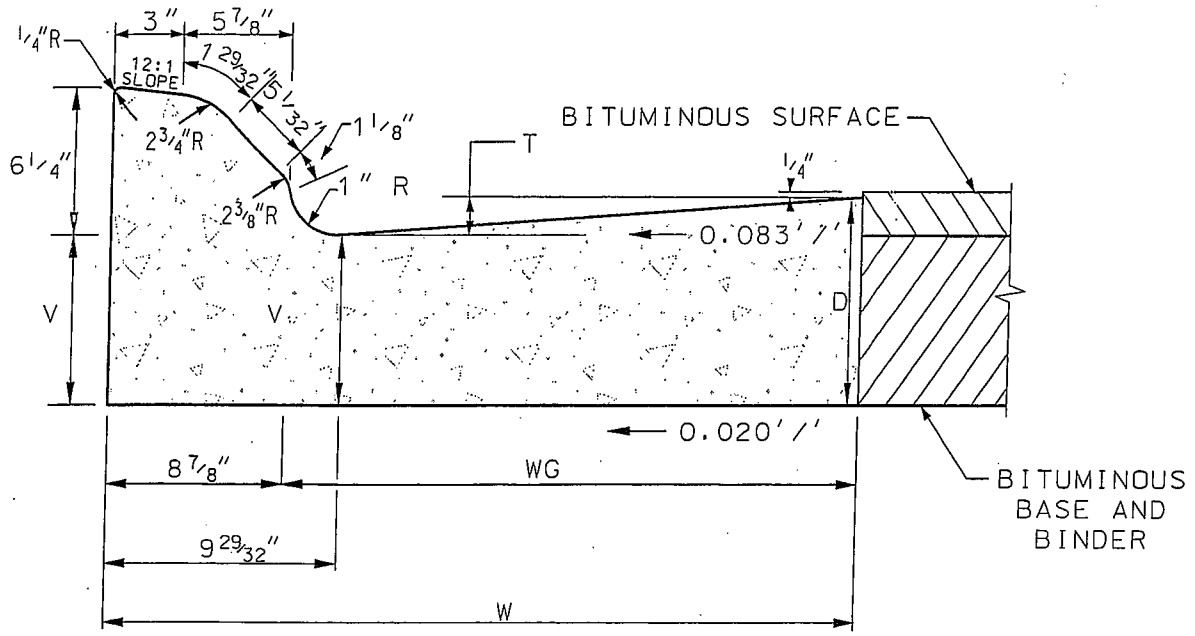
LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	**STANDARD DETAIL**	**ST-100**



NOT TO SCALE

6" Detached Concrete Curb

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-101

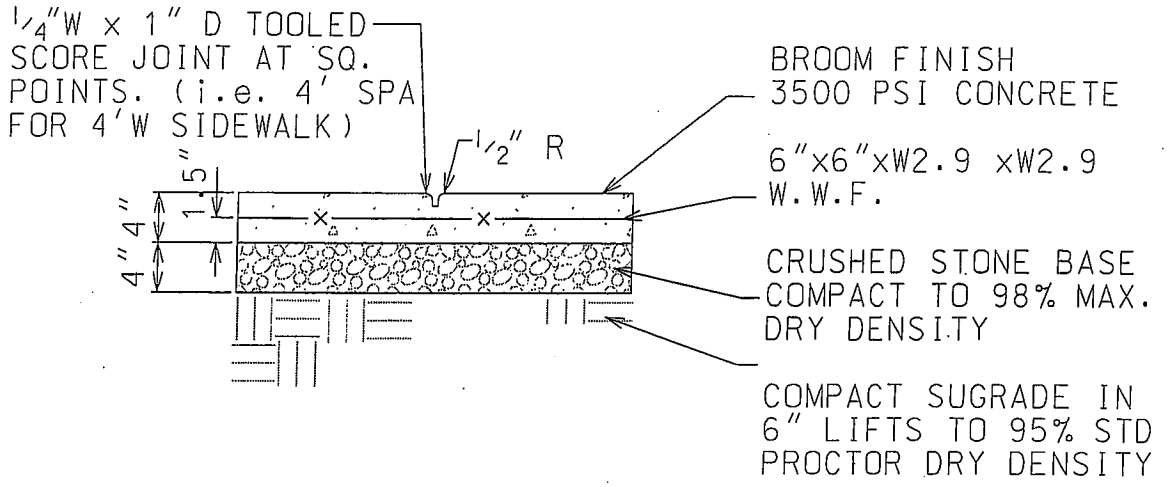


6" CONCRETE COMBINED CURB AND GUTTER					
TYPE	TOTAL WIDTH (W) IN INCHES	WIDTH OF GUTTER (WG) IN INCHES	VERTICAL DROP (T) IN INCHES	VERTICAL DEPTH (D) OF GUTTER	VERTICAL DEPTH (V) OF GUTTER AT FLOW LINE
6-33	33	24 1/8	2	AS NOTED ON TYPICAL X-SECTIONS	D - 1.52"

NOT TO SCALE

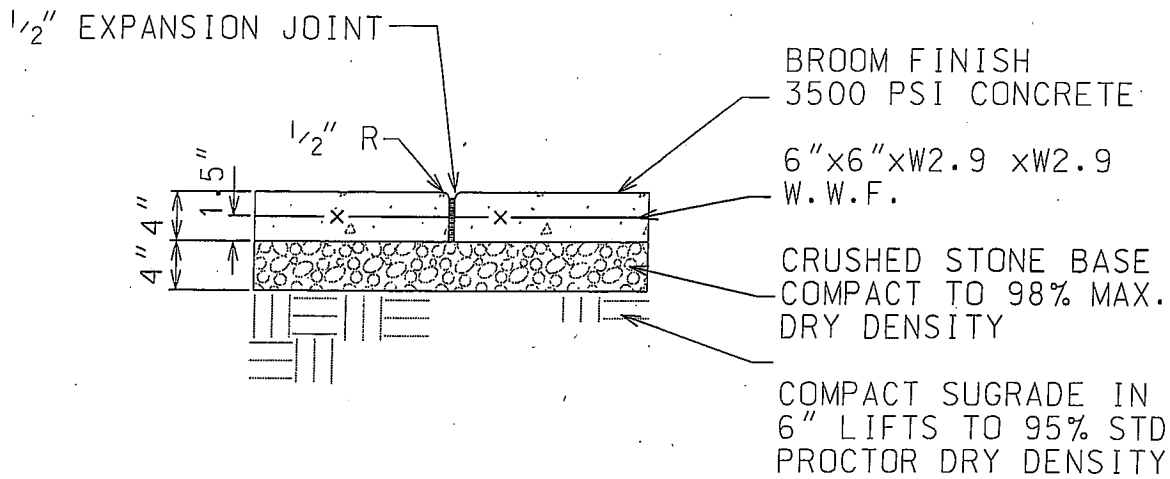
6" Sloping Concrete Combined Curb and Gutter

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	**STANDARD DETAIL**	**ST- 102**



