Subdivision Regulations

PORTLAND, TENNESSEE
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ARTICLE I: GENERAL PROVISIONS

1-101 Title
These regulations shall hereinafter be known and cited as the Subdivision Regulations of Portland, Tennessee.

1-102 Authority
These subdivision regulations are adopted by the Portland Municipal-Regional Planning Commission (hereinafter referred to as "planning commission"), pursuant to the authority and powers granted by Sections 13-3-401 through 13-3-411 and 13-4-301 through 13-4-309, Tennessee Code. Having adopted a major street or road plan for the jurisdictional area, and filed a certified copy of the plan with the Sumner County Register of Deeds (hereinafter referred to as "County Register"), as required by Sections 13-3-402 and 13-4-302, Tennessee Code, and having held a public hearing as indicated in Subsection 1-107.1, of these regulations, the planning commission has fulfilled the requirements set forth in state law as prerequisites to adoption of these regulations.

1-103 Jurisdiction
These subdivision regulations shall apply to all subdivisions, as herein defined, located within Portland, Tennessee, and its extraterritorial planning region as established by resolution of the Local Government Planning Advisory Committee. No land shall be subdivided within the jurisdictional area until the subdivider submits a plat as required by these regulations, obtains planning commission approval of the plat, and files the approved final plat with the county register.

1-104 Policy and Purpose
It is hereby declared to be the policy of the planning commission to consider subdivision of land and development of a subdivision plat as subject to control of the adopted land use or community development plan (hereinafter referred to as "land development plan") of the jurisdictional area for orderly, planned, and efficient physical and economical development.

Land to be subdivided shall be of such character that it can be used for building purposes without danger of fire, flood, or other menace.

Land shall not be subdivided until proper provisions have been made for drainage, water, sewerage, other public utilities, and for other required public services. The existing and proposed public improvements shall generally conform to and be properly related to proposals shown in the land development plan.

The regulations herein shall supplement and facilitate enforcement of the provisions and standards contained in the Combined Zoning Ordinance of Portland, Tennessee and the Portland Planning Region (hereinafter referred to as "zoning regulations").

These regulations are adopted for the following purposes:
A. To promote the public health, safety, and general welfare of the jurisdictional area.

B. To guide development of the jurisdictional area in accordance with the land development plan, considering the suitability of nonresidential and public areas and having regard for the most beneficial land use in such areas.

C. To provide for adequate light, air, and privacy; to secure safety from fire, flood, and other dangers; and to prevent overcrowding of the land and undue congestion of population.

D. To enhance the character and economic stability and encourage the orderly, beneficial development of the jurisdictional area.

E. To conserve the value of land, buildings, and improvements throughout the jurisdictional area and to minimize detrimental conflicts among the uses of land and structures.

F. To guide public and private policy and action providing for transportation, water, sewerage, schools, recreational areas, and other public requirements and facilities.

G. To provide for the most beneficial relationship between the uses of land and buildings and the efficient movement of traffic throughout the jurisdictional area.

H. To establish reasonable standards of design and procedures for subdivisions and resubdivisions; to further the orderly layout and use of land; and to insure proper legal descriptions and proper monumenting of land.

I. To insure that public facilities are available and will have sufficient capacity to serve all proposed subdivisions.

J. To prevent pollution of air, streams, and ponds; to assure adequacy of drainage facilities; to safeguard the water table; and to preserve the integrity, stability, beauty, and value of land within the jurisdictional area.

K. To preserve the natural beauty and topography of the jurisdictional area, and to insure appropriate development with regard to these natural features.

L. To provide for open spaces through efficient design and layout of the land, including use of average density to provide for reductions in minimum width and area of lots, while preserving the density of land as established in the zoning regulations.

M. To encourage subdivision design which would maximize conservation of all forms of energy.
1-105 Interpretation, Conflict, and Severability

1-105.1 Interpretation
These regulations shall be held to be the minimum requirements for promotion of health, safety, and general welfare.

1-105.2 Conflict with Public and Private Provisions

1-105.201 Public Provisions
These regulations are not intended to interfere with, abrogate, or annul any other ordinance, rule, or regulation, statute, or other provision of law. Where any provision of these regulations imposes restrictions different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provisions are more restrictive or impose higher standards shall control.

These regulations are not intended to abrogate any easement, covenant, or other private agreement or restriction; provided, that where these regulations are more restrictive or impose higher standards than such easement, covenant, or other private agreement or restriction, the requirements of these regulations shall govern.

Where any private provision exceeds the standards set forth herein, such shall be considered a private contract between the parties of interest, and, as such, is beyond the jurisdiction of the planning commission.

1-105.3 Severability
If any part or provision of these regulations or application thereof to any person or circumstances is adjudged invalid by any court of competent jurisdiction, such judgment shall be confined in its operation to the part, provision, or application directly involved in the controversy where such judgment shall have been rendered and shall not affect or impair the validity of the remainder of these regulations or the application thereof to other persons or circumstances. The planning commission hereby declares that it would have enacted the remainder of these regulations without any such part, provision, or application.

1-106 Saving Provision
These regulations shall not be construed as abating any action now pending under, or by virtue of prior subdivision regulations; or as discontinuing, abating, modifying, or altering any penalty accruing or about to accrue; or as affecting the liability of any person; or as waiving any right of the governing body under any section or provision existing at the time of adoption of these regulations; or as vacating or annulling any rights obtained by any person by lawful action of the governing body, except as expressly provided otherwise in these regulations.
1-106.1 Previously Approved Subdivisions

1-106.101 Unexpired Preliminary Approval
The approval granted on any plat prior to the effective date of these regulations shall remain in force and effect for the time period stipulated by the regulations under which the approval was first granted.

1-106.102 Expired Preliminary Approval
In any instance where the period of preliminary approval shall have passed with some portion of the subdivision not having received final approval, and the applicant wishes an extension of the preliminary approval, the planning commission may:

a. permit the remaining portion of the subdivision to be constructed and to receive approval under provisions set forth in the regulations whereby preliminary approval was originally granted, or

b. stipulate that the plat is null and void and that a new plat be presented subject to all laws and provisions of these regulations that are in effect at the time such action is considered.

In making this determination, the planning commission shall consider all pertinent facts available to it. The current state and active pursuit of construction and development activities within the subdivision shall be given due consideration in the course of the planning commission's deliberation on this question.

1-106.2 Failure to File Approved Plats
All previously approved final plats shall be filed with the county register's office within one (1) year following adoption of these subdivision regulations. In the event the owner fails to file a plat within the time period stipulated herein the approval shall become void and no building permit may be issued for any lot located therein until action is taken to reinstate the plat. All final plats approved under these regulations shall be filed with the county register's office within two (2) years following Planning Commission approval.

1-107 Amendments

1-107.1 Enactment
For the purpose of providing for the public health, safety, and general welfare the planning commission may from time to time amend these regulations. Before adoption of any amendment to these regulations, a public hearing thereon shall be held by the planning commission, as required by Chapters 3 and 4, Title 13, Tennessee Code.
1-107.2 Codification and Distribution
Subsequent to adoption of any amendment to these regulations, such amendment shall be incorporated into the text of these regulations in the following manner.

1. Replacement pages shall be prepared incorporating the new or changed language. Each such new or replacement page shall have the amendment number and shall be dated so as to indicate the date of last revision of the page.

2. In Article VII, of these regulations, each adopted amendment shall be numbered consecutively and printed on pages separate from any other amendment and in a manner that fully states any language deleted from these regulations and any language added and the place in the text of each such change.

1-108 Resubdivision of Land

1-108.1 Procedures for Resubdivision
If any change in an approved or recorded subdivision plat would affect the layout of any public street, alley, or road (hereinafter referred to as public way) shown on such plat, or area reserved thereon for public use, or any lot line, or if it would affect any map, plan, or plat legally recorded before adoption of any subdivision regulations, such amendment shall be approved by the same procedure, rules, and regulations as for a subdivision.

1-108.2 Subdivision Procedures Where Future Resubdivision Is Foreseen
Whenever a parcel of land is subdivided and the subdivision plat shows one or more lots containing more than double the minimum required area for any zoning district in which the lot is located, and the planning commission has reason to believe that any such lot(s) will be resubdivided into smaller building sites, the planning commission may require that the subdivision and development of such parcel of land allow for the future opening of public ways and the ultimate extension of adjacent public ways or that such lots be restricted from further subdivision through a permanent conservation easement. The planning commission may also require that dedications providing for future opening and extension of such public ways be indicated on the plat.

1-109 Conditions
Regulation of the subdivision of land and the attachment of reasonable conditions to land subdivision are exercises of valid police power delegated by the state to the planning commission. The developer has the duty of compliance with reasonable conditions imposed by the planning commission for design, dedication, improvement, and restrictive use of the land so as to provide for physical and economical development of the jurisdictional area and for the safety and general welfare of future plot owners in the subdivision and of the community at large.
1-110 Vacation of Plats
Any plat or any part of any plat may be vacated by the owner of the premises, at any time before sale of any lot described therein, by a written instrument, to which a copy of such plat shall be attached, declaring the plat or part of the plat to be vacated. In approving the vacation of plats the planning commission shall follow the same procedure for approval of plats. The governing body may reject any such instrument that abridges or destroys any public rights in any of its public uses, improvements, or public ways. Such an instrument shall be executed, acknowledged, or approved, and duly recorded or filed; the instrument shall operate to void the recorded plat and divest all public rights in the public ways and public grounds and all dedications described in such plat. When any lot or lots have been sold the plat may be vacated in the manner herein provided only if all of the owners of all lots in such platted area join in the execution of such writing.

1-111 Variances

1-111.1 General
If the planning commission finds that extraordinary hardships or practical difficulties may result from strict compliance with these regulations, a variance from these regulations may be granted; provided, such variance shall not have the effect of nullifying the general intent and purpose of these regulations and provided, further, that the planning commission shall not recommend variations unless it shall make findings based upon written evidence presented to it in each specific case that:

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

2. conditions upon which the request for a variance is based are unique to the property for which the variance is sought and are not applicable generally to other property;

3. because of the particular physical surroundings, shape, or topographical condition of the specific property involved, a particular hardship (not self-imposed) to the owner would result, as distinguished from a mere inconvenience, if the strict letter of these regulations were carried out; and

4. the variance will not in any manner alter provisions of the land development plan, the major street or road plan, or the zoning ordinance.

Where the planning commission concludes that the purpose of these regulations may be specifically served to an equal or greater extent by an alternative proposal, condition, or circumstance, it may approve other variations to these regulations.
1-111.2 Procedures
Each and every variance or modification of these subdivision regulations sought by a subdivider shall be specifically applied for in the numerical order of the subdivision regulations, in writing by the subdivider. A separate form provided by the Enforcing Officer shall be utilized to list any and all variance(s) being requested. This form shall accompany the preliminary plat. Any condition shown on the plat, which would require a variance or modification, shall constitute grounds for disapproval of the plat unless such special application for modification or variance is made. In approving any variation from these regulations the planning commission shall state fully in the minutes the grounds for the variation and all of the facts upon which the decision is made. The minutes of the meeting where the action approving the variance(s) is taken shall reflect the specific nature and content of such variance(s).

1-111.3 Conditions
In approving variations, the planning commission may impose such conditions as in its judgment will secure substantially the objectives, standards, and requirements of the regulations.

1-112 Enforcement, Violation, and Penalties

1-112.1 General

1-112.101 Authority
The enforcement of these regulations and the penalties for violations are provided pursuant to Title 13, Tennessee Code.

1-112.102 Enforcing Officer
It shall be the duty of the Enforcing Officer to enforce these regulations and to bring to the attention of legal council any violations or lack of compliance herewith.

1-112.103 Recording of Plats
Pursuant to Sections 13-3-402 and 13-4-302, Tennessee Code, no plat of subdivision within the jurisdictional area shall be received or recorded by the county register until the plat has received final approval of the planning commission in accordance with these regulations, and such approval has been endorsed in writing on the plat by the planning commission secretary in the manner prescribed by Section 2-105, of these regulations.

1-112.104 Use of Unapproved Plats
Pursuant to Sections 13-3-410 and 13-4-306 Tennessee Code, no owner or agent of the owner of any land shall convey such land contrary to the provisions stated herein.
1-112.105 Public Ways and Utilities
Pursuant to Sections 13-3-406 and 13-4-307, Tennessee Code, the governing body shall not nor shall any public authority accept, lay out, open, improve, grade, pave, or light any public way, lay or authorize the laying of water mains or sewers, or construct or authorize the construction of other facilities or utilities in any public way located within the jurisdictional area unless such way shall have been accepted, opened, or otherwise received the legal status of a public way prior to the attachment of the planning commission's jurisdiction, or unless such way corresponds in its location and lines to a way shown on a subdivision plat approved by the planning commission or on a public way plat made by the planning commission.

1-112.106 Building Permits
No building permit shall be issued for construction of any building or structure located on a lot or plat subdivided or sold in violation of any provision of these regulations. Any individual requesting a building permit for a lot located within an established subdivision shall provide evidence that the plat of subdivision wherein such lot is located has been approved and appropriately recorded.

1-112.107 Access to Lots by Public Way or Private Easement
Pursuant to Sections 13-3-411 and 13-4-308, Tennessee Code, no building permit shall be issued and no building or structure shall be erected on any lot within the jurisdictional area, unless the public way giving access to the lot whereon the building or structure is proposed to be placed shall have been accepted or opened or shall have otherwise received the legal status of a public way prior to that time or unless such way corresponds in its location and lines with a way shown on a subdivision plat approved by the planning commission, or on a street plat made and adopted by the commission, or unless such lot fronts upon a permanent easement that conforms to all rules, regulations and specifications set forth, herein.

In any instance where a permanent easement is used to provide access to a lot or tract of land having been or being separated by deed or plat from other property, such easement shall be at least fifty (50) feet in width. Where a permanent easement is proposed to provide access to more than one (1) lot or tract of land, an access way shall be constructed within the easement which will meet or exceed the standards for design and construction of public ways set forth in Section 4-103, of these regulations, and the planning commission shall act to insure that the responsibility for future maintenance of any such access way lying within a permanent easement remains solely with the benefited parties and that in no event shall the maintenance of such access way become a public responsibility.

1-112.2 Penalties for Violations
1-112.201 Recording of Unapproved Plats
No county register shall receive, file, or record a plat of subdivision within the planning region without approval of the planning commission as required in Sections 13-3-402 and 13-4-302, Tennessee Code, and any county register so doing shall be deemed guilty of a misdemeanor, punishable as other misdemeanors as provided by law. Any county register, receiving, filing or recording a plat of a subdivision in violation of Subsection 1-112.103, of these regulations, shall be deemed guilty of a violation of the above cited provision of the Tennessee Code.

1-112.202 Use of Unapproved Plats
Sections 13-3-410 and 13-4-306, Tennessee Code, provide that whoever being the owner or agent of the owner of any land transfers, or sells or agrees to sell or negotiates to sell such land by reference to, exhibition of or by other use of a plat of subdivision of such land without having submitted a plat of such subdivision to the planning commission and obtained its approval as required before such plat be recorded in the office of the appropriate county register, shall be deemed guilty of a misdemeanor punishable as other misdemeanors as provided by law; and the description by metes and bounds in the instrument of transfer or other document used in the process of selling or transferring shall not exempt the transaction from such penalties. The city through its city attorney may enjoin such transfer or sale or agreement by action of injunction.

1-112.203 Illegal Buildings
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 official or other official designated by the city may bring action or enjoin such erection or cause it to be vacated or removed as provided in Sections 13-3-411 and 13-4-308, Tennessee Code.

1-112.3 Civil Enforcement

1-112.301 General
Appropriate actions and proceedings may be taken in equity to prevent any violation of these regulations, to prevent unlawful construction, to recover damages; to restrain, correct, or abate a violation, or to prevent illegal occupancy of a building, structure, or premise; these remedies shall be in addition to the penalties described in Subsection 1-112.2, of these regulations.

1-112.302 Specific Statutory Remedies
a. Use of Unapproved Plats -- The city, through its attorney or other official designated by the city, may enjoin by action for injunction any transfer of, sale of, or agreement to sell any land in violation of Subsection 1-112.104, of these regulations.
b. Erection of Unlawful Buildings - Where any building or structure is erected or being erected on any lot in violation of the road or easement frontage requirements of Subsection 1-112.107, (Access to Lots by Public Way or Private Easement), of these regulations, the building official or the city attorney or other official designated by the city council may bring action to enjoin such erection or cause the building or structure to be vacated or removed.

1-113 Repeal of Previous Regulations
Upon the adoption and effective date of these regulations, the Subdivision Regulations, of Portland, Tennessee, adopted September 20, 1982, as amended, are, hereby, repealed.

1-114 Fees for Plat Review
Any individual who is seeking to subdivide property within the jurisdictional area where these regulations are applicable shall pay such filing and review fees as are required by the city. These fees shall be paid prior to the item being placed on an agenda for consideration by the planning commission.
ARTICLE II: PROCEDURES FOR PLAT APPROVAL

2-101 General Procedure

2-101.1 Plat Approval Requirements
Before any contract is executed for sale of any parcel of land located within a site that is proposed to be subdivided and before any permit for erection of any structure in a proposed subdivision shall be granted, the owner or his authorized agent shall apply for and secure the planning commission’s approval of the proposed subdivision in accordance with the procedures of this article.

2-101.2 Classification of Subdivisions
The planning commission shall classify each subdivision proposal as either major or minor as defined herein. (See Article VI, for definitions)

2-101.201 Review Procedure
The subdivider shall follow the procedure described below in order to secure plat approval.

a. Minor Subdivision
   (i) Preapplication conference with the Enforcing Officer including submittal of a scale drawing or survey of the proposed subdivision for preliminary discussion and review.
   (ii) Submittal of a final plat, prepared, in accordance with the specifications in Section 5-104, herein, for approval by the planning commission.
   (iii) When a subdivision plat is presented that involves a minor lot line adjustment to a single lot or divides a single tract into no more than two lots and does not involve any street 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 the Enforcing Officer that the subdivision 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 variance from these regulations or of if such plat is not in total compliance with all ordinances or policies of the city.
   (iv) Any person authorized to endorse approval on a final plat, as provided in Subpart (iii), above, may refuse to endorse approval of the plat and request consideration of the plat by the planning commission at the next regularly scheduled meeting of the body.
b. ** Major Subdivision  
   (i) Preapplication conference on the subdivision with the Enforcing Officer.
   
   (ii) Submittal of a conceptual plan prepared in accordance with Section 5-101, herein, for planning commission approval.
   
   (iii) Submittal of the preliminary plat, prepared in accordance with Section 5-102, herein, for planning commission approval.
   
   (iv) Submittal of construction plans prepared in accordance with Section 5-103, herein, for approval.
   
   (v) Submittal of the final subdivision plat prepared in accordance with Section 5-104, herein, for planning commission approval.

**2-101.3 Official Submission Date**

For the purpose of these regulations, for both major and minor subdivisions, the date of the regular meeting of the planning commission where the public hearing on the final subdivision plat, including any adjourned date thereof, is closed, shall constitute the official submittal date of the plat when the statutory period required in Section 13-4-304, Tennessee Code, for formal approval or disapproval of the plat shall commence.

**2-101.4 Policy on Flood Prone Areas**

In determining the appropriateness of land subdivision at any site containing a flood prone area, the planning commission, in reviewing any plat, shall consider the policy and purpose set forth in Section 1-104, of these regulations, and, additionally:

1. the danger to life and property due to increased flood heights or velocities, either potential or actual, caused by subdivision fill, roads, and intended uses;

2. the danger that intended uses or improvements may be swept onto other lands or downstream to the injury of others;

3. the adequacy of the proposed water supply, sanitation, and drainage systems, and the ability of these systems to function under flood conditions;

4. the susceptibility of the proposed facility and its contents to flood damage and the effect of such damage upon the individual owner;

5. the importance of the services provided by the proposed facility to the community at large;

6. the requirements of the subdivision for a waterfront location;
7. the availability of alternative locations not subject to flooding for the proposed subdivision and land uses;

8. the compatibility of the proposed uses with existing development or development anticipated in the foreseeable future;

9. the relationship of the proposed subdivision to the land development plan and the floodplain management program for the area;

10. the safety of access to the property for emergency vehicles in times of flood;

11. the expected heights, duration, velocity, rate of rise, and sediment transport of the floodwaters expected at the site;

12. the costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, public ways, and bridges; and

13. the effect of the proposed subdivision upon the governing body’s participation in the National Flood Insurance Program, if such governing body is, or elects to be, in the program.

No subdivision or part thereof shall be approved by the planning commission if proposed levees, fills, structures, or other features within the subdivision will individually or collectively, increase flood flows, heights, duration, or damages. The regulatory limits (the one hundred-year flood level) shall be determined from the latest approved flood study for the jurisdictional area, and any subsequent revisions thereto. If deemed necessary by the planning commission, specific engineering studies are to be formulated by the developer in those areas where flood data are not currently available.

In any instance where the planning commission determines that a proposed subdivision may affect the flood height, velocity, or duration in any flood prone area outside its jurisdiction, the commission shall take all actions necessary and proper to ensure the coordinated review of the development with the appropriate governmental agencies of the affected area.

In approving plans for subdivision of land containing flood prone areas, the planning commission shall ensure that development will proceed in such a way that property lying within any floodway, as defined by these regulations, will be maintained in a manner as prescribed by the zoning regulations and that development within any floodway fringe area of the floodplain (within the one hundred-year flood level) will be protected adequately against potential flood hazards by the methods prescribed in Article IV, of these regulations.
The planning commission shall disapprove the subdivision of any land containing a flood prone area when the commission determines that subdivision plans are not consistent with the policy stated in this section or that proper safeguards and improvements to these areas have not been proposed.

2-101.5 Special Provisions Governing Unit Ownership (Condominium) Subdivisions

a. Intent -- This section is intended to augment the general legislation of Sections 66-27-101 through 66-27-123, Tennessee Code, entitled "Horizontal Property Act," by providing supplemental rules and regulations for the implementation of the act, as specifically authorized in Section 66-27-121, Tennessee Code.

b. Applicability -- Whenever a developer, the sole owner, or the co-owners of a building or buildings expressly declare through submission of a master deed, lease, or plat their desire to submit their property to a regime, as established and provided by Sections 66-27-101 through 66-27-123, Tennessee Code, wherein there is established a horizontal property regime, each such condominium or horizontal property regime created under the authority of these provisions for the purpose of sale or transfer of real property is subject to the provisions of these regulations.

2-101.502 Submission of Plat Required
Prior to sale or transfer of any portion of the land or buildings incorporated in the property regime, the developer, sole owner, or co-owners of such property shall submit to the planning commission a subdivision plat of such property in the manner prescribed by this article. Such plat, if approved, shall be filed with the county register in the manner prescribed by this article.

2-101.503 Determination of Subdivision Type
Condominium subdivisions shall be classified by the planning commission during the plat review process as either a horizontal condominium or a vertical condominium as defined in Article VI, of these regulations.

2-101.504 Procedure
An applicant seeking approval of a condominium subdivision shall proceed through the normal procedure for subdivision approval, as set forth in this article.

2-101.505 Contents of Plans and Documents
The plats, plans, and documents submitted by an applicant seeking approval of condominium subdivision shall conform to the specifications set forth in Article V, of these regulations.
2-102 Conceptual Plan (Major Subdivisions Only)

2-102.1 Purpose of Conceptual Plan
After the pre-application conference, a conceptual plan shall be submitted for all “major subdivisions”, (as defined by these regulations). As used in these regulations, the term “Conceptual Plan” refers to a group of preliminarily engineered conceptual documents drawn to illustrate initial thoughts about a conceptual layout for greenery lands, house sites, and street alignments. A major element of this plan is documentation and evaluation of environmental conditions found upon a site. This is the stage where drawings are conceptually illustrated, before significant engineering costs are incurred in the detailed design of any proposed subdivision layout. The objective of this process is to manage each development site in a fashion that will accommodate reasonable use consistent with applicable zoning law while simultaneously protecting, preserving and enhancing the natural environment.

The Conceptual Plan shall be prepared by individuals who are licensed to perform the necessary design services. Such plans shall be submitted by the applicant to the Enforcing Officer who will then submit it to the planning commission for review for the purpose of securing early agreement on the overall pattern of streets, houselots, conservation areas, and potential trail linkages (where applicable), prior to any significant expenditures on engineering costs in the design of streets, stormwater management, or the accurate delineation of internal lot boundaries.

2-102.2 Conceptual Plan Requirements (Major Subdivisions)
The conceptual plan shall include the information set forth in Section 5-101.

2-102.3 Approval of Conceptual Plan
When a conceptual plan is submitted for planning commission approval, the number of copies required, and timing of the submission shall be as for a preliminary plat. Approval of the conceptual plan shall constitute authorization to prepare and present a preliminary plat and detailed construction drawings, plans and specifications for the proposed development.

2-102.4 Expiration of Approval
The approval of the conceptual plan shall expire within one (1) year unless a preliminary plat is filed for all or a portion of the land included within the approved conceptual plan. In the event the conceptual plan expires such plan shall become null and void and be of no further effect. The approval of a Conceptual Plan shall convey no vested development rights, and does not constitute a “Development Plan” as defined in State Statute, the Planning Commission may conditionally approve Conceptual Plan subject to the developer providing additional information and detail related to roads, drainage, and other key infrastructure requirements for the entire development under consideration. Such information for the entire development under consideration shall be submitted with the Preliminary Plat application for the development.
2-103 Preliminary Plat (Major Subdivisions Only)

2-103.1 Purpose of Preliminary Plat
The preliminary plat is a detailed engineering document. Such plat will reflect results of design decisions that have been made in the process of adapting the general concepts contained within the conceptual plan to the engineering realities of the site. Prior to final approval of a preliminary plat and construction drawings, no clearing of trees (with the exception of those required to facilitate surveying activities) or site grading in any form shall be undertaken.

2-103.2 Application Procedure and Requirements
The applicant shall file with the planning commission a preliminary plat. Failure of the applicant to satisfy the requirements of this section with full and correct information shall be cause for disapproval of a preliminary plat. The preliminary plat shall be prepared in accordance with Section 5-102, and:
   1. Be presented at the office of the Enforcing Officer on or before the scheduled deadline as established by the city for consideration at a regular (officially opened) meeting of the planning commission.
   2. Include the entire subdivision, or, when phasing is proposed, section thereof, for which preliminary approval is sought and all land immediately adjacent, extending two hundred (200) feet therefrom, or of that directly opposite thereto, extending two hundred (200) feet from the public way frontage of such opposite land. The lot pattern of surrounding development shall be shown within that area located within two hundred (200) feet of the proposed development; and
   3. be accompanied by a minimum eighteen (18) copies of the preliminary plat as described herein.

2-103.3 Plat Preparation and Content
A preliminary plat shall be prepared by a registered surveyor. As a minimum, such plat shall contain the information contained in Section 5-102, of these regulations.

2-103.4 Preliminary Design Certification
A "Preliminary Design Certification" shall accompany any preliminary plat submitted under authority of these regulations. Such certification shall indicate that such plat either fully complies with all provisions of the city's zoning ordinance and subdivision regulations or that the plat complies with such provisions with specifically noted exceptions. Any variance(s) requested from these regulations shall conform to the provisions of Subsection 1-111.2, Variance Procedures. This certification requirement is meant to provide the city with assurance that the proposed plan can be accomplished within the current ordinances and regulations of the city.
2-103.5 Administrative Review
An administrative review meeting shall be conducted on the preliminary plat and any exhibits submitted in conformance with these regulations. This review shall include the Enforcing Officer and any other appropriate governmental representative(s). The findings of the review committee shall be presented to the planning commission along with the preliminary plat.

2-103.6 Notice of Hearing
The planning commission shall hold a hearing as required by Chapter 4, of Title 13, Tennessee Code, on each preliminary plat brought before it.

2-103.7 Tentative Approval
After the planning commission has reviewed the preliminary plat, exhibits, and the results of administrative review, the applicant shall be advised of any required changes. The planning commission shall tentatively approve (subject to approval of construction plans), conditionally approve, or disapprove the preliminary plat.

No action of the planning commission tentatively approving a preliminary plat shall become final until construction plans meeting the specifications appearing in Section 5-103, of these regulations have been approved.

2-103.8 Final Approval of Preliminary Plat
Following tentative approval of the preliminary plat, construction plans shall be presented for review and approval of the City Engineer. Upon approval of the construction plans, a development agreement shall be drafted and submitted to the applicant for acceptance. When the signed development agreement is received at the office of the City Engineer the preliminary plat shall be placed on the agenda of the planning commission for final approval.

2-103.9 Certificate of Preliminary Approval
Upon final approval of the preliminary plat the planning commission may issue a certificate of preliminary approval. The applicant may then proceed to apply for final subdivision plat approval in the manner prescribed by Section 2-105, of these regulations.

When the secretary of the planning commission has signed the certificate of preliminary approval, one (1) copy of the preliminary plat, construction plans and development agreement with the date of approval noted thereon shall be returned to the developer. If a preliminary plat is disapproved the planning commission shall state specific reasons for disapproval which shall be entered into the minutes of the meeting wherein such action was taken.

2-103.10 Effective Period of Preliminary Approval
The approval of a preliminary plat shall be effective for a period of three (3) years. An approved preliminary plat, with phases, shall remain valid as long as a final plat is approved.
within the initial three (3) year approval, and another phase of the preliminary plat receives final plat approval at least every two (2) years thereafter.

2-103.11 Application of Changes Within Land Use Regulations to Approved Preliminary Plats
Every plat shall conform to all existing zoning provisions and subdivision regulations applicable at the time of proposed final approval, except that any final plat contained within the bounds of a preliminary plat the approval of which remains in effect shall be exempt from any subsequent amendments to such zoning ordinance or these regulations that may render the plat nonconforming as to bulk, use, or development standards. No final plat, shall be approved unless the preliminary plat of the development or affected portion thereof is obtained within the effective period of preliminary approval set forth in Subsection 2-103.10, Effective Period of Preliminary Approval.

2-103.12 Changes to an Approved Preliminary Plat
As a result of unforeseen conditions associated with a particular site, changes may be required in approved preliminary plats. No change shall be implemented and no construction associated therewith shall be initiated until a revised preliminary plat and construction plans have been submitted to the office of the Enforcing Officer and approved so as to reflect the proposed change. The Enforcing Officer may approve changes that involve minor revisions in the location of utilities, roadways, etc. Changes involving the following conditions shall only be made upon approval of revised construction plans and a revised preliminary plat:

1. Any increase in the number of building sites;
2. Any addition or removal of a public way;
3. Any “significant change” (as determined by the Enforcing Officer) in the approved drainage design for the subdivision;
4. Any “significant change” (as determined by the Enforcing Officer) in the approved design of utilities; and

2-104 Construction Plans (Major Subdivisions Only)

2-104.1 Application Procedure and Requirements
Construction plans may be prepared and presented, at any point in time concurrent with or following tentative approval of a preliminary plat. In no instance, however, shall the approval of a preliminary plat become final until construction plans are approved. Construction plans shall contain the information required by and be prepared in accordance with Section 5-103, and:

1. be presented at the office of the Enforcing Officer;
2. include the entire subdivision, or, (when phasing has been approved in the conceptual plan), the entire section which shall correspond to the territory incorporated within the preliminary plat; and

3. be accompanied by a minimum of three (3) copies of the construction plans as described, herein.

2-104.2 Construction Plan Preparation and Content
Construction plans shall be prepared and submitted by a Tennessee Licensed Engineer engaged in the practice of civil engineering. As a minimum, such plans shall include the information contained in Section 5-103, of these regulations.