NOT TO SCALE

OR

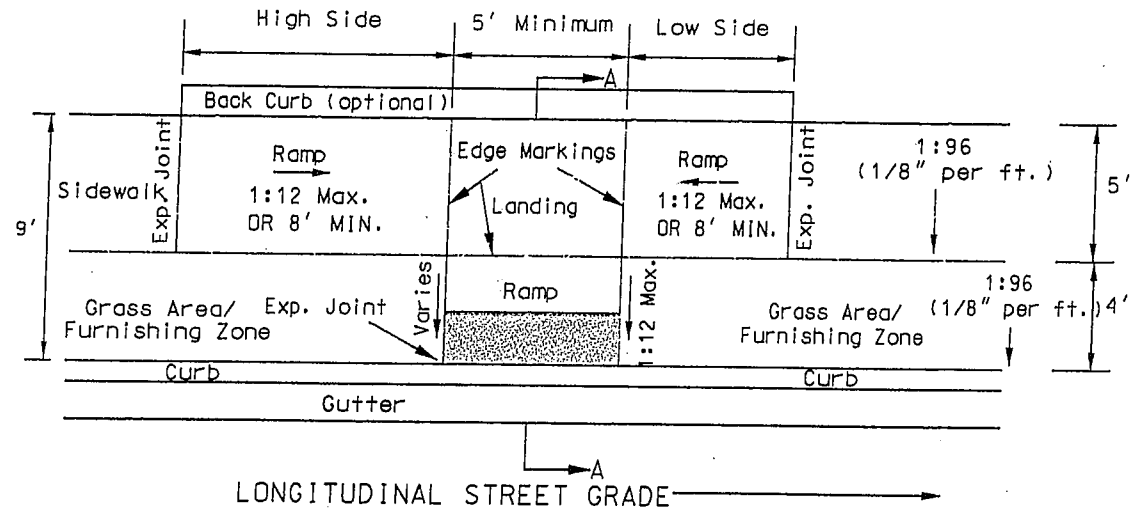


NOT TO SCALE

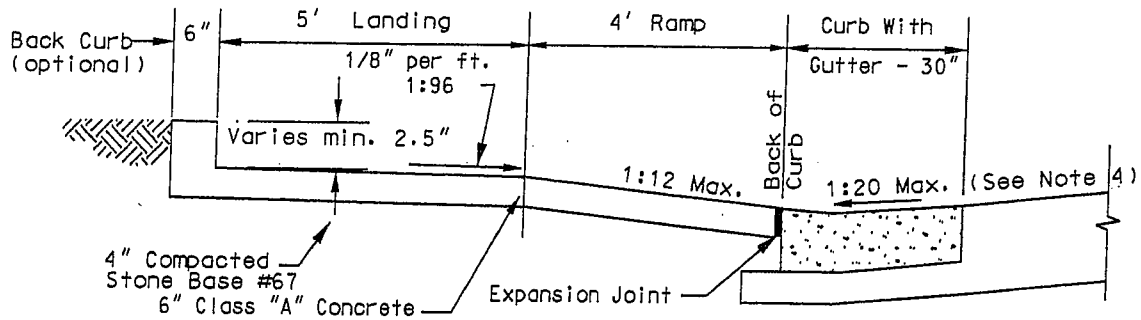
Concrete Sidewalk Details

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-103

PLAN VIEW



LONGITUDINAL STREET GRADE



SECTION A-A

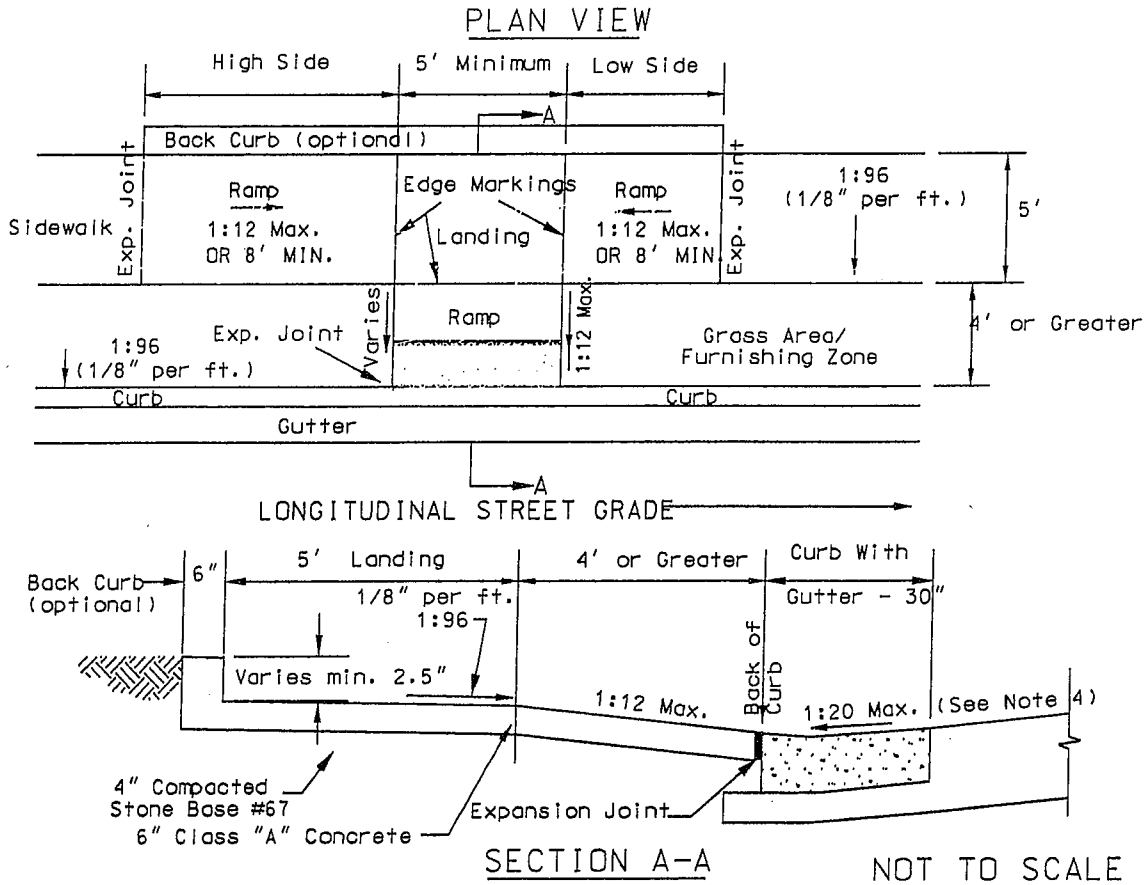
NOT TO SCALE

GENERAL NOTES

1. Ramp shall be flush with the gutter or edge of pavement.
2. Cross-slope of landing and of sidewalk shall not exceed 1:48 (vertical:horizontal).
3. Surface texture of the curb ramp shall be stable, firm, and slip-resistant. The surface shall be coarse broomed "white" concrete finish transverse to the slope of the ramp.
4. The normal gutter slope of 1:12 (vertical:horizontal) shall be reduced to 1:20 (vertical:horizontal) at the ramp when the curb and gutter is poured before the ramp, or the gutter at the ramp must be cut out, removed, and repoured when the ramp is poured.
5. Back curb shall be constructed at the direction of Public Works, and if required, back curb height along ramp shall transition from 0 inches at expansion joints to the proposed height of back curb at landing and shall be a constant height through landing. Deletion of back curb requires approval of inspector. Removal to be noted in project file and on inspection report.
6. High side and low side ramps shall have a maximum slope of 1:12 (vertical:horizontal) or shall be 8 feet (96 inches) minimum in length.