2-104.3 Plan Review and Approval
A plan review meeting shall be conducted for the purpose of assuring a coordinated review of construction plans. This meeting shall include the Enforcing Officer, and any other appropriate governmental representative(s). It shall be the responsibility of this committee to assure that the construction plans are in compliance with the provisions of these regulations, other appropriate city ordinances and sound engineering practice. The committee shall approve or disapprove the construction plans. In any case where revisions may be required for plans to receive unconditional approval such revisions shall be accomplished prior to final approval of the preliminary plat. In the event of plan disapproval the committee shall provide notice, thereof, to the submitter in writing. Such notice shall include specific provisions of these regulations and/or other ordinances with which such plans do not comply.

2-104.4 Development Agreement
A completed “Development Agreement” and accompanying reclamation bond shall have been prepared and executed prior to initiation of any “land development activity” within any development to which these regulations are applicable. Following approval of the construction plans, a draft development agreement shall be prepared by the Plan Review Committee. The draft agreement shall reference the design incorporated within the approved construction plans and shall be sufficient in form to assure that proposed construction methods and materials meet or exceed minimum standards established by the city. The draft development agreement and an estimate of the amount of a reclamation bond or performance bond, (as applicable) shall be sent to the applicant for approval. Upon acceptance of the agreement by the applicant, the proposed development agreement accompanied by the approved construction plans and reclamation or performance bond shall be forwarded to the planning commission for approval. Development activity may begin upon approval of the agreement and establishment of the required bond.

2-104.5 Dispute Resolution
In the event that a dispute should arise concerning interpretation or application of these regulations to the information contained within construction plans, the planning commission shall act to resolve such dispute. The Enforcing Officer shall
present written recommendations and the applicant shall be afforded an opportunity to present supporting data and information with regard to the specific disputed issue. The planning commission shall act to decide the issue and its action shall be final, subject to legal review.

2-104.6 Changes to Approved Construction Plans
As a result of unforeseen conditions associated with a particular site, changes may be required in approved construction plans. No change shall be implemented and no construction associated therewith shall be initiated until approved by the enforcing officer. At his sole discretion, the enforcing officer may require revision of construction plans when the proposed change so warrants.

2-105 Final Subdivision Plat (Minor and Major Subdivision)

2-105.1 Purpose of Final Plat
The purpose of a final subdivision plat is twofold. First, such plat provides the legal instrument whereby transfer of ownership of lots may be accomplished. Secondly, final plats constitute a means whereby the person subdividing property may offer streets and other infrastructure for acceptance and maintenance by the public.

2.105.2 Application Procedure and Requirements
A subdivider shall file with the planning commission a final plat. The plat shall be prepared in accordance with Section 5-104, and:

1. include the entire subdivision, or section thereof, for which final approval is sought; (Note: In any instance where a final plat involves only a portion of the land contained within an approved preliminary plat such sectionalization shall have been approved with the preliminary plat.)

2. be accompanied by a minimum of eighteen (18) copies of the final subdivision plat as described herein.

3. in the case of major subdivisions, correspond with the approved construction drawings and preliminary plat;

4. be presented at the office of the Enforcing Officer on or before the scheduled deadline as established by the city for consideration at a regular (officially opened) meeting of the planning commission.

5. be accompanied by appropriate surety instruments in a form satisfactory to legal counsel and in an amount specified in the development agreement guaranteeing performance of all actions contained in the development agreements. The bond shall include provisions that the principal of the bond shall comply with all the terms of the resolution of final subdivision plat approval, as determined by the planning commission, including, but without limitations, the performance of all required subdivision and off-site improvements, and that all improvements and land included in the
irrevocable offers of dedication shall be dedicated to the governing body free and clear of all liens and encumbrances on the premise(s);

6. be accompanied by written assurance from any utility companies serving the area of the subdivision that necessary utilities will be installed and by proof that the applicant has submitted petitions in writing for the creation or extension of any utility districts as required by the planning commission upon preliminary plat approval; and

7. be accompanied, if the final plat contains jointly held open space, recreational facilities, or any portion of the site that is held in common ownership, by the following documentation for approval by the planning commission:
   a. plans for improvement and maintenance of the open space or facilities located thereon;
   
   b. articles of incorporation and by-laws of the co-owners association or other legal entity (where open space or facilities are to be deeded to a co-owners association or similar organization acting on behalf of the joint owners of said property) charged with improving or maintaining the open space or facilities, and declaration of covenants and restrictions pertaining to each and every property within the subdivision; and
   
   c. declaration of covenants and restrictions pertaining to open space and facilities which assure the continued use of said facilities for the purpose intended, where open space or facilities are to be retained by the developer.

2-105.3 Endorsement of Notations
The notations and certifications required by Subsection 5-104.3 (Plat Certificates), of these regulations, to appear upon the final plat shall be endorsed by appropriate officials and other persons prior to application for final subdivision plat approval, except that the certificate of planning commission approval shall be signed at the time specified in Section 2-106, of these regulations.

2-105.4 Hearing and Decision on Final Plat
The planning commission shall hold a hearing as required by Section 13-4-304, Tennessee Code, on each final plat brought before it. The planning commission shall, within sixty (60) days, after submission of the plat, approve, modify, or disapprove the final subdivision plat. Where the action is “approval with modifications” or disapproval the commission shall set forth in detail any conditions to which such approval is subject, or reasons for disapproval.

Failure of the planning commission to act upon a plat within the prescribed time shall be deemed approval of the plat, and in such event, a certificate of approval,
entitling the subdivider to proceed shall be issued, upon demand, by the secretary of the planning commission. The applicant, however, may agree to an extension of the time for planning commission review.

One (1) copy of the final subdivision plat shall be returned to the subdivider with the date of approval, conditional approval, or disapproval noted thereon.

2-105.5 Effective Period of Final Plat Approval
The final plat shall be recorded within two (2) years of approval by the Planning Commission or it becomes void. Where the planning commission has required the installation of improvements prior to the signing of the final plat, the planning commission shall not modify unreasonably the conditions set forth in the resolution of final approval.

2-106 Signing and Recording of Subdivision Plat

2-106.1 Signing of Plat
1. When a performance bond is required, the secretary of the planning commission may endorse approval on the final plat after the planning commission has approved the development agreement and accompanying bond.

2. When installation of improvements is required, the secretary of the planning commission may endorse approval on the final plat after all conditions of the development agreement have been satisfied and all improvements satisfactorily completed. There shall be written evidence that the required public facilities have been installed in a manner satisfactory to the accepting body as shown on certifications by the appropriate governmental representative(s) and that necessary land dedications and improvements have been accomplished.

3. When the conditions of this section are satisfied, the secretary may sign the permanent reproducible original of the subdivision plat.

2-106.2 Recording of Plat
The developer and/or his/her agent shall record the plat upon the endorsement of the Secretary of the Planning Commission. Upon recording the plat the developer and/or his/her agent shall provide the Secretary of the Planning Commission with a digital copy of the recorded plat. Any individual requesting a building permit for a lot located within an established subdivision shall provide evidence that the plat of subdivision wherein such lot is located has been approved and appropriately recorded.

2-106.3 Sectionalizing Major Subdivision Plats
When sectionalization is approved within a preliminary plat, a final plat may be approved in two (2) or more sections and the planning commission may impose
such conditions upon the filing of each section as it may deem necessary to assure the orderly development of the subdivision.

The planning commission shall require that appropriate development agreements and surety instruments guaranteeing the performance of such agreements, be in such amount as is commensurate with the section or sections of the plat to be filed and may defer the remaining required principal amount of such surety until the remaining sections of the plat are offered for filing. Where certain improvements are in the opinion of the planning commission necessary to facilitate traffic movement, water distribution, sewer collection, stormwater drainage, detention and conveyance, street lighting, electric power supply and any other infrastructure within future sections of a development the commission may require that such systems be constructed as part of any section of a subdivision.
ARTICLE III: ASSURANCE FOR COMPLETION AND MAINTENANCE OF IMPROVEMENTS

3-101 Improvements and Performance Surety

3-101.1 Completion of Improvements
Before the final subdivision plat is signed by the planning commission officer specified in Subsection 2-105.1, Signing of Plat, of these regulations, all applicants shall complete, in accordance with the planning commission's decision and to the satisfaction of the appropriate governmental representative, all public way, sanitary sewer, water, storm water and other improvements, including lot improvements on the individual lots of the subdivision, as required in these regulations and approved by the planning commission, and shall offer for dedication such improvements to the governing body free and clear of all liens and encumbrances on the property and public improvements thus dedicated.

3-101.2 Performance Surety
The planning commission at its discretion may waive the requirement that the applicant complete and dedicate all public improvements prior to signing of the final subdivision plat by providing that, as an alternative, the applicant shall post either a surety company performance bond or provide a deposit of money or negotiable securities, including letters of credit, guaranteeing the performance of same. No building permit will be issued for any lot unless the street providing access is complete or the applicant shall have executed development agreements and posted appropriate surety instruments guaranteeing same. The amount and form of such surety instruments shall in all regards be sufficient to guarantee to the governing body, or other agency ultimately responsible for acceptance of the facilities, satisfactory construction, installation, and dedication, free and clear of any encumbrances, of the incomplete portion of required improvements.

Such surety instruments shall comply with all statutory requirements and shall be satisfactory to legal counsel as to form, sufficiency, and manner of execution, as set forth in these regulations. Security shall be good for at least two (2) construction seasons or such other time period the planning commission shall specify in approving the final subdivision plat. The planning commission may, upon proof of difficulty extend the completion date set forth in such instrument for a maximum time period covered by the development agreement. Each such extended time amendment shall be for a period of at least six (6) months.

3-101.3 Reclamation Bonds
In no event shall any “land development activity” (see definition) be initiated within any subdivision unless and until a “development agreement” as required by Subsection 2-103.4, Development Agreement, has been executed and either a “reclamation bond” or “performance surety” (as defined in these regulations) has been established. Where land is being subdivided but no public improvements are
being installed or such improvements are to be installed prior to approval of any final plat a reclamation bond shall be required. Where public improvements are involved and final plat(s) are proposed to be recorded prior to completion of such improvements the performance surety required for such improvements shall include funds for reclamation. In all instances, such reclamation bond shall be sufficient to ensure that funds are available to stabilize a development site so as to prevent damage to public property or nearby private property in the event the developer does not complete the work.

3-101.4 Temporary Improvements
The applicant shall build and pay all costs of temporary improvements required by the planning commission, and shall maintain these improvements to a reasonable satisfaction for the period specified by the planning commission. Prior to construction of any temporary facility or improvement, the applicant shall file with the planning commission a suitable surety instrument for temporary facilities, which shall ensure that the temporary facilities will be properly constructed, maintained, and removed.

3-101.5 Costs of Improvements
The applicant shall make all required improvements at his expense. Any provisions for reimbursement by the governing body or any other agency shall be stipulated clearly in the provisions of any development agreements.

3-101.6 Governmental Units
Governmental units to which these provisions apply may file, in lieu of said development agreement and surety, a certified resolution or ordinance from officers or agencies authorized to act in their behalf agreeing to comply with the provisions of these regulations.

3-102 Surety Standards and Requirements

3-102.1 General
In order to ensure that the work will be completed in accordance with approved plans and specifications, all engineering improvements proposed in conjunction with any subdivision must be covered by adequate surety unless such work is to be totally completed prior to filing of any final plat for any portion of the development site. When the work is to be completed prior to filing of a final plat, the amount of such surety (see Subsection 3-101.3, Reclamation Bonds) shall be sufficient to ensure that the building site may be stabilized in the event of the failure of the applicant to complete the work.

3-102.2 Amount of Surety
The subdivider shall post good and sufficient surety with the planning commission in the amount of one hundred twenty-five (125) percent of the Enforcing Officer’s estimate of cost to assure completion of the work. Good and sufficient surety shall include the types of surety specified in Subsection 3-102.3. Each security shall be
accompanied by a “Development Agreement”, as found in Subsection 2-103.4, Development Agreement, whereby the subdivider agrees to make and install the improvements in accordance with the approved plans and specifications.

3-102.3 Types of Surety
Subject to the standards and requirements of this Article and acceptance by the planning commission, the following types of surety may be accepted for purposes of guaranteeing completion of improvements required by the regulations:

- Irrevocable Standby Letter of Credit
- Cash Escrow or bank assignment of certificates of deposit with a federally insured bank having assets of at least $100 million
- Performance bond

3-102.301 Irrevocable Standby Letters of Credit
An irrevocable standby letter of credit may be utilized as the means of providing surety for improvements required under the various provisions of these Regulations. Any letter of credit shall be drafted so as to represent an obligation of the financial institution to the city and not an obligation to the permittee. All Letters of Credit, and each provision thereof, shall be governed and construed in accordance with the Uniform Customs and Practice for Documentary Credits (1983 Revision), International Chamber of Commerce, Publication 400 and Sections 47-5-101 through 47-5-118, Tennessee Code. All irrevocable standby letters of credit shall provide a location within Sumner County or a county adjoining Sumner County where such letter(s) may be drawn upon.

3-102.302 Escrow Deposits for Improvements
a. Acceptance of Escrow Funds
The term "Cash Escrow" as used in these regulations refers to two types of performance guarantees, cash escrows and bank assignment of funds. In the case of either cash or other near cash (i.e., certificates of deposit) guarantees, all funds shall be maintained in accounts that are beyond the reach of the developer and subject to an escrow agreement.

b. Procedures on Escrow Fund
All escrows shall be held by the city, kept in its bank accounts, and be totally under control of the city. A detailed “Escrow Agreement" shall be prepared and appropriately endorsed by all parties to such agreement at the time of creation of any escrow account. The developer's tax identification shall be used for the escrow and the developer shall be responsible for paying tax on any interest credited to the escrow account.

c. Escrow Funds Held Following Issuance of Certificate of Occupancy
When escrow funds are accepted for required improvements at the time of issuance of a certificate of occupancy such improvements shall be installed by the developer within a period of nine (9) months from the date of deposit and issuance of the certificate of occupancy. In the event that the improvements have not been installed properly at the end of the time period, the Enforcing Officer shall provide written notice of two (2) weeks to the developer requiring him to install the improvements, and in the event such improvements are not installed properly, in the judgment of the Enforcing Officer, he may request the governing body to proceed to install or to contract for the installation of the necessary improvements in a sum not to exceed the amount of the escrow deposit.

At the time of issuance of the certificate of occupancy for which escrow moneys are being deposited the applicant shall obtain and file with the Enforcing Officer, prior to obtaining the certificate of occupancy, a notarized statement from the purchaser(s) of the premise authorizing the Enforcing Officer to install the improvements at the end of the nine (9) month period in the event the improvements have not been installed properly by the developer.

### 3-102.303 Performance Bonds

A performance bond may be used as the means of providing surety for improvements required under the various provisions of these Regulations. In no instance shall any performance bond be accepted as a guarantee unless a “Development Agreement” required by the provisions of Subsection 2-103.4, Development Agreement, accompanies such bond. Such agreement shall detail the specific nature and estimated cost of all improvements. All performance bonds shall provide a location within Sumner County or a county adjoining Sumner County where such bond(s) may be drawn upon. All performance bonds shall be drafted so that the only requirement for the city to draw upon such bond is to notify the financial institution (grantor) that:

“We have incurred liability by reason of the failure of the applicant/developer/owner, within ninety (90) days of the expiration of this letter, to complete the construction of their project [insert name of subdivision and plans] in accordance with the definitive subdivision plans and development agreement and the rules and regulations governing the subdivision of land within the Portland Planning Region.” The amount drawn, which may be more than required to complete the project, will be held in a segregated bank account until the work can be bid competitively and the bid awarded and paid for or until the contract for the work is otherwise let and the work paid for. Any excess over the cost of completing the work will be returned to the grantor.”
3-103 Failure to Complete Improvements
In those cases where development agreements have been established, surety instruments have been posted and required improvements have not been installed within the terms of such agreements, the planning commission thereupon may declare the surety to be in default and require that all the improvements be installed regardless of the extent of the building development at the time the surety is declared to be in default. If the improvements are not completed within the time period specified, (including any extension thereof approved as provided in Subsection 3-101.2, above), no additional building permits shall be issued for any lot or portion of such property until such facilities are either completed to the satisfaction of the governing body or new surety instruments guaranteeing the construction thereof are executed. The applicant and the financial institution issuing the surety shall be liable severally and jointly for completing said improvements according to specifications.

3-104 Maintenance of Improvements
The applicant shall be required to maintain all improvements until acceptance by the governing body. Additionally, the applicant shall be required to file a maintenance/warranty bond with the governing body prior to acceptance. This bond is established for purposes of assuring the quality of the materials and construction of such facilities. Such bond shall be in an amount considered adequate by the Enforcing Officer to assure satisfactory condition of the required improvements. In no event will this bond be set below an amount equal to fifteen (15) percent of the estimated original cost of such improvements.

3-105 Inspection of Improvements
The city may provide for inspection of required improvements during construction. If the appropriate governmental representative finds upon inspection that any of the required improvements have not been constructed in accordance with the accepting body's construction standards and specifications, the applicant shall be responsible for completing such improvements to the required standards. The fact that the city inspects the facilities in no way relieves the developer from designing or installing such facilities in accordance with the provisions of these regulations and the established development agreement.

3-106 Release or Reduction of Reclamation or Performance Bond

3-106.1 Certificate of Satisfactory Completion
Prior to release of any performance surety the engineer in charge of construction of such improvements shall be required to certify that such improvements have been installed in accordance with provisions of these regulations, the completed development agreement and the approved plans and specifications. Upon receipt of such certification and recommendations from the public works committee and planning commission, the governing body may accept the dedicated improvements in accordance with the procedures set forth in Section 3-107, Acceptance of Dedication Offers, of these regulations.
3-106.2 Reduction of Performance Bonds
The surety instruments guaranteeing installation of improvements may be reduced based upon actual completion of the work. At all points in time the dollar amount of the surety being held shall as a minimum equal the estimated value of the work remaining plus fifteen (15) percent of the dollar value of such work. In no event shall the surety be reduced below fifteen (15) percent of the principal amount prior to final acceptance of all items covered under such instrument.

3-107 Acceptance of Dedication Offers
Acceptance of offers of dedication of improvements for public maintenance shall be by action of the governing body. Such action shall be in the form of a resolution recommended by the planning commission to the accepting body. Approval by the planning commission of a subdivision plat shall not be deemed to constitute or imply an acceptance by the local government, or other agency ultimately responsible for acceptance of the facilities, of any public way, easement, or other ground shown on the plat. The planning commission may require the plat to be endorsed with appropriate notes to this effect.

3-108 Deferral or Waiver of Required Improvements
The planning commission may defer or waive at the time of final plat approval, subject to appropriate conditions, the provision of any or all such improvements as, in its judgment, are not requisite in the interest of the public health, safety, and general welfare, or which are inappropriate, because of inadequacy or lack of connecting facilities.

Whenever it is deemed necessary by the planning commission to defer construction of any improvement required herein because of incompatible grades, future planning, inadequate or lack of connecting facilities, or other reasons, the developer shall either pay his share of the costs of the future improvements to the governing body prior to signing of the final subdivision plat or post a bond ensuring completion of said improvements.

3-109 Issuance of Building Permits and Certificates of Occupancy
Where development agreements and surety instruments have been required for a subdivision, or any section of a subdivision, and such are determined to be in default, no building permit or certificate of occupancy shall be issued for any building in the subdivision or any affected section thereof prior to completion and dedication of the improvements to the appropriate governmental unit, as required in the planning commission's resolution of final approval of the subdivision plat.

The extent of public way improvements shall be adequate for vehicular access by the prospective occupant and by police and fire equipment prior to the issuance of a building permit.

No building permit shall be issued for the final ten (10) percent of lots in a subdivision, or if ten (10) percent is less than two (2) lots, for the final two (2) lots of a subdivision, until
all public improvements required by the planning commission's resolution of final plat approval have been fully completed, dedicated, and accepted by the governing body.
ARTICLE IV: REQUIREMENTS FOR IMPROVEMENTS, RESERVATIONS, AND DESIGNS

4-101 General Requirements

4-101.1 Conformance to Applicable Rules and Regulations

In addition to the requirements established herein, all subdivision plats shall comply with all applicable laws, ordinances, resolutions, rules, or regulations, including, but not limited to:

1. all applicable provisions of Tennessee Law, regulations, or policy;

2. any zoning ordinance, any building and housing codes, and all other applicable laws or policies of the governing body;

3. the adopted general plan and major road or street (public way) plan;

4. the rules of the County Health Department and the Tennessee Department of Environment and Conservation;

5. the rules, as applicable, of the Federal Highway Administration or Tennessee Department of Transportation, if the subdivision or any lot contained therein abuts a nonlocal highway; and

6. the standards and regulations adopted by all other boards, commissions, and agencies of the governing body, where applicable.

Plat approval may be withheld if a subdivision is not in conformity with the above rules or with provisions set forth in Section 1-104, Policy and Purpose, of these regulations.

4-101.2 Self-Imposed Restrictions

If the owner places restrictions on any of the land contained in the subdivision greater than those required by the zoning ordinance or these regulations, such restrictions or reference thereto shall be recorded with the county register on a separate form, along with the final subdivision plat.

4-101.3 Monuments

Permanent monuments of nondegradable material shall be placed in all subdivisions. Placement of the monuments shall be to the accuracy of a Category I Survey, as defined by the Tennessee Board of Examiners for Land Surveyors in the current Standards of Practice and a statement to that effect shall be signed and sealed by a professional land surveyor licensed to practice land surveying in the state of Tennessee. All monuments will conform to the appropriate type of monuments listed below.
1. **Control Monuments** – A minimum of two (2) control monuments shall be placed in all major subdivisions (as defined by these regulations). At the discretion of the enforcing office, control monuments will generally not be required within minor subdivisions (as defined by these regulations) when the subdivision occurs along existing streets, however, the planning commission retains the right to require control monuments within minor subdivisions where flooding or other extraordinary conditions are found to exist. In areas where minor subdivision plats are accepted to correct errors and omissions, relocate or define areas for subsurface disposal systems, etc., the existing monumentation shown on the plat shall be sufficient.

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

The recorded plat shall contain horizontal and vertical data for each control monument. The horizontal data shall be tied to a coordinate system, preferably the Tennessee Coordinate System of 1983, as defined in the Tennessee Code, Section 66-6-101, however, local coordinates will, at the discretion of the Enforcing Officer, be acceptable when it is not practical to use the Tennessee Coordinate System. In either case, each control monument will be tied, by bearings expressed to the nearest second of arc and distances expressed to the nearest hundredth of a foot, to a minimum of two (2) property corners within the subdivision and to the nearest established street right-of-way corner. The vertical datum for the subdivision shall be relative to mean-sea-level and the datum used, (i.e., NGVD29, NAVD88) shall be noted and shown on the recorded plat.

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

(a) **Concrete Monument** – Shall be no less than four (4) inches in diameter and no less than eighteen (18) inches in length, unless some impregnable material is encountered. The monument must be steel reinforced to facilitate detection by a magnetic locator. The monument shall have a metal cap with the Land Surveyor’s name and license number, or company name embedded in the cap and bear a permanent mark for the precise survey point.

(b) **Iron Bar Monuments** – Shall be no less than five-eighths (5/8) inch in diameter and no less than twenty-four (24) inches in length, unless some impregnable material is encountered. Each bar shall have a permanent metal cap with a minimum diameter
of two and one-half (2 1/2) inches with the Land Surveyor’s name and license number, or company name embedded in the cap and bear a permanent mark for the precise survey point.

All monuments shall be set flush with the ground. In the case where impregnable material in encountered, the iron bar monument may be shortened to a minimum of twelve (12) inches.

Concrete is then to be poured in a three (3) inch radium around the bar and to the depth of twelve (12) inches. When depth of soil is less than twelve (12) inches, a new location for the control monument must be established.

2. **Lot Corners** – Metal corners shall mark all external property corners, internal lot corners and right-of-way points. These corners shall be no less than one-half (1/2) inch in diameter and eighteen (18) inches in length. All new corners shall have a cap of noncorrosive material and the cap shall bear the surveyor’s registration number or company name.

3. **Witness Corners** – Lot corners that are inaccessible for any reason shall have a witness corner. The witness corner should be set along one of the property lines leaving said lot corner to be monumented and shall be a sufficient distance from the actual lot corner so as there can be no misinterpretation of its location. The witness corner and its tie to the actual lot corner shall be shown and identified on the recorded plat. A witness corner shall be no less than one-half (1/2) inch in diameter, eighteen (18) inches in length and shall have a cap of noncorrosive material and the cap shall bear the surveyor’s registration number or company name.

**4-101.4 Character of the Land**

**4-101.401 Land Unsuitable for Development**

Land which the planning commission finds to be unsuitable for subdivision or development due to flooding, improper drainage, steep slopes, rock formations, adverse earth formations or topography, utility easements, or other features which would be harmful to the safety, health, and general welfare of inhabitants of the land and surrounding areas shall be designated as “conservation lands” and may be utilized as provided in Subsection 4-101.402, Use of Conservation Lands. Land included within this category shall be as specified below:

- wetlands and land that is generally inundated (land under ponds, lakes, creeks, etc.),

- all of the floodway and floodway fringe area within the 100-year floodplain, as shown on official FEMA maps,
• land with slopes exceeding twenty (20) percent, or soils subject to slumping,

• land situated within sink holes and other karst areas,

• land under permanent easement prohibiting future development (including easements for drainage, access, and utilities).

4-101.402 Use of Conservation Lands
The areas indicated in Subsection 4-101.401, Land Unsuitable for Development, shall generally be designated as undivided open space, to facilitate easement monitoring and enforcement, and to promote appropriate management by a single entity according to approved land management standards. However, within subdivisions where the gross density is one (1) dwelling unit per five acres (or lower) the required open space may be included within individual lots.

All undivided open space shall be restricted from further subdivision through a permanent conservation easement, in a form acceptable to the city and duly recorded in the office of the County Register of Deeds. Any lot containing required open space that is sufficiently large as to be capable of further subdivision may be restricted so as to prohibit such action.

4-101.403 Protection Against Flood Damage
Where protection against flood damage is necessary in the opinion of the planning commission, flood-damage protection techniques may include, as deemed appropriate by the planning commission:

a. imposition of any surety and deed restrictions enforceable by the planning commission to regulate the future type and design of uses within flood prone areas; and

b. flood protection measures designed so as not to increase, either individually or collectively, flood flow, height, intensity, duration, or damages, and so as not to infringe upon the regulatory floodplain.

c. installation of flood warning systems.

d. the use of fill, dikes, levees, and other protective measures.

e. the use of floodproofing measures, which may include:
   i. anchorage to resist flotation and lateral movement.
ii. installation of watertight doors, bulkheads, shutters, or other similar methods of closure.

iii. reinforcement of walls to resist water pressures.

iv. use of paints, membranes, or mortars to reduce seepage through walls.

v. addition of mass or weight to structures to resist flotation.

vi. installation of pumps to lower water levels in structures.

vii. construction of water supply and waste treatment systems so as to prevent the entrance of or contamination of flood waters.

viii. installation of pumps or comparable facilities for subsurface drainage systems to relieve external foundation wall and basement flood pressures.

ix. building design and construction to resist rupture or collapse caused by water pressure or floating debris.

x. installation of valves or controls on sanitary and storm drains which permit the drains to be closed to prevent backup of sewage and storm water into buildings or structures.

xi. location and installation of all electrical equipment, circuits, and appliances so that they are protected from inundation by the regulatory flood.

xii. location of storage facilities for chemicals, explosives, buoyant material, flammable liquids, or other toxic materials which would be hazardous to public health, safety, and welfare at or above the regulatory flood protection elevation, or design of such facilities to prevent flotation of storage containers or damage to storage containers which could result in the escape of toxic materials.

The acceptability of any flood protection methods formulated by the subdivider or his agent shall be determined by the planning commission, which shall be guided by the policies set forth in Section 1-104 and Subsection 2-101.4, of these regulations.

4-101.5 Subdivision Name
The proposed name of the subdivision shall not duplicate or too closely approximate phonetically the name of any other subdivision within Sumner County. The planning commission shall have authority to designate the name of the subdivision, which shall be determined at conceptual plan approval.
4-101.6 Authorization to Construct Improvements

Construction may proceed upon issuance in accordance with Subsection 2-103.9, of a “Certificate of Preliminary Approval”. Such certificate shall be issued only when a grading permit has been obtained and surety is in place to assure land reclamation in event the development is not completed.

4-101.7 Maintenance of Improvements

4-101.701 Streets Designated as Construction Routes

Streets designated as construction routes within a subdivision shall be maintained for a time period specified in the Dedication Agreement submitted in accordance with Section 5-105, Form of Dedication Offer.

4-101.702 Other Streets

Streets other than those designated as construction routes shall be maintained as provided herein.

Generally, the final paving course shall not be applied until seventy-five (75) percent of the houses fronting along a street are completed. However, when an undue hardship is created by disallowing the final paving of a street prior to construction of seventy-five (75) percent, but not less than fifty (50) percent, of the houses fronting along a street, the Enforcing Officer may permit final paving to occur and the city may allow the subsequent release of the performance bond provided a maintenance bond is substituted therefor. The city may permit the maintenance/warranty bond to be renewed if additional time is needed to complete further buildout of the subdivision.

The maintenance/warranty bond may be released after a period of one (1) year or when at least seventy-five (75) percent of the houses fronting along a street have been satisfactorily completed, inspected and released by the inspecting departments. The maintenance/warranty bond shall be in an amount and for a term as recommended by the Enforcing Officer and shall be posted in conformance with the procedures presented in Article III, of these regulations. Under no circumstances shall final paving occur until all utility installations, including service lines to individual lots are complete.

4-102 Lot Requirements

4-102.1 Lot Arrangement

4-102.101 General

Each lot shall contain a sufficient “building envelope” (See Definition) such that there will be no foreseeable difficulties, for reasons of topography, slope/foundation stability, flood hazards, or other conditions in locating the structures and driveway access to the structures upon such lot. All lots shall
have dimensions and area sufficient to ensure that the building setbacks and yards are in compliance with any zoning ordinance. No “building envelope” may include any land defined as “unsuitable for development” by the provisions of Subsection 4-101.401 (above).