New Construction Curb Ramp

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-320

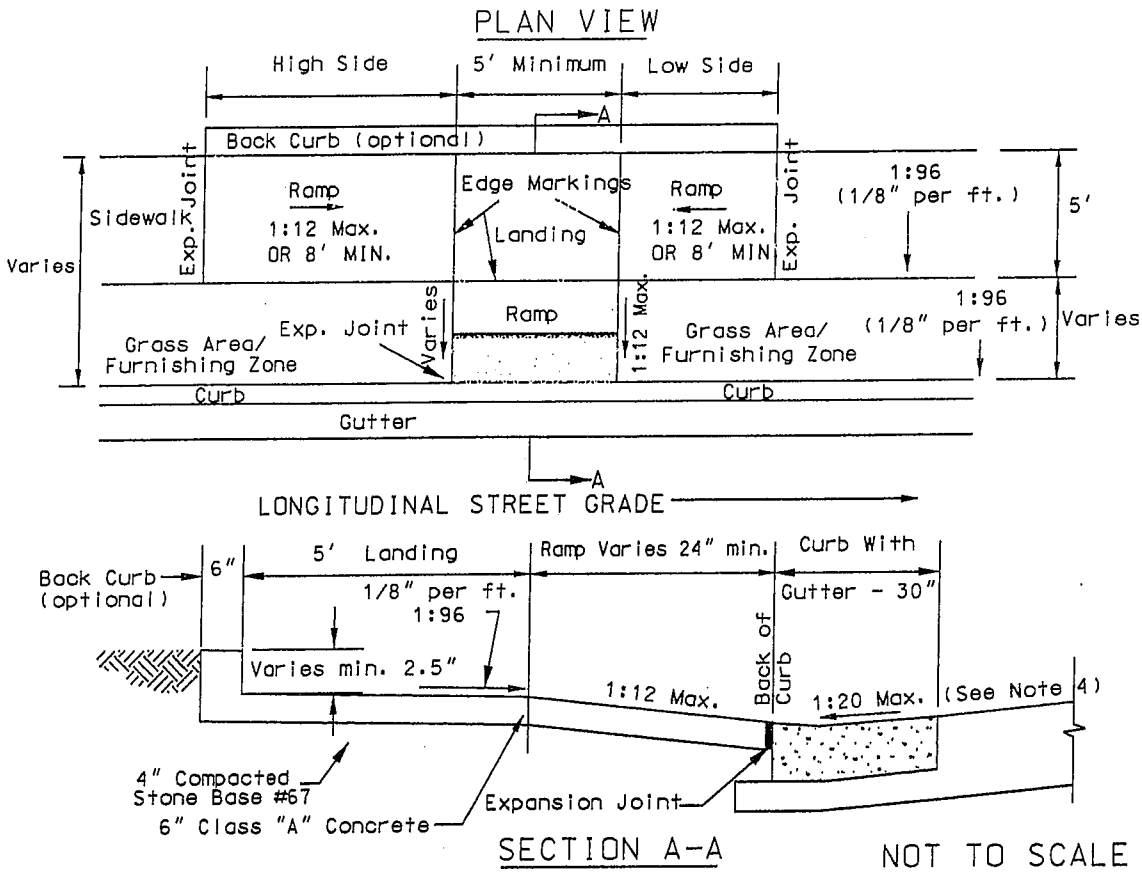


GENERAL NOTES

1. Ramp shall be flush with the gutter or edge of pavement.
2. Cross-slope of landing and of sidewalk shall not exceed 1:48 (vertical:horizontal).
3. Surface texture of the curb ramp shall be stable, firm, and slip-resistant. The surface shall be coarse broomed "white" concrete finish transverse to the slope of the ramp.
4. The normal gutter slope of 1:12 (vertical:horizontal) shall be reduced to 1:20 (vertical:horizontal) at the ramp when the curb and gutter is poured before the ramp, or the gutter at the ramp must be cut out, removed, and repoured when the ramp is poured.
5. Back curb shall be constructed at the direction of Public Works, and if required, back curb height along ramp shall transition from 0 inches at expansion joints to the proposed height of back curb at landing and shall be a constant height through landing. Deletion of back curb requires approval of inspector. Removal to be noted in project file and on inspection report.
6. High side and low side ramps shall have a maximum slope of 1:12 (vertical:horizontal) or shall be 8 feet (96 inches) minimum in length.