4-102.102 Evaluation Criteria
In evaluating the layout of lots and open space the following criteria will be considered by the planning commission as indicating design appropriate to the site’s natural, historic, and cultural features, and meeting the purposes of these regulations. Diversity and originality in lot layout shall be encouraged to achieve the best possible relationship between development and conservation areas. Accordingly, the planning commission shall evaluate proposals to determine whether the proposed plan:

a. Protects and preserves all floodplains, wetlands, and steep or unstable slopes from clearing, grading, filling, or construction (except as may be approved by the city for essential infrastructure or active or passive recreation amenities).

b. Preserves and maintains mature woodlands, existing fields, pastures, meadows, and orchards, and creates sufficient buffer areas to minimize conflicts between residential and agricultural uses. For example, locating house lots and driveways within wooded areas is generally recommended, with two exceptions. The first involves significant wildlife habitat or mature woodlands that raise an equal or greater preservation concern, as described in Items “e and h”, below. The second involves predominantly agricultural areas, where remnant tree groups provide the only natural areas for wildlife habitat.

c. If development must be located on open fields or pastures because of greater constraints in all other parts of the site, dwellings should be sited on the least prime agricultural soils, or in locations at the far edge of a field, as seen from existing public roads. Other considerations include whether the development will be visually buffered from existing public roads, such as by a planting screen consisting of a variety of indigenous native trees, shrubs, and wildflowers.

d. Maintains or creates an upland buffer of natural native species vegetation of at least one hundred (100) feet in depth adjacent to wetlands and surface waters, including creeks, streams, springs, lakes and ponds.

e. Designs around existing hedgerows and treelines between fields or meadows, and minimizes impacts on large woodlands, (greater than five (5) acres), especially those containing many mature trees or a

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significant wildlife habitat. When any woodland is developed, great care shall be taken to the fullest extent that is practicable to design all disturbed areas (for buildings, roads, yards, septic disposal fields, etc.), in locations where there are no large trees or obvious wildlife areas.

f. Leaves scenic views and vistas unblocked or uninterrupted, particularly as seen from public thoroughfares. For example, in open agrarian landscapes, a deep “no-build, no-plant” buffer is recommended along the public thoroughfare where those views or vistas are prominent or locally significant. The concept of “foreground meadows,” with homes facing the public thoroughfare across a broad grassy expanse is strongly preferred to mere buffer strips, with or without berms or vegetative screening. In wooded areas where the sense of enclosure is a feature that should be maintained, a deep “no-build, no-cut” buffer should be respected, to preserve existing vegetation.

g. Protects wildlife habitat areas of species listed as endangered, threatened, or of special concern by the U.S. Environmental Protection Agency or the Tennessee Department of Environment and Conservation.

h. Designs around and preserves sites of historic, archaeological, or cultural value, including stone walls, spring houses, barn foundations, cellar holes, earthworks, and burial grounds and their environs, insofar as needed to safeguard the character of the feature.

i. Protects rural roadside character and improves public safety and vehicular carrying capacity by avoiding development fronting directly onto existing public roads. Establishes buffer zones along the scenic corridor of rural roads with historic buildings, stone walls, hedgerows, etc.

j. Landscapes common areas (such as community greens), cul-de-sac islands, and both sides of new streets with native species shade trees and flowering shrubs with high wildlife conservation value. These trees shall generally be located between the sidewalk or footpath and the edge of the street, within a planting strip not less than five (5) feet in width.

k. Provides active recreational areas in suitable locations that offer convenient access by residents and adequate screening from nearby house lots.
l. Includes a pedestrian circulation system designed to assure that pedestrians can walk safely and easily on the site, between properties and activities or special features within the neighborhood open space system. All roadside footpaths should connect with off-road trails, which in turn should link with potential open space on adjoining undeveloped parcels.

m. Provides open space that is reasonably contiguous. To the greatest extent practicable this land shall be designed as a single block with logical, straightforward boundaries. Long thin strips of conservation land shall be avoided, unless the conservation feature is linear or unless such configuration is necessary to connect with other streams or trails. The open space shall generally abut existing or potential open space land on adjacent parcels (such as in other subdivisions, public parks, or properties owned by or leased to private land conservation organizations). Such subdivision open space shall be designed as part of large contiguous and integrated pedestrian, bikeway and greenway systems.

4-102.103 Lots Subject to Flood

No portion of a “building envelope” (see definition) associated with any residential structure may be located in any flood prone area. However, portions of lots that are located beyond a “building envelope” may contain land subject to flooding but not within the designated “floodway”. In any instance where the lot is served by subsurface sewage disposal, the area of the disposal fields shall not lie within any flood prone area. Adding fill material within the one hundred-year flood boundary area will not be permitted unless approved by the planning commission and all necessary permits are on file with the Enforcing Officer. In the event that filling within the flood boundary is approved, the fill shall be protected against erosion by rip-rap, vegetative cover, or other methods deemed acceptable by the planning commission.

On nonresidential building sites within a one hundred-year flood boundary the use of structural floodproofing methods specified in Appendix “C”, Storm Water Design Guidelines, of these regulations, as an alternative to fill material, may be approved by the Enforcing Officer, as provided in Subsections 4-101.403 and 2-101.4, of these regulations.

4-102.104 Lots with Building Sites Located on Steep Slopes

Due to the potential threat to health and safety posed by development located on lands with slopes in excess of fifteen (15) percent, the following regulations shall apply:

a. Site Development Plan Required -- No building permit may be issued for a building or any lot where the proposed “building envelope” lies on natural slopes of twenty (20) percent or greater.
For any lot where the proposed building envelope has slopes of less than twenty (20) percent but fifteen (15) percent or greater a site plan meeting the following requirements must be approved by the planning commission prior to issuance of a building permit. Said site plan shall show:

i. The exact size, shape, and location of the lot,

ii. The proposed location of all buildings, driveways, drainageways, and utilities,

iii. Proposed contours at vertical intervals of no more than five (5) feet,

iv. The extent of natural tree cover and vegetation,

v. The location of any on-site soil absorption sewage disposal systems,

vi. The type and location of erosion control facilities.

vii. A building foundation plan,

viii. The stamp of the Tennessee registered engineer who prepared the plan,

ix. Certification by a Tennessee registered engineer with competence in the field of geotechnics as to the stability of the foundations and structures and compliance with sound construction methods for areas with steep slopes and landslide problems.

b. Site Development Standards -- The following standards shall be used as a guide in determining the suitability of the construction proposed for the particular site in question. The engineer's certification required in Subsection 4-102.103, a, (ix), above, shall address these standards.

i. Natural vegetation shall be preserved to the maximum extent possible,

ii. Natural drainageways and systems shall be maintained, except that surface water may be diverted around a house or slope area to a natural drain using acceptable construction techniques,

iii. Operations that increase loads, reduce slope support, and cause instability of the slope shall be prohibited to the
maximum extent possible. These methods include filling, irrigation systems, accessory buildings, and on-site soil absorption sewage disposal systems,

iv. Where sanitary sewers are not available all on-site sewage disposal systems shall be shown on the site plan and located to avoid slide-prone areas.

v. Erosion control measures shall be employed to prevent soil from leaving the site. Additionally, soil from excavation on the site shall not be deposited as fill on a potential slide area,

vi. No construction that would cut the toe of the slope shall be permitted. This shall apply as well to subdivision roads constructed in compliance with these regulations.

4-102.2 Lot Dimensions
Except as provided in Subsection 4-102.3, Special Building Separation, minimum dimensions of lots shall comply with the standards of the zoning ordinance. All building setbacks and the “building envelope” shall be indicated for each lot shown on the plat.

Where lots are more than double the minimum area required by the zoning ordinance the planning commission may require that such lots be restricted to prevent further resubdivision or be arranged so as to allow further subdivision and the opening of future public ways where they would be necessary to serve such potential lots, all in compliance with the zoning ordinance and these regulations.

Dimensions of corner lots shall be large enough to allow for erection of buildings, observing the minimum front yard setback requirements from both public way rights-of-way.

The minimum lot frontage on a public way shall be fifty (50) feet, except for the radius of a cul-de-sac that shall be thirty-five (35) feet.

Depth and width of properties reserved or laid out for business, commercial, or industrial purposes shall be adequate to provide for the off-street parking and loading facilities required for the type of use and development contemplated as established in the zoning ordinance.

4-102.3 Special Building Separation
In all instances where fire flows are inadequate to meet the requirements of these regulations or no fire hydrant is located within sufficient distance to meet the fire protection standards established herein, the minimum separation of principal buildings shall at all points be fifty (50) feet.
4-102.4 Building Setbacks from High Voltage Electric Lines

In the case of electric transmission lines where easement widths are not definitely established, a minimum building setback line from the center of the transmission line shall be established as follows:

<table>
<thead>
<tr>
<th>Voltage of Line</th>
<th>Building Setback</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2 KV</td>
<td>15 feet</td>
</tr>
<tr>
<td>13 KV</td>
<td>25 feet</td>
</tr>
<tr>
<td>46 KV</td>
<td>37 1/2 feet</td>
</tr>
<tr>
<td>69 KV</td>
<td>50 feet</td>
</tr>
<tr>
<td>161 KV</td>
<td>75 feet</td>
</tr>
</tbody>
</table>

4-102.5 Double Frontage Lots and Access to Lots

4-102.501 Double Frontage Lots

Double frontage and reversed frontage lots shall be avoided, except where necessary to provide separation of residential development from traffic arteries, or to overcome specific disadvantages of topography and orientation.

4-102.502 Access from Arterial or Collector Public Ways

The planning commission may require that lots shall not derive access exclusively from arterial or collector public ways. Where driveway access from such public ways may be necessary for several adjoining lots, the commission may require that the lots be served by a combined access drive in order to limit possible traffic hazards. Driveways shall be designed and arranged so as to avoid requiring vehicles to back onto arterial or collector streets. (A note to this effect shall placed upon the final plat in any instance where joint or shared drives are required.)

4-102.503 Minimum Clearance

The minimum corner clearance between proposed new driveways and arterial or collector routes designated in the Major Thoroughfare Plan shall be fifty (50) feet. In order to ensure adequate storage space for vehicles stopped at a signalized intersection, the planning commission may require that the nearside corner clearance shall be at least one hundred (100) feet.

Corner clearances and design of driveway connections to arterial and collector roads shall be as defined in the Rules and Regulations for Constructing Driveways on State Highway Rights-of-Way, adopted by the Tennessee Department of Highways, April 3, 1967, including all subsequent amendments and/or revisions thereto.

The distance between a frontage property line and the tangent projection of the nearest edge of each nonresidential driveway, measured along the edge of the public way, shall be at least fifteen (15) feet.
4-102.504 Design Standards for Nonresidential Driveways
For access to thoroughfares where the posted speed limit is 35 m.p.h. or less, all nonresidential driveways shall be constructed with a minimum return radius of fifteen (15) feet and a minimum horizontal width of twenty-five (25) feet. All drives serving nonresidential property shall be paved with concrete or an asphaltic surface.

For access to thoroughfares where the posted speed limit is 40 m.p.h., nonresidential driveways shall be constructed with:

a. a minimum return radius of fifteen (15) feet and a minimum driveway width of thirty-five (35) feet; or

b. a minimum return radius of twenty (20) feet and a minimum driveway width of thirty (30) feet; or

c. a minimum return radius of twenty-five (25) feet and a minimum driveway width of twenty-five (25) feet.

For access to thoroughfares where the posted speed limit is 45 m.p.h., nonresidential driveways shall be constructed with a right turn deceleration lane and:

a. a minimum return radius of twenty-five (25) feet and a minimum driveway width of forty (40) feet; or

b. a minimum return radius of thirty (30) feet and a minimum driveway width of thirty (30) feet.

The planning commission will review proposed driveway designs for access to other thoroughfares on a case by case basis.

The centerline of every nonresidential two (2) way driveway shall intersect the centerline of the public way at an angle between seventy-five (75) and ninety (90) degrees.

For other nonresidential driveways, the intersection angle shall be subject to the approval of the planning commission.

4-102.505 Design Standards for Residential Driveways
Where permitted, residential driveways fronting collector and arterial routes designated in the Major Thoroughfare Plan shall be designed so as to avoid requiring vehicles to back onto these highways. Any driveway shall be constructed in a manner such that the drive has a maximum slope of eight (8) percent for the first fifteen (15) feet (measured from the right-of-way). Where the potential exists for gravel or soil to be washed from a driveway
onto the public right-of-way such driveways shall be paved or otherwise stabilized for a distance sufficient to prevent material from migrating onto public property.

4-102.506 Relationship to State Standards
Where the driveway design and location standards listed above are not in conformance with the standards of the Tennessee Department of Transportation, the planning commission may require conformance with whichever standard is more restrictive.

4-102.6 Soil Preservation, Grading, Erosion Control, and Seeding

4-102.601 Soil Preservation and Final Grading
No certificate of occupancy shall be issued until final grading has been completed in accordance with the approved construction plan.

Topsoil shall not be removed from residential lots or used as spoil, but shall be redistributed so as to provide cover on the lots.

Permanent or temporary soil stabilization shall be applied to denuded areas within fifteen (15) days after final grade is reached on any portion of the site. Soil stabilization shall also be applied within fifteen (15) days to denuded areas that may not be at final grade.

4-102.602 Lot Drainage
Lots shall be laid out so as to provide positive drainage away from all buildings. Drainage of individual lots shall be coordinated with the existing or proposed general storm drainage pattern for the area.

Drainage shall be designed so as to avoid concentration of storm water from each lot to adjacent lots, except within drainage easements or street rights-of-way. Surface water drainage patterns for each and every lot shall be shown on the road and drainage plans. Drainage flow and conveyance arrows shall be indicated on the topographic grading and drainage plan.

It shall be the responsibility of the builder of any building or other structure to design and construct a suitable drainage scheme that will convey surface water, without ponding on the lot or under the building, to the drainage system constructed within the subdivision.

The Enforcing Officer reserves the right to require that the developer set minimum elevations on all floors, patios, and building equipment. This prerogative to establish elevation exists in addition to any ordinances or provision of these regulations that refer to floodplain elevation requirements. This provision is intended to give the planning commission summary review powers over any calculated or historical evidence of storm
water presence in overland or channel conditions. All finished floor elevations of buildings shall be at an elevation at least two (2) feet above the 100-year regulatory flood elevation when located within a floodplain area.

The subdivision developer will insure that all artesian ground waters of a permanent or temporary nature encountered within the right-of-way will be intercepted and carried away to primary drainage conduits along swaled ditches or in underground pipes located on property line easements. Regardless of the location of property lines, intercept will be allowed at the point of artesian surfacing.

Any sinkhole or natural channel which serves or has served as a means of moving or storing ground water, including all designated floodways, shall be designated conservation and drainage easements and shall have a dedicated twenty-five (25) foot wide buffer area around the perimeter of such sinkhole or natural drainage channel. No structures, fill or development activity shall be permitted thereon.

### 4-102.603 Erosion and Sediment Control

There shall be a minimization of changes in the rate of natural erosion and sedimentation that result from the development process. An erosion and sediment control plan shall be presented with the construction plans submitted in conformance with Section 5-102, of these regulations. Such plans shall incorporate the following principals:

a. clearing and grading shall be integrated with layout design;

b. clearing shall be minimized and existing vegetation shall be preserved to the maximum feasible degree;

c. grading shall be strictly limited to those areas located within the “building envelope” (see definition) and the driveway of the lot;

d. disturbed areas shall be protected and stabilized as provided in Subsection 4-102.601 (Soil Preservation and Final Grading);

e. structural and vegetative measures to control the velocity and volume of runoff shall be required;

f. sediment basins and traps shall be required as necessary and shall be separate from detention facilities;

**NOTE:** If sediment basins are designed to be located on lots or areas designated as “For Sale” a note shall be added to the final plat restricting the sale of these areas until the sediment area is no longer required.
g. adequate maintenance of all planting and structural measures shall be assured, both within areas proposed for public dedication and upon proposed lots.

h. erosion control plans may be required for individual lots.

All properties adjacent to the site of land disturbance shall be protected from sediment disposition. This may be accomplished by preserving a well-vegetated buffer strip around the lower perimeter of the land disturbance; by installing perimeter controls such as sediment barriers, filters, dikes or sediment basins; or by a combination of such measures.

4-102.7 Debris and Waste
No cut trees, timber, construction debris, junk, rubbish, or other waste materials of any kind shall be buried in any land left on any lot or deposited in any natural drainageway (such as sinkholes, underground streams or channels, or wet weather stream beds or floodways) or public way at the time of the issuance of a certificate of occupancy for the lot, and removal of such waste shall be required prior to issuance of any certificate of occupancy. Neither shall any such waste be left nor deposited in any area of the subdivision at any time. Debris dumpsters shall be required for construction debris disposal. Such dumpsters shall be of adequate size and shall be removed in a timely manner. No debris burning of any type shall be allowed within the subdivision.

4-102.8 Fencing
Each subdivider or developer shall be required to furnish and install all fences wherever the planning commission determines that a hazardous condition exists. Such fences shall be constructed according to standards established by the planning commission, as appropriate, and shall be noted on the final plat as to height and required materials.

4-102.9 Water Bodies and Watercourses
If a tract being subdivided contains a water body, or portion thereof, such area shall generally be located within jointly held open space. The planning commission may approve an alternative plan whereby the ownership of and responsibility for safe maintenance of the water body is so placed that it will not become a governmental responsibility.

No portion of the minimum area of a lot required under any zoning ordinance may be satisfied by land which is under water. Where a watercourse separates a buildable area of a lot from the public way to which such lot has access, provisions shall be made for installation of a culvert of adequate overflow size or other structure approved by the planning commission. No certificate of occupancy shall be issued for a structure on such a lot until the installation is completed and
approved by the planning commission and/or the appropriate governmental representative.

4-102.10 Blocks

1. Blocks shall have sufficient width to provide for two (2) tiers of lots of appropriate depth. Exceptions to this prescribed block width may be permitted in blocks adjacent to major public ways, railroads, or waterways.