Alternate Construction Curb Ramp w/ Sidewalk 9' or Greater

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-321



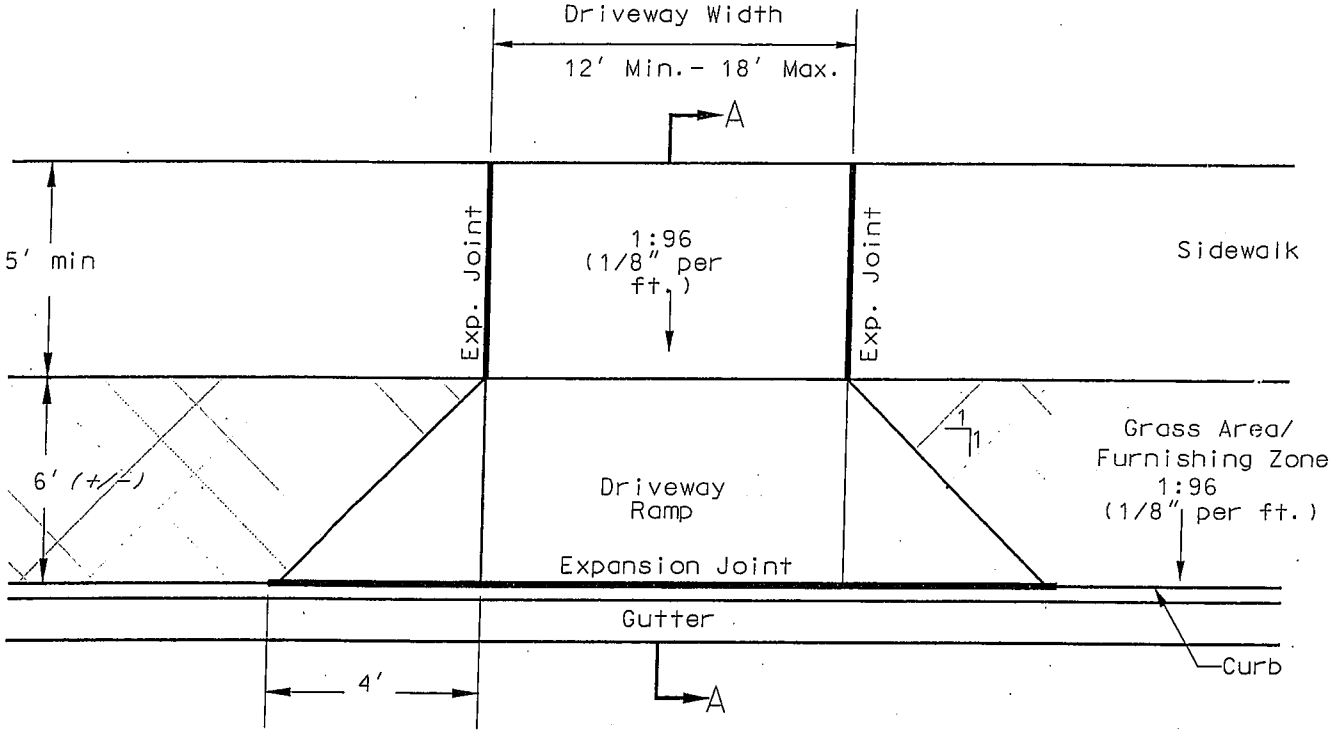
GENERAL NOTES

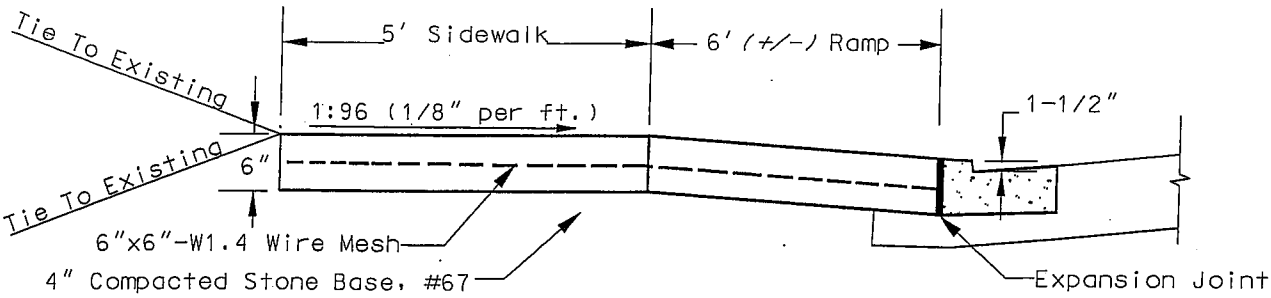
1. Ramp shall be flush with the gutter or edge of pavement.
2. Cross-slope of landing and of sidewalk shall not exceed 1:48 (vertical:horizontal).
3. Surface texture of the curb ramp shall be stable, firm, and slip-resistant. The surface shall be coarse broomed "white" concrete finish transverse to the slope of the ramp.
4. The normal gutter slope of 1:12 (vertical:horizontal) shall be reduced to 1:20 (vertical:horizontal) at the ramp when the curb and gutter is poured before the ramp, or the gutter at the ramp must be cut out, removed, and repoured when the ramp is poured.
5. Back curb shall be constructed at the direction of Public Works, and if required, back curb height along ramp shall transition from 0 inches at expansion joints to the proposed height of back curb at landing and shall be a constant height through landing. Deletion of back curb requires approval of inspector. Removal to be noted in project file and on inspection report.
6. High side and low side ramps shall have a maximum slope of 1:12 (vertical:horizontal) or shall be 8 feet (96 inches) minimum in length.

Alternate Construction Curb Ramp w/ Sidewalk 9' or Less

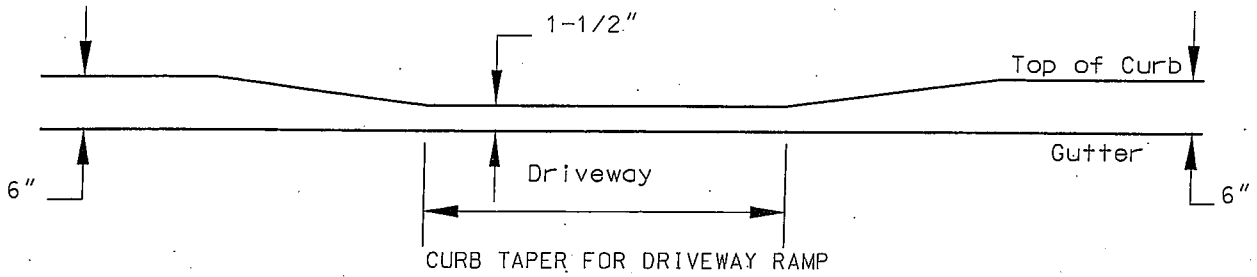
LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-321A

PLAN VIEW





SECTION A-A



CURB TAPER FOR DRIVEWAY RAMP

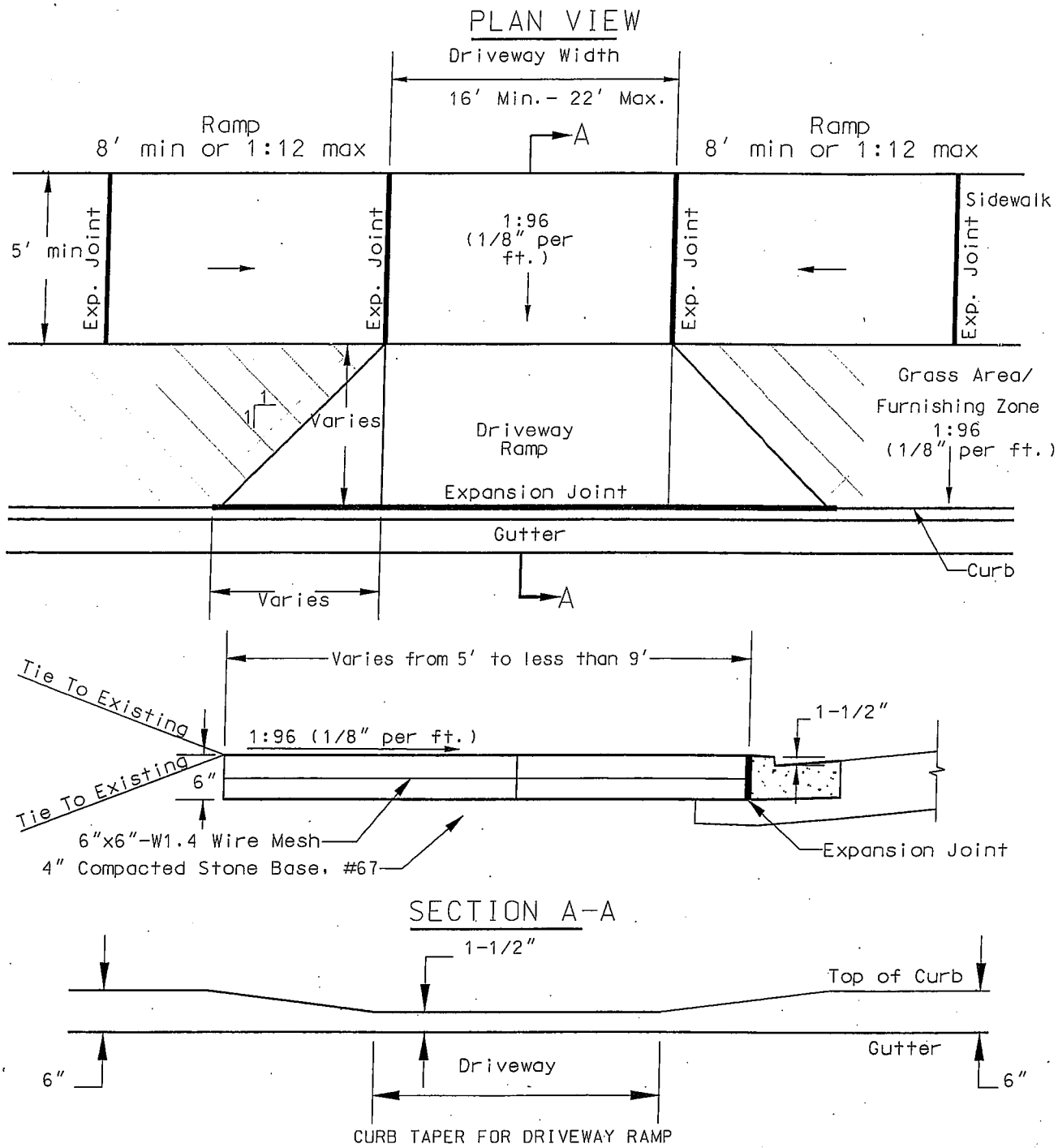
NOTE: 1. Cross-slope of sidewalk shall not exceed 1:48 (vertical:horizontal).