2. The lengths, widths, and shapes of blocks shall be determined with due regard to:
   (a) provision of adequate building sites suitable to the special needs of the type of use contemplated;
   
   (b) any zoning requirements as to lot sizes and dimensions;
   
   (c) needs for convenient access, circulation, control, and safety of vehicular and pedestrian traffic; and
   
   (d) limitations and opportunities of topography.

3. Block lengths in residential areas shall not exceed twelve hundred (1,200) feet, except as the planning commission deems necessary to secure efficient use of land or desired features of the public way pattern. Wherever practicable, blocks along arterial or collector routes shall not be less than eight hundred (800) feet in length.

4. Blocks designed for industrial or commercial uses shall be of such length and width as may be deemed suitable by the planning commission.

5. In any long block, the planning commission may require the reservation of an easement through the block to accommodate utilities, drainage, facilities, and/or pedestrian traffic.

4-101 Streets and Pedestrian Ways

4-103.1 Pedestrian Ways

4-103.101 Sidewalks Along New Streets
Sidewalks shall be required along all “urban” streets (see Table 1) constructed in all subdivisions except those proposed for industrial use.

Sidewalks may not be required along streets designated as “rural” when all lots fronting such streets are forty thousand (40,000) square feet or larger in size and have average road frontage of one hundred fifty (150) feet or more.
4-103.102 Sidewalks Along Existing Streets
Sidewalks may be required along an existing public street when sidewalks presently exist upon property that directly adjoins the proposed subdivision, are included within a plan for pedestrian ways or the reconstruction of the existing street is required by an approved traffic impact study.

4-103.103 Location of Sidewalks
Sidewalks shall be required along one side of all streets designated as “residential access lanes or urban residential access streets”. Along streets designated as “urban residential collector or community collector” streets” sidewalks shall be required along both sides. When sidewalks are to be constructed in a subdivision adjoining a developed area with sidewalks, the sidewalks shall be joined and extended along the same side of the street. Transition of sidewalks from one side of a street to another may be permitted when topography makes continuation along the same side of the street impractical. Transitions shall only be made at street intersections. In residential zone districts, sidewalks will not be required on permanent dead-end streets less than three hundred (300) feet in length.

Sidewalks shall be included within the dedicated non-trafficway portion of the right-of-way of all public ways. Concrete curbs are required for all public ways where sidewalks are to be constructed. A median strip of grassed or landscaped area at least five (5) feet wide shall separate all sidewalks from adjacent curbs, except within ten (10) feet of intersections no grass strip will be required. No sidewalk shall be constructed closer than one (1) foot from any lot line. Where extraordinary difficult topographic conditions would require a retaining wall more than three (3) feet in height and other design solutions such as a wider separation are not desirable, the planning commission may allow less than a five (5) foot but not less than a two (2) foot landscape area between the back of the street curb and the nearest edge of the sidewalk.

4-103.104 Sidewalk Width
The width of sidewalks shall be as follows. Width shall be exclusive of encroachments such as utility poles, fire hydrants, parking meters, sign standards, street furniture, etc.

<table>
<thead>
<tr>
<th>Street Classification</th>
<th>Land Use Classification</th>
<th>Residential</th>
<th>Commercial</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Lane</td>
<td>5 feet</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Access Street</td>
<td>5 feet</td>
<td>5 feet</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Residential Collector</td>
<td>5 feet</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Community Collector</td>
<td>5 feet</td>
<td>6 feet</td>
<td>6 feet</td>
<td></td>
</tr>
<tr>
<td>Arterial Public Way</td>
<td>5 feet</td>
<td>6 feet</td>
<td>6 feet</td>
<td></td>
</tr>
</tbody>
</table>
4-103.105 Alternative Pedestrian Ways
Within PUD Districts and developments approved under Section ___ (cluster)____, of the zoning ordinance, the planning commission may approve pedestrian walkways at locations other than along the rights-of-way of streets. Within these developments a system of pedestrian walkways may be located within commonly held open space.

4-103.106 Pedestrian Accesses
Where necessary, pedestrian accessways may be required from a public way to schools, parks, playgrounds, or other nearby public ways. To accomplish this purpose, the planning commission may require perpetual unobstructed easements at least twenty (20) feet in width.

4-103.2 Street Standards

4-103.201 Frontage on Improved Public Ways
No subdivision shall be approved, unless the area to be subdivided shall meet the access requirements set forth in Subsection 1-112.107, (Access to Lots by Public Way or Private Easement) of these regulations. If any new street construction is proposed, all construction shall be in accordance with the provisions of these regulations and accompanying appendices.

4-103.202 Grading and Improvement Plan
No clearing, grading or construction of streets shall begin until construction plans, prepared in accordance with the specifications required herein, are approved, reclamation or performance surety posted and a grading permit issued by the Enforcing Officer. Following approval of such plans and accompanying development agreement, public ways shall be graded and improved to conform to the approved construction plans.

4-103.203 Improvements in Floodable Areas
The finished elevation of proposed public ways subject to flood shall be no less than the regulatory flood protection elevation. To determine compliance with this requirement the planning commission shall require profiles and elevations of public ways subject to flood. All drainage structures shall be sufficient to discharge flood flows without increasing flood height. Where fill is approved by the planning commission to bring the finished elevation of any public way to the required elevation, such fill shall not encroach upon a floodway, and the fill shall be protected against erosion by rip-rap, vegetative cover, or other methods deemed acceptable by the planning commission.

4-103.204 Topography and Arrangement
a. All public ways shall be arranged so as to obtain as many of the building sites as possible at or above the grades of the public ways. Grades of public ways shall conform as closely as possible to the original topography. A combination of steep grades and curves shall not be permitted.

b. All public ways shall be properly integrated with the existing and proposed system of public ways and dedicated rights-of-way as established on the major road plan or the land development plan.

c. All public ways shall be properly related to special traffic generators, such as industries, business districts, schools, churches, and shopping areas or centers; of population density; and to the pattern of existing and proposed land use.

d. In commercial and industrial developments, public ways and other access routes shall be planned in connection with the grouping of buildings, location of rail facilities, and the provision of alleys, truck loading and maneuvering areas, pedestrian walks and parking areas, so as to minimize conflict of movement among the various types of traffic, including pedestrian traffic.

4-103.205 Access to Arterial and Collector Routes
Where a subdivision borders on or contains an existing or proposed arterial or collector route, the planning commission may require that access to such public way be limited by:

a. the configuration of subdivision lots so that such lots derive vehicular access from streets other than the arterial or collector route;

b. a series of cul-de-sac, "U" shaped public ways, or short loops entered from and designed generally at right angles to such a parallel public way; or

c. a marginal access or service public way, separated from the arterial or collector route by a planting or grass strip and having access thereto at suitable points.

4-103.206 Traffic Impact Study
Any subdivision containing lots for one hundred (100) or more dwelling units shall be required to prepare at the expense of the developer or individual proposing the subdivision a traffic impact study. At the discretion of the Enforcing Officer, any subdivision may be required to prepare a traffic impact study. A Tennessee licensed engineer experienced in “traffic engineering” shall prepare such study in accordance with standard practices and procedures. The traffic study is intended to provide information as to current and proposed or projected traffic levels along all
streets touching, immediately abutting or directly impacted by the subdivision. Prior to development of the study, the applicant and/or the individual selected by the developer to prepare the study shall meet with the Enforcing Officer for purposes of establishing scope and design parameters to be used in preparing such study. Any improvements proposed to offset the traffic impact of the subdivision shall be indicated.

4-103.207 Reserve Strips
Creation of reserve strips adjacent to a proposed public way in such a manner as to deny access from adjacent property to such public way shall generally not be permitted. However, where in the opinion of the planning commission the use of a reserve strip would protect the public safety by providing a safer roadway configuration or other element of design that is clearly in the public interest, this prohibition may be waved. In any instance where a waiver to this provision is granted the grounds for and extent of such waiver shall be noted in the minutes of the planning commission.

4-103.208 Street Name, Regulatory and Warning Signs
a. Public Streets – Within all subdivisions the developer shall purchase and install street name and traffic control signs. All signage shall conform to the current edition of the Manual of Uniform Traffic Control Devices published by the United States Department of Transportation. Temporary signs may be installed and maintained in lieu of permanent signs until curbs are installed and backfilled. Such signs shall meet the same standards for height, size and legibility as permanent signs but may be mounted on temporary structures. The Director of Public Works shall verify the installation of temporary street name signs prior to issuance of any building permit.

b. Private Streets - The developer shall purchase and install appropriate street name and traffic control signs. Written confirmation of this action shall be required prior to issuance of any building permit or filing of a final plat.

c. Note to Appear on Plat - All subdivision plats which require street name signs shall have a note located thereon stating:

“No building permit shall be issued for any lot shown on this plat until street name, regulatory and warning signs are installed and verified by the Department of Public Works.”

4-103.209 Designation of Construction Routes
Streets to be utilized as construction routes shall be designated within all “major subdivisions”, as the term is defined in these regulations. Where possible, these construction routes shall coincide with the network of collector and arterial routes designated upon the Major Thoroughfare Plan
and within the plan of development for the particular subdivision. Where this is not possible, efforts shall be made to minimize direct contact between designated construction routes and streets classified as “Residential Access Lanes” or “Residential Access Streets”.

4-103.3 Private Streets

4-103.301 Generally
Where the ownership, control and maintenance of any street is proposed to remain in private ownership, such street shall be constructed to the design and construction standards as herein provided. A permanent access easement over such streets shall be provided to each and every parcel or lot that is to gain access therefrom. All such private improvements shall be maintained by the developer/owner or by a legally established Homeowners’ Association or other similar group approved by the planning commission. The legal documents establishing ownership and maintenance of the easement shall be submitted with the final plat for review and approval and shall be recorded with the final plat.

4-103.302 Private Streets Serving as Sole Access
In any instance where a private street serves as the sole means of vehicular access to more than one lot such street shall be constructed to the standards established in these regulations for the appropriate street classification.

4-103.303 Private Streets Serving as Secondary Access
In any instance where a private street serves as other than a sole means of vehicular access to more than one lot, such accessway shall be at least twenty (20) feet in width and shall be paved with an all weather surface. Prior to approving any such route the planning commission shall be provided with a maintenance agreement that is sufficient to assure that such accessway will be maintained so as to provide adequate emergency access to all properties served by such accessway.

4-103.304 Within Planned Unit Developments
Private streets located within a Planned Unit Development shall conform to the following provisions:

a. All hardware such as catch basins, inlets, etc. and all drainage structures shall meet the standards set forth herein and in other design standards adopted by the city.

b. All curbs shall meet or exceed the standards set forth in these regulations for public streets. Subject to approval of the Enforcing Officer, materials may be varied to conform to alternative materials chosen for private streets.
c. Pavement and base thickness shall equal or exceed the load bearing capacity, cross sectional area, structural integrity and life expectancy of public streets specified herein. Subject to the requirements of this section and approval of the Enforcing Officer, alternative road construction surfacing materials such as concrete (including exposed aggregate) and pavers may be utilized.

d. Excepting lots proposed for occupancy by single-family houses, all vehicular access shall be shown on the plat, and the design elements shall be approved by the Enforcing Officer.

e. Parking bays may generally be permitted upon or adjoining private streets, provided that in all instances an open unobstructed travel way sufficient to provide access for emergency vehicles is maintained.

4-103.305 Within All Other Residential Districts
Private streets serving residential properties located within districts other than Planned Unit Development Districts shall conform to the following provisions.
  a. A private street or network of streets may serve no more than ten (10) lots.

  b. All private streets serving two (2) or more lots shall as a minimum be constructed to the standards specified in these regulations.

4-103.4 Requirements for Dedications, Reservations, or Improvements
Where a proposed subdivision adjoins or encompasses either a substandard street, or a route depicted upon the Major Thoroughfare Plan, that is to be opened, widened or realigned, the following shall apply.

4-103.401 Undeveloped Property
  a. Substandard Streets
Substandard streets encompassed by or adjacent to the proposed subdivision shall be improved by the developer in accordance with the minimum standards set forth in Subsection 4-104.4, Tables 1 and 2, for the portion of such street that is located within the boundaries of the subdivision or the abutting street half.

  b. Planned Routing
When applicable, the layout of a street(s) within a subdivision shall conform to the routing depicted upon the Major Thoroughfare Plan. The amount of right-of-way for the type of street required shall be dedicated up to a maximum of that required for construction of “Community Collector” routes. Where any street so depicted requires a right-of -way greater than that required for construction of
a Community Collector, the developer shall show on the face of the plat an additional area “reserved for future right-of-way” and any required yard area shall be measured from such reservation line.

4-103.402 Developed Property
When property containing existing structures is being divided simply to place each structure on a separate lot and the future right-of-way will fall within the footprint of an existing structure, then the subdivider shall be required to note on the face of the plat as, “reserved for future right-of-way” any additional area necessary for compliance with the Major Thoroughfare Plan. The plat shall also contain a note stating, when any existing structure is demolished, the setback requirements for any new structure shall be measured from the reservation line.

4-103.403 Required Improvements or Dedications
All on-site traffic improvements identified as being required in a traffic study prepared in accordance with the requirements of these regulations shall be made by the developer upon land which the developer controls. Any off-site improvements identified in such study shall be made on a pro-rata basis to the extent the subdivision contributes to the requirement for such improvement(s). The Enforcing Officer shall be responsible for calculating the extent of participation required in off-site improvements.

4-104 Functional Design Criteria

4-104.1 Purpose
The public way design standards set forth in this section are hereby required in order to provide public ways of suitable location, width, and improvement to accommodate prospective traffic and afford satisfactory access to police, fire-fighting, sanitation, and road-maintenance equipment, and to coordinate public ways so as to compose a convenient and safe system and avoid undue hardships to adjoining properties. These provisions are intended to establish appropriate standards for the design of streets in residential subdivisions that will:

1. Promote the safety and convenience of vehicular traffic,

2. Protect the safety of neighborhood residents,

3. Minimize crime in residential areas,

4. Protect the residential qualities of neighborhoods by limiting traffic volume, traffic speed, noise and fumes,

5. Encourage the efficient use of land,
6. Minimize the cost of street construction and thereby restrain the rising cost of housing, and

7. Minimize the construction of impervious surface thereby protecting the quantity and quality of the community’s water resources.

4-104.2 Design Hierarchy
There is, hereby, established a design hierarchy according to street function. The purpose of the hierarchy is to establish clear functional guidelines and limitations to be utilized in the design of streets.

4-104.201 New Streets
Each proposed street shall be classified and designed for its entire length to meet or exceed the minimum standards for one of the following street types:

<table>
<thead>
<tr>
<th>STREET CLASSIFICATION</th>
<th>DESIGN CAPACITY (ADT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Access Lane</td>
<td>200</td>
</tr>
<tr>
<td>Residential Access Street (1)</td>
<td>500</td>
</tr>
<tr>
<td>Residential Access Street (2)</td>
<td></td>
</tr>
<tr>
<td>Rural Residential Access Street</td>
<td></td>
</tr>
<tr>
<td>Urban Residential Access Street (2)</td>
<td></td>
</tr>
<tr>
<td>Residential Collector Street</td>
<td>1,000 – 2,500</td>
</tr>
<tr>
<td>Residential Collector Street (1)</td>
<td></td>
</tr>
<tr>
<td>Residential Collector Street (2)</td>
<td></td>
</tr>
<tr>
<td>Urban Residential Collector Street</td>
<td></td>
</tr>
<tr>
<td>Community Collector Street</td>
<td>2,500 – 6,000</td>
</tr>
<tr>
<td>Arterial Street</td>
<td>6,000+</td>
</tr>
</tbody>
</table>

4-104.202 Existing Streets
During the plan review process each street abutting or affecting the design of a subdivision or land development that is not already classified on the Major Thoroughfare Plan shall be classified according to its function, design and use by the planning commission at the request of the applicant. The classification of existing streets shall include the hierarchy of Subsection 4-104.201, above, and may also include classifications of higher order as determined by the adopted Major Thoroughfare Plan.