2. Fiber mesh reinforcement is an approved alternative for the wire mesh. Fiber mesh reinforcement will be added to the concrete at the batch plant at the rate of 1½ pounds per cubic yard.

NOT TO SCALE

New Construction Residential Driveway Ramp

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-322



NOTE: 1. Cross-slope of sidewalk shall not exceed 1:48 (vertical:horizontal).

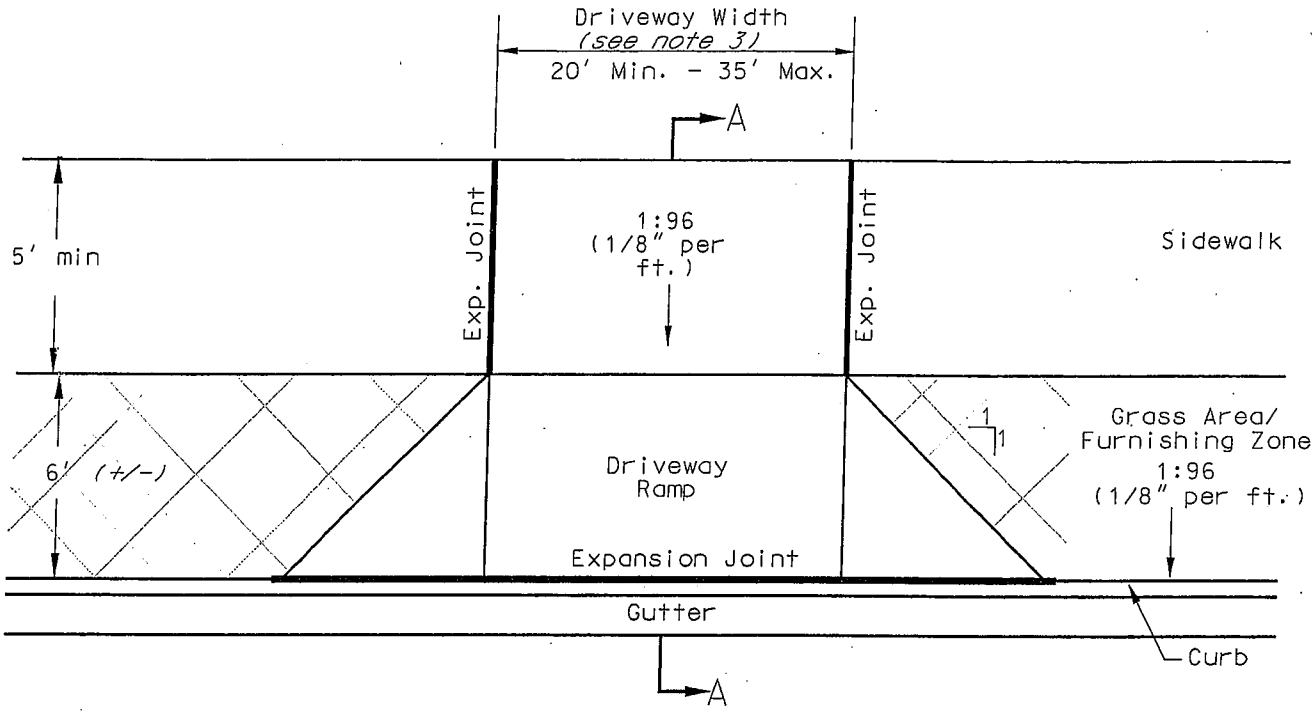
2. Fiber mesh reinforcement is an approved alternative for the wire mesh. Fiber mesh reinforcement will be added to the concrete at the batch plant at the rate of $1\frac{1}{2}$ pounds per cubic yard.

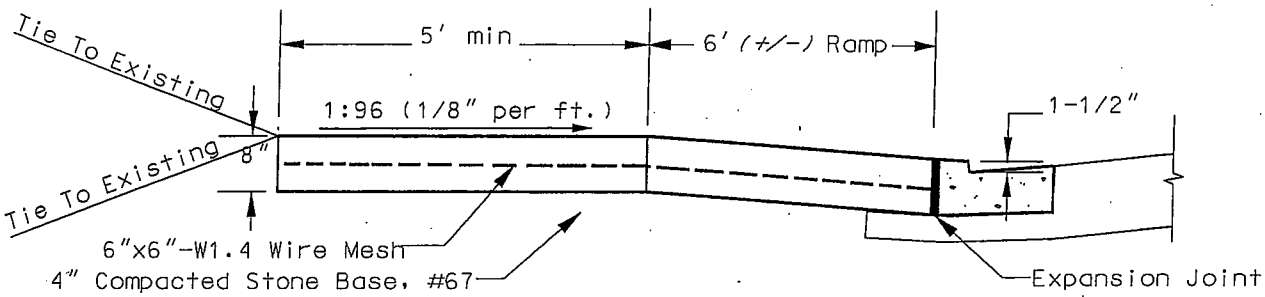
NOT TO SCALE

Alternate Construction Residential Driveway Ramp w/ Sidewalk Less than 9'

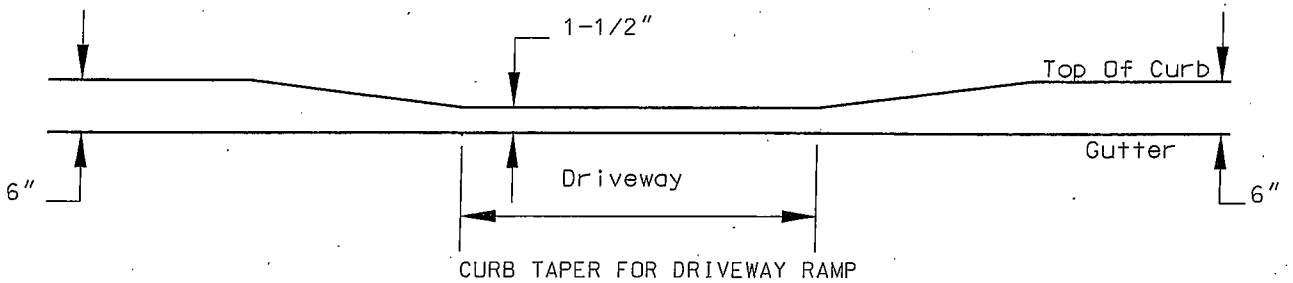
LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-323

PLAN VIEW





SECTION A-A



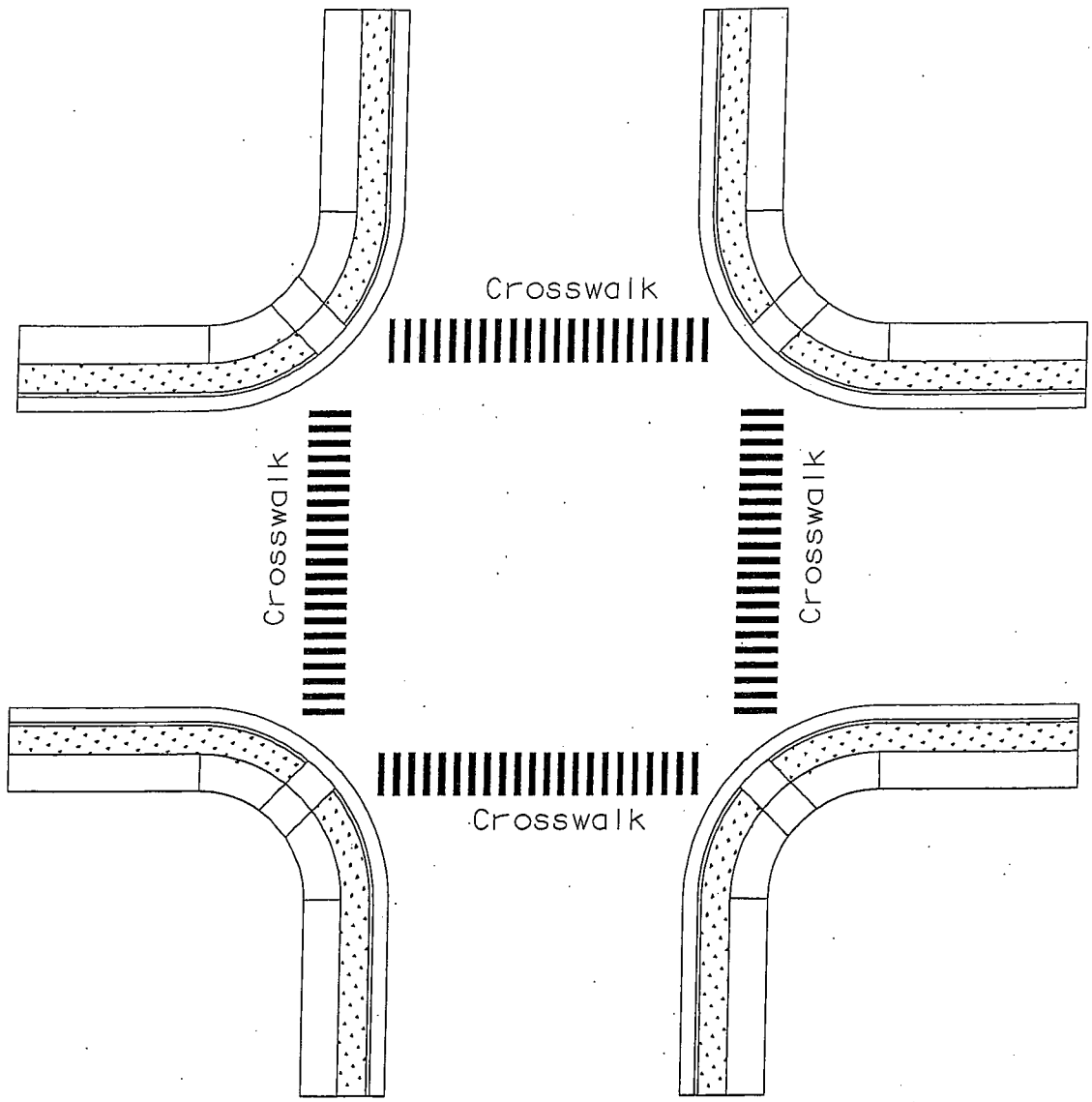
CURB TAPER FOR DRIVEWAY RAMP

NOTE: 1. Cross-slope of sidewalk shall not exceed 1:48 (vertical:horizontal).
2. Fiber mesh reinforcement is an approved alternative for the wire mesh. Fiber mesh reinforcement will be added to the concrete at the batch plant at the rate of 1½ pounds per cubic yard.
3. Driveway Widths with Islands shall be 16' minimum each.

NOT TO SCALE

New Construction
Commercial Driveway Ramp

LEBANON, TN. - DEPARTMENT OF PUBLIC WORKS	STANDARD DETAIL	ST-324



GENERAL NOTES

1. GEOMETRIC LAYOUT IS FOR CURB RADIUS GREATER THAN 25'.
2. SEE CURB RAMP STANDARD DRAWINGS FOR CONSTRUCTION DETAILS.
3. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS.
4. ALL MARKINGS TO CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NOT TO SCALE

Geometric Layout at Curb Returns w/ Radius > = 25'

Appendix D Roadway Construction Criteria and Testing Procedures

Roadway Construction Criteria

1. All independent testing firm work required by this appendix shall be performed by firms on the current City of Lebanon approved list. All costs of initial inspection and inspection required to correct faulty work shall be borne by the developer. The testing firm shall provide all specified testing reports outlined in this Appendix to the responsible staff person at the City of Lebanon, this person being designated by the City/Utilities Engineer. Any extraneous or repeated tests required by the City not outlined in these specifications or not due to poor workmanship shall be paid for by the City of Lebanon. The City of Lebanon Engineering Department retains full authority and discretion over the construction or public roadways and acceptance of work.

2. A list of approved testing agencies will be maintained on the City of Lebanon Engineering Dept. website.

3. All fill areas within the public Right-of-Way which are greater than 1 ft. in depth shall be constructed under the observation of an independent testing agency as it is being placed. The testing agency shall be responsible for ensuring correct lift thicknesses and density requirements as defined in this Appendix.

4. All roadways, after clearing, grubbing and topsoil removal shall be slope staked and/or centerline grade stakes placed prior to grading operations so that the testing firm and/or the City of Lebanon Roadway Inspector can determine the extents of the fill sections.

5. All underground pipe/conduit, including but not limited to storm drain, irrigation, sanitary sewer, water, electric, gas, communication and cable TV be installed or casings provided for prior to the proof-rolling of subgrade and initial placement of roadway base stone course. Work of this type performed after placement of base stone/paving will require a repair method reviewed and approved by the City Engineering Dept. Extent of repair will be based upon the type/extents of the work and the stage of construction.

6. A representative of the City of Lebanon Engineering Department shall be onsite in addition to the independent testing firm to observe the proof-rolling of subgrade, base stone installation/proof-rolling and placement of asphalt as outlined in this Appendix. The developer and/or his representative will be required to notify the City's designated contact a minimum of 48 hours prior to performing the work. This contact information will be provided at the pre-construction conference and/or designated on the plans. The City may decide to allow the independent testing agency to observe the work with only periodic inspection by the City inspector depending on schedule constraints. Every effort will be made by the City to not impact the schedule of construction whenever possible. It is, however, the responsibility of the developer or his representative to maintain good communication with the City.

7. A registered surveyor shall provide and stamp a letter certifying that the compacted subgrade is within +/- 0.10 ft. of design elevation before any base stone is placed. This letter is to be received and approved by the responsible staff person with the City. Subgrade elevations should be verified at centerline and face of curb every 50 ft. of

roadway. A sheet should be provided with this letter showing design vs. actual subgrade elevations by station.

8. The City of Lebanon Roadway Inspector shall be provided copies of all base stone and asphalt truck tickets showing the type of material and tonnage, stamped by a certified weigher. These total tonnages shall be used to ensure that the placed tonnage is reasonably close to calculated expectations.

9. Any areas of subgrade, base stone or asphalt that do not meet the specifications/criteria of this appendix or these Subdivision Regulations shall be removed and repaired at the direction of and under the observance of the City Inspector and the testing agency. The extent of the repairs shall be estimated before the repair begins based on observation and test results.

10. Failing subgrade areas in either cut or fill areas shall be removed to a depth that the testing agency and City Roadway Inspector concur is necessary and refilled with 6" and down size shot rock/surge stone back to finished subgrade.