4-104.203 Traffic Volume Calculations
a. Trip Generation Rates
The following chart shall be used to determine the anticipated average daily traffic level of proposed residential development:

<table>
<thead>
<tr>
<th>HOUSING TYPE</th>
<th>AVERAGE WEEKDAY TRIP GENERATION RATE (ADT) PER DWELLING UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family Detached Dwellings</td>
<td>8 trips</td>
</tr>
<tr>
<td>Cluster and Townhouses</td>
<td>7 trips</td>
</tr>
</tbody>
</table>
b. Volume Calculations
Calculation of traffic volumes shall be accomplished by using the following formula:

\[(\text{Factor for Dwelling Type}) \times (\text{Number of Units Receiving Access from Street}) = \text{Design ADT}\]

4-104.3 Residential Street Design Criteria and Service Restrictions
The material contained within this segment is intended to provide information as to the intended function, design capacity and service limitations of the various street types presented in Subsection 4-104.2, above. The order of presentation proceeds from smallest capacity street to the greatest. For each street identified within the hierarchy, the following design elements are presented:

- Street Function
- Design Capacity and Service Restrictions
- Street Access Criteria

4-104.301 Residential Access Lane
a. Street Function - A residential access lane is a frontage street that provides access to abutting properties; it shall be designed to carry no more traffic than that generated by those properties that gain direct access from the street.

b. Design Capacity and Service Restriction - Each residential access lane shall be designed so that no section of the street conveys an average daily traffic (ADT) volume greater than two hundred (200) or serves more than twenty-five (25) single family dwellings. Each half a loop street may be regarded as a single local access street and the total traffic volume generated on a loop street shall not exceed four hundred (400) ADT.

c. Street Access - Residential access lanes may intersect or take access from any street type. Both ends of a loop street, however, must intersect the same collecting street and be laid out to discourage through traffic.

4-104.302 Residential Access Street
a. Street Function - Residential access streets are designed to provide access to individual properties as well as access to the higher classification street network. The residential access street provides for neighborhood circulation and may carry neighborhood traffic and through movements. Residential access streets differ in design depending upon the location of such streets. The rural residential
street is intended to maintain the rural character of the area or neighborhood. It is designed as a curbless paved street section, with gravel shoulders for emergency parking and open roadside ditches for drainage. The urban residential street performs the same function as the rural residential street except within an urban environment. The urban residential street is designed as a curb street.

b. Design Capacity and Service Restriction - The residential access street is designed to convey an average daily traffic (ADT) volume in the range of five hundred (500) to one thousand (1,000).

c. Street Access - If the total design traffic exceeds five hundred (500) ADT, a residential access street shall be provided with no fewer than two (2) access intersections to streets of higher classification in the street hierarchy. For residential access streets with less than five hundred (500) ADT, one access intersection to a street of higher order is allowed.

4-104.303 Residential Collector Street

a. Street Function - The residential collector street provides access to individual properties and collects and distributes neighborhood traffic from residential streets to community collector and arterial streets.

b. Design Capacity and Service Restriction - The residential collector street is intended to serve anticipated traffic volumes ranging from one thousand (1,000) to twenty-five hundred (2,500) trips per day. Whenever possible, residential collector streets shall be designed to have no residential lots fronting directly on them. When this is not possible, the amount of residential frontage shall not exceed the limits set forth in the accompanying chart. In addition, only lots having frontages of one hundred (100) feet or more may front on collector streets and space shall be provided on these lots for turnaround so that vehicles will not have to back onto collector streets.

<table>
<thead>
<tr>
<th>ADT Level</th>
<th>1,000-1,999</th>
<th>1,200-1,599</th>
<th>1,600-1,999</th>
<th>2,000+</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of allowable access frontage</td>
<td>20%</td>
<td>10%</td>
<td>5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

4-104.304 Community Collector Street

a. Street Function - Community collector streets collect and distribute traffic from residential collector and other residential streets to the arterial transportation systems.
b. Design Capacity and Service Restriction - The community collector street is designed for anticipated traffic volumes ranging from twenty-five hundred (2,500) to six thousand (6,000) trips per day. Community collector streets shall be designed to have no residential lots fronting directly on them.

4-104.4 General Design
The general design of all public ways shall conform to the standards in Tables 1 and 2, that follow, hereafter.

4-104.401 Rights-of-Way and Pavement Width
Minimum rights-of-way and pavement width shall be provided as required to meet the design standards for the various classifications of streets set out in Tables 1 and 2.

a. Reduction in Right-of-Way Width
The city may reduce the required right-of-way width for residential streets under the following conditions:

i. The site is located within a Planned Unit Development or a Variable Lot Size Residential Development under applicable provisions of the zoning ordinance.

<table>
<thead>
<tr>
<th>TABLE 1: MINIMUM RIGHT-OF-WAY OR EASEMENT AND PAVEMENT WIDTH (in feet) BY STREET TYPE AND INTENSITY OF DEVELOPMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESIDENTIAL</strong></td>
</tr>
<tr>
<td>Right of way</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td><strong>Access Lane</strong></td>
</tr>
<tr>
<td>Urban</td>
</tr>
<tr>
<td>Rural</td>
</tr>
<tr>
<td><strong>Access Street</strong></td>
</tr>
<tr>
<td>Urban</td>
</tr>
<tr>
<td>Rural</td>
</tr>
<tr>
<td><strong>Residential Collector</strong></td>
</tr>
<tr>
<td>Urban</td>
</tr>
<tr>
<td>More than 2,000 ADT.</td>
</tr>
<tr>
<td>Rural</td>
</tr>
<tr>
<td><strong>Collector</strong></td>
</tr>
<tr>
<td>Urban</td>
</tr>
<tr>
<td>Rural</td>
</tr>
</tbody>
</table>

**Notes:**

DUPA = Dwelling Units per Acre

**Urban Streets** - All streets classified as urban are curbed streets. These street sections are to be utilized on all properties located within the city regardless of size of lots and on all lots smaller than one acre in size located within the unincorporated portion of the planning jurisdiction.

**Rural Streets** - Streets classified as rural may be utilized only to serve lots forty thousand (40,000) square feet or larger in size.
### TABLE 2: GENERAL DESIGN STANDARDS OR STREETS

<table>
<thead>
<tr>
<th></th>
<th>RESIDENTIAL STREET</th>
<th>NONRESIDENTIAL STREET</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design Speed (MPH)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Access Lane</td>
<td>25</td>
<td>N/A</td>
</tr>
<tr>
<td>Residential Access Street</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Residential-Collector Street</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Collector Street</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td><strong>Maximum Percentage Grade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Access Lane</td>
<td>12%</td>
<td>N/A</td>
</tr>
<tr>
<td>Residential Access Street</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Residential-Collector Street</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Collector Street</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Minimum Percentage Grade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Streets</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Maximum Super-Elevation (foot/foot)</strong></td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>Minimum Stopping Sight Distances (in feet)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Access Lane</td>
<td>150</td>
<td>N/A</td>
</tr>
<tr>
<td>Residential Access Street</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Residential-Collector Street</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Collector Street</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td><strong>Minimum Radius of Return at Intersections</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At Right-of-Way</td>
<td>25 ft.</td>
<td>30 ft.</td>
</tr>
<tr>
<td>At Pavement</td>
<td>30 ft.</td>
<td>50 ft.</td>
</tr>
<tr>
<td><strong>Minimum Sight Distance (in Feet)</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Access Lane</td>
<td>150</td>
<td>N/A</td>
</tr>
<tr>
<td>Residential Access Street</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Residential-Collector Street</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Collector Street</td>
<td>375</td>
<td>375</td>
</tr>
<tr>
<td><strong>Maximum Grade At Intersections</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Access Lane (Within 50 ft.)</td>
<td>5%</td>
<td>N/A</td>
</tr>
<tr>
<td>Residential Access Street (Within 50 ft.)</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Residential-Collector Street (Within 100 ft.)</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Collector Street (Within 100 ft.)</td>
<td>3%</td>
<td>3%</td>
</tr>
</tbody>
</table>

**Pavement Crown**

The paved surface shall slope downward from the centerline of the street outward to the edge of the paved surface on each side at a rate of 2%.

**Turnaround Standard (No Outlet Streets)**

A forty (40) foot pavement radius for a cul-de-sac or a “Y” or “T” turnaround with sixty (60) foot length, twenty (20) foot width shall be provided at the terminus of all permanent dead end access streets serving residential property. The turnaround, including sidewalk where required, shall be within the right-of-way. The maximum length of permanent cul-de-sac streets shall be twelve hundred (1200) feet. Temporary cul-de-sac streets may be a maximum of six hundred (600) feet in length.

**Corner Sight Distance**

Measured from a driver’s eye (3.5 feet above pavement) to a point 3.5 feet above the pavement at a required distance based on miles per hour.

**Stopping Sight Distance**

Measured from a driver’s eye (3.5 feet above pavement) to a point 3.5 feet above the pavement to a point 6 inches above the pavement at a required distance based on miles per hour.
ii. The potential for future development will alter neither the street classification nor the design standards proposed. As a condition for varying the right-of-way requirements, the city may require binding agreements to insure no additional access to or use of the street.

iii. In no instance shall a right-of-way be less than forty (40) feet. In granting the reduced right-of-way width, it shall be determined that sufficient width will be available to provide for all the following (unless separate right-of-way for them is being provided elsewhere to the satisfaction of the city, or they are clearly not required by the proposed development):

- Pavement
- Curbs
- Shoulders
- Utility easements
- Drainage swales
- Pedestrian and/or bicycle paths
- Street trees or other planting strips
- Turning lanes
- Cut or fill slopes (the right-of-way shall extend five (5) feet beyond the crest or toe of these slopes).

b. Increase in Right-of-Way Width

The city may increase the required right-of-way width for residential streets under the following conditions:

i. If proposed lots are large enough for further subdivision that may change the street classification in the future to a higher order street, the city may require that the right-of-way width for the higher order street be provided.

ii. In unusual circumstances, the provision of the elements listed in Subpart a, (iii), of this section, may require right-of-way width in excess of that established in Table 1.

4-104.402 Intersections

a. Pavement shall intersect as nearly as possible to a ninety (90) degree angle for a minimum of fifty (50) feet from an intersection. A proposed intersection of two (2) new public ways at an angle of less than seventy-five (75) degrees shall not be permitted. Not more than two (2) public ways shall intersect at any one point, unless specifically approved by the planning commission.
b. Centerline off-sets of less than one hundred fifty (150) feet between T-type intersections within public ways shall not be permitted, except where the intersected public ways have separated dual drives without median breaks at either intersection. Where public ways intersect arterial or collector routes, the alignment of such streets shall be continuous. Intersections of arterial or community collector streets shall be at least eight hundred (800) feet apart.

c. Minimum curb or edge of pavement radius shall be determined according to the specifications for the street of higher classification in the street system hierarchy, as specified below: This minimum should not be confused as the right-of-way return radius but is the curb edge of pavement.

<table>
<thead>
<tr>
<th>MINIMUM RADIUS OF RETURNS AT STREET INTERSECTIONS</th>
<th>MINIMUM RETURN RADIUS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESIDENTIAL ACCESS LANE</td>
<td>10 feet</td>
</tr>
<tr>
<td>RESIDENTIAL ACCESS STREET</td>
<td>10 feet</td>
</tr>
<tr>
<td>RESIDENTIAL COLLECTOR</td>
<td>15 feet</td>
</tr>
<tr>
<td>COMMUNITY COLLECTOR</td>
<td>30 feet</td>
</tr>
<tr>
<td>HIGHER ORDER STREETS</td>
<td>As determined by the Enforcing Officer</td>
</tr>
</tbody>
</table>

* This is minimum. The actual spacing shall be determined by the Enforcing Officer based upon the traffic characteristics of the higher order street.

d. Whenever a proposed street intersects an existing or proposed street of higher order in the street hierarchy, the street of lower order shall be made a stop street. The street of lower order shall also be designed to provide a minimum corner sight distance as specified in Illustration 1, Street of Lower Order Minimum Corner Sight Distance; and Illustration 2, Paved Taper for Right Turns.

e. Intersections shall be designed with a flat grade wherever practical. In hilly or rolling areas, at the approach to an intersection, a leveling area shall be provided having not greater than a two (2) percent grade for a distance of sixty (60) feet, measured from the nearest right-of-way line of the intersecting public way.

f. The cross-slope on all public ways, including intersections, shall be three (3) percent or less.

4-104.403 Acceleration and Deceleration Lanes

a. Deceleration or turning lanes may be required by the Enforcing Officer along existing and proposed streets as determined by a traffic impact study.
### Illustration 1: Street of Lower Order Minimum Corner Sight Distance

Y = CORNER SIGHT DISTANCE, measured from point c and c to d.

b = eye level from a car stopped at the intersection on the minor road; for this ordinance b is situated 3.75' above the major road.

\[ a \text{ and } d = \text{ a point 4.5'} \text{ above the centerline of the major roadway.} \]

\[ c = \text{ approximate center of intersection.} \]

---

### MINIMUM CORNER SIGHT DISTANCE “Y”

<table>
<thead>
<tr>
<th>Major Road Type / Design Speed</th>
<th>Y (in feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher Order Street / 50 mph</td>
<td>500</td>
</tr>
<tr>
<td>Higher Order Street / 40 mph</td>
<td>400</td>
</tr>
<tr>
<td>Community Collector / 40 mph</td>
<td>400</td>
</tr>
<tr>
<td>Residential Collector / 35 mph</td>
<td>350</td>
</tr>
<tr>
<td>Residential Access Street / 30 mph</td>
<td>300</td>
</tr>
<tr>
<td>Residential Access Lane / 25 mph</td>
<td>250</td>
</tr>
</tbody>
</table>

**NOTE:** The entire area of the clear sight triangle described by points "abc", above, shall be designed to provide an unobstructed view across it from point b, to all points four and one-half (4.5) feet above the roadway along the centerline from point a, to point d.

---

### Illustration 2: Paved Taper for Right Turns

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b. Deceleration Lanes Shall Be Designed to the Following Standards:

i. On a State Route, the lane shall be designed in conformance with the requirements of the Tennessee Department of Transportation or as approved by the Enforcing Officer, whichever is greater.

ii. The lane width shall be the same as the required width of the roadway moving lanes for its full stacking length.

iii. A taper shall begin at the end of the deceleration lane and shall be 8:1 up to thirty (30) mph and 15:1 above thirty (30) mph.

iv. The minimum lane length shall be as follows:

<table>
<thead>
<tr>
<th>Design Speed of Road</th>
<th>Minimum Deceleration Lane Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mph</td>
<td>235 feet</td>
</tr>
<tr>
<td>40 mph</td>
<td>315 feet</td>
</tr>
<tr>
<td>50 mph</td>
<td>435 feet</td>
</tr>
</tbody>
</table>

c. Acceleration lanes are only required when indicated as needed by a traffic impact study. The design shall be as per the recommendation of the Enforcing Officer. As necessary, a paved taper shall be provided for right turns.

4-104.404 Marginal Access and One-Way Streets

a. Classification and Design of Marginal Access Streets
Marginal access streets may be utilized as an alternative to stripping off lots along existing or proposed collector or higher order streets. Marginal access streets shall be classified and designed to conform to the design standards and service restrictions of either residential access lanes or residential access streets as anticipated daily traffic may dictate.

i. Intersection Spacing
The minimum distance between intersections of the marginal access street with residential collectors shall be three hundred (300) feet. Minimum distances with higher order streets shall be determined by the Enforcing Officer based upon the traffic characteristics of the higher order street.

ii. Distance Between Travelways
A minimum distance of thirty (30) feet shall be provided between the paved portion of the marginal access street and the paved portion of the higher order street. This area shall be used to
provide a visual screen between the roadways by landscaping and/or use of a berm.

b. Utilization and Design of One-Way Streets
One-way streets may be permitted as loop streets or marginal access streets where there is need to separate the directional lanes to preserve natural features to avoid excessive grading for street construction on steep slopes. Pavement and curb transitions shall be designed and constructed in accordance with standards provided by the Enforcing Officer.