11. The City of Lebanon Roadway Inspector IS NOT the authority on changing plans, altering testing methods or criteria, making decisions on materials or final acceptance of work. The City/Utilities Engineer and/or his/her designated representative shall concur with all testing and recommendations from the testing firm and make any decisions regarding an alteration in plans. The City Inspector will observe the work in accordance with the guidelines herein and the plans approved by the Engineering Dept. then report findings back to the Engineering Department.

12. The testing firm shall record data including: project name/phase, name of observer/engineer, date, time of test/observation, type of fill, observations, location of fill/base stone/asphalt test locations (by roadway station), and other pertinent data to verify the requirements as set forth in this Appendix.

13. The City Roadway Inspector shall be made aware immediately of any failing tests and associated work stopped until a solution is determined. All testing reports shall be furnished to the City Engineering designated contact in PDF format via CD or e-mail. Reports are due either at the completion of a scope of work or monthly, whichever occurs first. The City will provide written confirmation that the scope of work is acceptable before proceeding with the next and will do so in as timely a manner as the data submission allows. For example, the subgrade will be accepted before base stone can be placed, etc.

14. If the contractor does not have the specified equipment as detailed below for compaction (i.e., a Cat D-8 or equivalent tractor), then the testing company and the City Engineering Dept. shall review the proposed equipment and make adjustments as necessary. Lift thickness, particle size, number of passes and other adjustments can be made to accommodate available equipment. There will be reasonable limits to this exception and any quantifiable compaction standards set forth in this Appendix will remain in force.

Roadway Testing Procedures and Material Specifications

I. Grading/Subgrade Soils

1. Cut sections shall be cut to grade and proof-rolled by a loaded tri-axle dump truck or equivalent piece of equipment (determined by testing agency and the City Inspector). Areas showing any pumping or rutting under the moving load shall be repaired in accordance with the assessment of the testing firm and the City Inspector. No repair is to be performed that is not inspected by the testing firm and/or the City Inspector. Areas of severe failure may require the opinion of a geotechnical engineer from the testing firm.

2. Fill areas:

   a. Before the placement of fill material, the areas to receive fill shall be treated as follows:

      - All topsoil and organic material shall be removed. Topsoil is defined as soil material with a pH between 5.5 and 7.5 and organic content between 5 and 25% by weight.

      - The City Inspector and testing firm shall assess the surface where fill is to be placed and any determinations made if undercutting is required. Fill areas which will receive more than 3 ft. of material will not necessarily require stripping or undercutting if the City Inspector and testing firm agree that the underlying material can be bridged with the proposed type of fill.

      - Swampy and wet areas should be dewatered and rehabilitated based on recommendations from the geotechnical engineer from the testing firm. The City Inspector must concur.

      - Any fill placed without observation and documentation by the testing firm is subject to removal and replacement.

      - No fill is ever to be placed on surfaces with standing water or frozen material.

      - Any fill, regardless of the fill material to be placed, which is less than 2 ft. deep, shall be placed in lifts no greater than 8” and the particle size shall not exceed 8”.

   b. Soils: Fill material comprised of soils with less than 20% rock content must be placed in 8” compacted lifts, with the compaction effort being made by a sheepsfoot roller, at the direction of and under the observation of the testing firm as follows:

      - Soil fill shall consist of a fine-grained soil with a UCS designation of ML, CL or CH. The soil shall consist of no more than 5% by weight of organic

material and no rocks larger than 4". The plasticity index shall be less than 35 (ASTM D 4318).

- The soils shall be compacted to a minimum of 95% of the maximum density by the standard proctor method (ASTM D 698).

- The proctor density test to establish the maximum density will be performed by the testing firm. If the consistency, moisture content or other properties of the soils change within the project, a new standard proctor test value will need to be determined.

- Testing of the in-place soil fill shall be performed at a minimum rate of every 150 feet of roadway for each lift of fill. Tests should be made in varying locations along the cross-section of the roadway.

- Soils with excess moisture, organic materials or phosphates are not acceptable for roadway fills. The testing firm shall evaluate the soils and is responsible for determining suitable soils and obtaining concurrence from the City Engineering Department.

- Upon achieving finished subgrade elevation, the roadways will be proof-rolled in accordance with the same procedure as in Section I (1) above.

c. Shot Rock: Fill material comprised of shot rock with less than 20% fine particles (limestone rock/dust or soil particles less than ¼" in size) shall be placed in lifts as follows:

- Fill sections greater than 10 ft.: Max particle size is 36", maximum lift thickness is 36". The top 2 feet of fill should be constructed in the same manner as specified for fill sections less than 10 ft.

- Fill sections less than 10 ft.: Max particle size is 18" and lift thickness should be no more than 24".

- Larger rocks shall be placed flat and not overlap each other.

- All shot rock fills shall be placed with at least 6 passes with a Caterpillar D-8 or equivalent size tractor.

- Fill lifts should be level and smaller size rocks filling voids.

- Upon achieving finished subgrade elevation, the roadways will be proof-rolled in accordance with the same procedure as in Section I (1) above.

d. Soil/rock mixtures: Placement or soil/rock mixtures outside the above proportion criteria shall be placed as follows based on soil/rock ratio:

- 20-50% Soil/Fine Material:

- Maximum particle size should not exceed 12”
- Fill shall be placed in lifts no greater than 18”.
- Upon achieving finished subgrade elevation, the roadways will be proof-rolled in accordance with the same procedure as in Section I (1) above.
- These fills shall be placed with at least 6 passes with a Caterpillar D-8 or equivalent size tractor.

- 50-70% Soils Fine Material:

  - Maximum particle size should not exceed 6”
  - Fill shall be placed in lifts no greater than 12”
  - Upon achieving finished subgrade elevation, the roadways will be proof-rolled in accordance with the same procedure as in Section I (1) above.
  - These shall be placed with at least 6 passes with a Caterpillar 815 or equivalent size compactor.

e. The testing firm and City of Lebanon Engineering Department may assess soil/rock combination fill material and adjust the maximum particle size and lift thickness based on the condition of the material and size of the fill.

II. Roadway Base Stone

1. Base stone shall not be placed until all underground utilities are installed and/or applicable casings placed for future installations. Any roadway cuts made after base stone placement shall be approved by the City Engineering Department. These cuts shall be backfilled to subgrade with #57/67 graded stone and mechanically tamped base stone to existing base stone grade. Base stone replaced in trenches shall be tested for compaction to the same standards listed below for roadway.

2. Materials: The aggregate base course gradation and material composition shall be in accordance with current TDOT specifications for Mineral Aggregate Base Course, Type A, Grading D (Section 903.05)

3. Local sources of the base stone must have TDOT approved gradation reports and density on file with the City dated no less than 6 months prior to the scheduled work. It is the responsibility of the developer or his/her testing firm to coordinate with the City to ensure these reports are current and use the information contained within to evaluate the base stone gradation/density. The developer, at his/her option and cost may have the testing firm sample stone from the quarry and run their own density/gradation report and present the results to the City for approval as basis for the work on the project. Testing method shall be AASHTO T99, Method D.
4. The density of the base stone will be measured by use of a properly calibrated nuclear gauge. The average density shall not be less than 97% of the maximum density as shown on the TDOT density report or City approved test by the testing firm with no individual test less than 94% of maximum density.

5. Density samples should be taken in a random pattern across the cross-section of the roadway with a frequency of every 100 ft. of roadway. Density tests should be performed on each lift of stone. Areas not meeting the density requirements shall be re-compacted or removed/replaced.

6. A gradation sample shall be pulled and tested for every 500 ft. of roadway. A minimum of one gradation sample will be made per day. Material not falling within the gradation limits set for Grading D mineral aggregate base shall be rejected.

7. Base stone shall be placed in lifts not exceeding 6" of compacted thickness.

8. Base course shall be proof-rolled under the criteria of Section I (1) above. The proof-roll of the base course shall not precede placement of prime coat and aggregate for cover material ("chips") by more than 3 days. Proof-roll shall be repeated at the discretion of the City Roadway Inspector if inclement weather has occurred between the proof-roll and prime/chip placement.

III. Asphalt

1. General Guidelines:

- Sources of the asphalt must have approved mix designs on file with the City dated no more than 6 months prior to the scheduled work. It is the responsibility of the developer or his/her testing firm to coordinate with the City to ensure these reports are current and to use the information contained within to evaluate the asphalt.

- All asphalt shall come from TDOT approved plant facilities with personnel and lab facilities as required by current TDOT standards. Application can be made to the City for non-TDOT approved asphalt facilities and the City shall examine the credentials of the facility to determine if they have the necessary experience and equipment to consistently produce asphalt mixes that meet TDOT criteria.

- Anti-strip additive is not required unless specifically stated on plans.

- The independent testing firm shall be expected to make periodic checks (at least once for each type of mix to be placed) of the plant facility producing the asphalt to ensure quality control. These inspections are to be random.

- Upon completion of an acceptable proof-roll of the finished base course and prior to asphalt paving, prime coat and chip course shall be installed on finished base stone in accordance with Sections 402-01 and 402-02, respectively, of the current TDOT specifications.

- Tack coat shall be applied to previously placed asphalt mix before the successive course is placed. Tack coat shall be applied in accordance with Section 403 of the current TDOT specifications.

2. Asphaltic Binder/Base Course:

- Asphaltic binder course shall be 307-BM in accordance with Section 307 of the current TDOT specifications. Aggregate content/gradation shall be according to Section 903.06 for Grading BM. Asphalt cement shall be PG64-22 unless otherwise specified on plans. Compacted lift thickness for 307-BM shall not exceed 3".

- Asphaltic black base course, when specified, shall be 307-A in accordance with Section 307 of the current TDOT specifications. Aggregate content/gradation shall be according o Section 903.06 for Grading A. Asphalt cement shall be PG64-22 unless otherwise specified on plans. Compacted lift thickness for 307-A shall not exceed 4".

- Binder/black base shall be placed, at a minimum, in compacted lift thicknesses as specified on the plans. Compacted thickness shall be measured during placement and cores shall be taken every 250 ft. of roadway. A minimum of one core will be made for every day of paving operations.

- Density tests will be made from the cores and the acceptable density shall be an average of 91% of the theoretical density on the mix design. No test less than 89% of the maximum will be accepted.

- Nuclear gauge density tests may be preformed in lieu of cores. If this method is employed, at least one core per day or one core every 500 ft. must be made and used to verify thickness. The testing firm must certify that the compacted thickness was measured in the field during placement.

- Samples will be pulled from delivery trucks or asphalt hoppers to be lab tested for gradation. Samples shall be pulled for every 200 tons of asphalt or at least once per paving day. Samples which fail gradation may result in some or all of that day's pavement to be removed and replaced. It shall be at the option of the developer to core that day's paving to perform extraction tests and present the results to the City. The City Engineering Staff will examine the results to determine if the roadway section is acceptable.

3. Asphaltic Surface Course

- Asphaltic surface course shall be either 411-D or 411-E in accordance with Section 411 of the current TDOT specifications. Aggregate content/gradation shall be according to Section 903.11 for Grading D or E. Asphalt cement shall be PG64-22 unless otherwise specified on plans.

- Surface course shall be placed in lift thicknesses as specified on the plans at or greater than the specified compacted thickness. Compacted thickness shall be measured during placement.

- Samples will be pulled from delivery trucks or asphalt hoppers to be lab tested for gradation. Samples shall be pulled for every 200 tons of asphalt or at least once per paving day. Samples which fail gradation may result in some or all of that day's pavement to be removed and replaced. It shall be at the option of the developer to core that day's paving to perform extraction tests and present the results to the City. The City Engineering Staff will examine the results to determine if the roadway section is acceptable.

- Surface course shall not be placed until:

  - At least 75% of homes in the phase/subdivision are complete.
  - All sidewalks are installed.
  - All inspections have been made by the City Engineering Dept. and all specified repairs and other "punch list" items completed.
  - Any and all other requirements as set forth in the Subdivision Regulations are met

Appendix E Critical Lots

Appendix E. Critical Lots

Critical Lot Plan Requirements: Prior to application for a building permit on a lot designated as "critical", a surveyed plan shall be submitted to the City Engineer for approval drawn at a scale of 1" = 20'. Said plan shall be stamped by a State of Tennessee licensed professional civil engineer with a note of certification as to the soundness and stability of proposed structures on the property. The plan shall provide a survey of existing conditions, details of the proposed development, and address any concerns in relation to the feasibility of construction (all shown to a point 10 feet outside the lot boundaries) on the lot as follows and/or applicable to the specific lot or parcel:

a. Existing and proposed contour lines (including driveways) at minimum 2-foot intervals.
b. The location and elevation of the curb or edge of pavement fronting the lot and the elevation of the driveway at the house.
c. Lot dimensions, easements, setbacks, etc. which are shown on the recorded plat or a note designating setbacks to be determined by the zoning and/or any easements if not shown on the plat.
d. Notations of significant features such as blue line streams, drainage ways, wetlands, marshes, springs, rock outcrops, and karst features such as dropouts and/or sinkholes; and, if applicable, the floodplain and/or floodway as shown on the final plat.
e. Exact proposed building footprint.
f. Garage and first floor elevations.
    1. For lots in a designated floodplain, the plan shall show minimum finished floor (includes garage), pad, and HVAC unit elevations based on the current floodplain ordinance.
    2. For lots not in a designated floodplain, but adjacent to a large drainage channel, blue line stream, sinkhole, and/or otherwise low lying area with the potential for flooding, the plan shall show minimum finished floor (includes garage), pad, and HVAC unit elevations based on the requirements listed in Article III Section C(4) of the City of Lebanon's Subdivision Regulations.
g. Proposed driveway access dimensions and distance from property line.
h. Location of other proposed lot improvements.
i. Top and bottom elevations of retaining walls and materials of wall construction.
j. Specified and illustrated methods for stabilization of the lot including temporary measures for construction purposes and permanent stabilization after construction.
k. Limits of grading;
l. Arrows showing direction of water draining away from structures;
m. Methods of managing storm water runoff.
n. The name, address, and phone number of the professional responsible for the design of the Critical Lot Plan.
o. The name, address and phone number of the owner of the lot.

p. The name, address and phone number of the builder that will be working on the site.
q. One of the above three individuals must be designated as the primary contact on the face of the plan.
r. Any other information the City Engineer deems reasonably necessary in the evaluation of such critical lots.
s. The City Engineer may request additional technical evaluation and analysis of a proposed critical lot by a professional engineer specializing in geotechnical, soils, hydrology, and/or structures.