4-104.405 Arrangement of Dead-End Streets
a. Temporary Stub Streets

i. Residential Access Lane and Residential Access Street Stub Streets
Stub streets that are a portion of either a residential access lane or a residential access street may be permitted only within subsections of phased development for which the proposed street extension in its entirety has been approved as part of a preliminary plat.

ii. Collector Stub Streets
Stub streets shall be required by the city on collector streets provided that the future extension of the street is deemed desirable by the city and conforms to the adopted major thoroughfare plan.

iii. Temporary Turnarounds
All stub streets shall be provided with a turnaround paved to an outside radius of fifty (50) feet. No turnaround is required if the stub street provides access to four (4) or less lots or housing units. In the later case, a sign indicating a dead-end street shall be posted unless otherwise required by emergency services or the Enforcing Officer.

b. Permanent Dead-End Public Ways

i. General Design Standards
Where a public way does not extend beyond the boundary of the subdivision and its continuation is not required by the planning commission for access to adjoining property, its terminus shall normally not be nearer to such boundary than one hundred fifty (150) feet. However, the planning commission may require the reservation of an appropriate easement to accommodate drainage facilities, pedestrian
traffic, or utilities. A cul-de-sac turnout shall be provided at the end of a dead-end public way in accordance with the design standards of these regulations.

For greater convenience to traffic and more effective police and fire protection, permanent dead-end public ways shall, in general, be limited in length in accordance with the design standards of these regulations.

ii. Design of Turnarounds
The type of turnaround required shall be determined by the planning commission based upon recommendation of the Enforcing Officer. In general the design standards presented in Table 2, shall apply. The planning commission will consider alternative terminations when the street is located upon steep slopes and excessive cut or fill will be required to meet the design standards of the typical sections.

4-104.406 Railroads and Limited Access Highways
Railroad right-of-way and limited access highways, where so located as to affect the subdivision of adjoining lands, shall be treated as follows:

a. In residential areas, a buffer strip at least twenty-five (25) feet in depth in addition to the normally required depth of the lot may be required adjacent to the railroad right-of-way or limited access highway. This strip shall be part of the platted lots and shall be designated on the plat: "This strip is reserved for screening; the placement of structures hereon is prohibited."

b. In commercial or industrial areas, the nearest public way extending parallel or approximately parallel to the railroad shall, wherever practicable, be at a sufficient distance therefrom to ensure suitable depth for commercial or industrial usage.

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

4-104.407 Bridges
Bridges of primary benefit to the subdivider, as determined by the planning commission, shall be constructed at the full expense of the subdivider without reimbursement from the governing body. The sharing of expenses for the construction of bridges not of primary benefit to the subdivider, as
determined by the planning commission, shall be fixed by special agreement between the governing body and the subdivider.

4-105 Road Construction Specifications
The road construction specifications included in these regulations, as Appendix B, are adopted as a part hereof. These specifications shall be the minimum standards for any subdivision within the jurisdictional area.

4-106 Drainage and Storm Sewers

4-106.1 General Requirements
All plats shall make adequate provisions for storm water or floodwater run-off basins or channels. The storm water drainage system shall be separate and independent from any sanitary sewer system. Each lot shall provide on each lot line the easement necessary for drainage. Easements at least twenty (20) feet in width (ten (10) feet on each abutting lot) shall be required for pipes with diameters of sixty (60) inches or less. Easements at least twenty-four (24) feet in width (or as required by the Enforcing Officer) shall be required for pipes over sixty (60) inches in diameter. The following notation regarding the use of these easements shall be made upon all plats:

"Public utility easements where shown hereon are intended to indicate an easement for construction, operation and maintenance of public utilities including, but not limited to, sanitary sewers, water lines, telephone signal conduits, electric conductors, and natural gas lines. Drainage easements are intended to indicate an easement for construction and maintenance of drainage facilities. The maintenance of drainage facilities is the responsibility of the owner of the property whereon such facilities are located."

4-106.2 Nature of Storm Water Facilities

4-106.201 Storm Water Design and Construction Specifications
The storm water design and construction specifications included in these regulations shall be the minimum standards for any subdivision within the jurisdictional area.

4-106.202 Location
The subdivider shall be required to transport by pipe or open ditch any spring or surface water that may exist prior to or as a result of the subdivision. Such drainage facilities shall be located in the public right-of-way, wherever feasible, or in perpetual unobstructed easements of appropriate width. These facilities shall be constructed in accordance with the construction specifications contained in these regulations.

4-106.203 Accessibility to Public Storm Sewers
Where a public storm sewer is accessible, the developer shall install storm sewer facilities, or if no facilities are within one thousand (1,000) feet,
adequate provision shall be made for the disposal of storm water, subject to the specifications contained herein.

4-106.204 Accommodation of Upstream Drainage Areas
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 based on the construction specifications assuming conditions of maximum potential development within the watershed.

4-106.205 Effect on Downstream Drainage Areas
The subdivider shall prepare and submit to the Enforcing Officer a study of the effect of each subdivision on existing downstream properties and drainage facilities outside the area of the subdivision. Requirements for the storm water report are included in Section 5-103.3, of these regulations.

Pre-development and post-development runoff rates, volumes and velocities along with associated calculations and maps shall be submitted with a storm water drainage report prepared by a Tennessee registered engineer. If increased runoff rate or total volume impacts downstream drainage structures then these structures shall be improved with the permission of the appropriate property owners. If drainage easements do not exist, the planning commission may require that they be obtained by the developer.

Where it is anticipated that drainage and/or runoff from a development will overload an existing downstream drainage facility, the planning commission shall withhold approval of the subdivision until provision has been made for adequate improvement of such drainage facilities. The subdivider shall be required to construct adequate downstream facilities or contribute his pro-rata share toward the construction of adequate downstream facilities and install on-site storm water detention to mitigate the downstream impacts.

On site storm water detention proposed to reduce the peak rate of discharge to off site drainage systems downstream shall not cause increased peak flows or velocities detrimental to downstream properties or facilities. When detention facilities are utilized, the peak rate of discharge after development shall not exceed the predevelopment peak rate.

Because detention in downstream areas of a large watershed can cause increased peak flows in downstream channels, the city reserves the right to alter the detention criteria and to prohibit it where it is not in the best interest of the city. This decision shall be based on sound engineering judgement and/or studies. The city may also allow in-stream mitigation measures in lieu of detention where it can be shown that such measures are of equal or greater benefit. In all cases where detention facilities are required, the
location and design must comply with any master drainage plans that may have been developed.

Controlled releases of discharge from a detention basin shall include “V-notch”, rectangular or other weir configurations which prevent increased discharge (above pre-development conditions) for required storm events as listed in Subsection 5-103.3.

Detention facilities shall be platted as perpetual drainage easements and shall be maintained by the property owner or the owners' association, as applicable. A Storm Water Detention Agreement as defined in Subsection 4-106.1, General Requirements, shall be executed. The city will in no way be responsible for maintenance of drainage facilities on private property. Estimated increases in discharge velocity shall be mitigated by energy dissipation devices where required to prevent erosion.

The drainage system shall be designed to honor natural drainage divides, where practical. Surface waters shall not be concentrated and discharged onto adjoining property at rates and/or velocities exceeding predevelopment conditions, unless an easement expressly authorizing such discharge has been granted by the owner of the affected land and the discharge is into an adequate natural watercourse or drainage system.

4-106.206 Areas of Poor Drainage
In general, areas of poor drainage shall be classified as “land unsuitable for development” (see Subsection 4-101.401) and shall not be included in lots. In any instance where it may be necessary to locate a roadway in an area subject to flooding that is not located within the one-hundred year regulatory flood boundary, the planning commission may approve such subdivision; provided, the applicant fills the affected flood area of said subdivision to place public way elevations no lower than the known flood elevation. The plat of such subdivision shall provide for a floodway along the bank of any stream or watercourse of width sufficient to contain or move the water of the one-hundred year regulatory flood, and no fill shall be placed in the floodplain; neither shall any building nor flood-restrictive structure be erected or placed therein. The boundaries of the flood area and floodplain, and the one-hundred year regulatory flood elevation, shall be determined by the planning commission based upon the review specified in Subsection 2-103.2, of these regulations, and the submission of flood data in construction plans as specified in Section 5-103, of these regulations.

As general policy sinkholes shall be classified as “land unsuitable for development” (see Subsection 4-101.401) and shall not be included in streets and lots. In any instance where it is unavoidable, the Enforcing Officer and planning commission shall approve any alteration of a sinkhole or the drainage pattern. (See Subsection 4-102.602, Lot Drainage.)
4-106.207 Floodplain Areas
In all instances the regulatory floodway shall be preserved from any and all destruction or damage resulting from clearing, grading, or dumping of earth, waste material, or stumps. Any subdivision that contains flood prone land shall be subject to the special provisions set forth in Subsections 2-101.4 and 4-101.403, Protection Against Flood Damage, of these regulations.

4-106.208 Storm Water Detention and Discharge Control
The general policy of the city is to provide detention for the increased volume of water generated by a development. The major factors in evaluating drainage designs will be the effect of increased runoff rates on downstream water levels and the proximity of any structures.

Any drainage system that discharges without some form of detention shall route its water along a designated public drainage easement. A drainage system can be allowed to discharge along an existing but non-recorded (prescriptive) easement if the following are true:

a. Post-development flow is less than or equal to the predevelopment flow at the same location. (See Subsection 4-106.205, Effect on Downstream Drainage Areas.)

b. In order to prevent erosion at all outlet points, the subdivider’s engineer will be required to design and submit for approval an outlet system that approximates the width and velocity of the flow that existed prior to development.

4-106.3 Dedication of Drainage Easements

4-106.301 General Requirements
Where a subdivision is traversed by a watercourse, drainageway, channel, or stream, there shall be provided a storm water easement or drainage right-of-way conforming substantially to the lines of the one-hundred (100) year flood elevation of such watercourse. Where new open drainageways are utilized they shall be designed for the twenty-five (25) year frequency flood.

4-106.302 Drainage Easements
a. Where topography or other conditions are such as to make impracticable inclusion of drainage facilities within the right-of-way of a public way, perpetual unobstructed easements at least twenty (20) feet in width for such facilities shall be provided across property outside the public way lines and with satisfactory access to public ways. Easements shall be indicated on the preliminary and final plats. Drainage easements shall be carried from the public way to a natural watercourse or to other drainage facilities.
b. When downstream drainage improvements are proposed that will require additional easements across private land outside the subdivision, appropriate drainage easements must be secured by the developer and indicated on a plat amendment for that property.

c. The applicant shall dedicate, when required by the planning commission, either in fee, or by drainage or conservation easement, the land on both sides of an existing watercourse for a distance to be determined by the Enforcing Officer.

4-106.303 Ditching, Concrete Ditch Paving, and Culverts and Storm Drains
The design and construction details of drainage facilities shall be in accordance with the provisions of these regulations. The Enforcing Officer shall approve the design and construction details of all such facilities.

4-107 Water Facilities

4.107.1 General Requirements
The water distribution system (fire mains and hydrants) shall be sized for the ultimate tributary population and shall meet the fire flow requirements of the Hendersonville Fire Department through the provisions of the latest addition of N.F.P.A. 1141, Fire Protection in Planned Building Groups. In cases where a water supply system consisting of mains and fire hydrants does not exist, the provisions of the latest addition of N.F.P.A. 1231, Standard on Water Supplies for Suburban and Rural Fire Fighting, shall apply. For the purpose of this section, the fire department recognizes the required fire flows as established by the Insurance Services Office (I.S.O.). Water supply systems not publicly owned and installed shall meet the minimum requirements of NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances. Water supplies shall be capable of supplying the required fire flow for at least one (1) hour for fire flows of fifteen hundred (1,500) g.p.m. or less at twenty (20) p.s.i. or for two (2) hours for fire flow greater than fifteen hundred (1,500) g.p.m. at twenty (20) p.s.i. The contractor or installer of water supply systems shall demonstrate by actual test that the capacity of the water supply systems will meet fire protection requirements.

NOTE: The above requirement is based on the required fire flow established by the Insurance Services Office (I.S.O.).

4-107.2 Fire Hydrants

4-107.201 Spacing and Locations
For commercial districts or commercial subdivisions,* there shall be one (1) or more hydrants at each street intersection depending on the required fire flow, with intermediate hydrants so that they are not over three hundred (300) feet apart.
NOTE: Commercial districts include business, industrial, warehouse, institutional, educational, hotel and multi-family residential occupancies.

Distance between installed fire hydrants shall not exceed three hundred (300) feet, unless fire department operations or technology would otherwise dictate increased spacing. For buildings exceeding twenty thousand (20,000) square feet in ground floor area, a fire hydrant shall be installed within three hundred (300) feet of any portion of the building. Actual location of fire hydrants shall be as required by the Fire Department prior to installation.

For residential districts or residential subdivisions, there shall be a hydrant at each street intersection with intermediate hydrants so that they are not over five hundred (500) feet apart.

Fire hydrants shall be installed in accordance with the Standards of the American Water Works Association. Hydrants shall have not less than a six (6) inch connection with the mains. A valve shall be installed in the hydrant connection.

Fire hydrants shall be supplied by not less than a six (6) inch diameter main installed on a looped system, or not less than an eight (8) inch diameter main if the system is not looped or the fire hydrant is installed on a dead-end main exceeding three hundred (300) feet in length.

Fire hydrants are needed in sufficient numbers to permit delivery of the needed fire flow utilizing typically available quantities of fire hose and pumper capacities. Insurance Service Office (I.S.O.) has developed a reasonable and easily applied method for fire hydrant distribution evaluation for consideration in the case of each protected property. The I.S.O. method takes into account the design of the fire hydrant, distance from the property and size of hydrant branch and riser. The recommended I.S.O. hydrant credit system is illustrated below:

<table>
<thead>
<tr>
<th>Type Hydrant</th>
<th>0-300 Feet</th>
<th>301-600 Feet</th>
<th>601-1,000 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4-1/2&quot; &amp;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 2-1/2&quot; Outlet</td>
<td>1,000 g.p.m.</td>
<td>670 g.p.m.</td>
<td>250 g.p.m.</td>
</tr>
<tr>
<td>2 - 2-1/2&quot; Outlet</td>
<td>750 g.p.m.</td>
<td>670 g.p.m.</td>
<td>250 g.p.m.</td>
</tr>
<tr>
<td>1 - 2-1/2&quot; Outlet</td>
<td>500 g.p.m.</td>
<td>500 g.p.m.</td>
<td>250 g.p.m.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Riser or Branch</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6&quot;</td>
<td>250 g.p.m.</td>
<td>250 g.p.m.</td>
<td>250 g.p.m.</td>
</tr>
</tbody>
</table>

An example of use of the table follows:
Assume a property with a needed fire flow of 4,000 g.p.m. Two (2) hydrants, each with two (2), 2-1/2 inch outlets are within three hundred (300) feet;
two (2) hydrants, each with one (1), 4-1/2 inch and one (1), 2-1/2 inch outlet are five hundred (500) feet away; and one (1) hydrant with one (1), 4-1/2 inch and one (1), 2-1/2 inch outlet is eight hundred-fifty feet distance.

Referring to the matrix; the first two (2) hydrants are credited at 750 g.p.m. each; the second two (2) at 670 g.p.m. each and last one (1) at 250 g.p.m.; total credit 3,000 g.p.m.. In the example at least one (1) additional standard hydrant is needed within three hundred (300) feet of the test location.

As the table indicates, hydrants with barrels or branch connectors less than six (6) inches in diameter can provide only limited usable water for fire suppression, regardless of the number of outlets. For this reason, new hydrants shall not be installed on mains smaller than six (6) inches in diameter.

4-107.202 Hydrant Types
Two (2) types of fire hydrants (single pumper and dual pumper) shall be used. The type and location of each fire hydrant shall be designated by the city and approved by the governing utility district.

All fire hydrants shall be iron bodied, fully bronze mounted, hydrants manufactured to equal or exceed AWWA Specification C502-64. Hydrants shall be suitable for 150 p.s.i. working pressure and shall be subjected to a test pressure of 300 p.s.i. Inlet connection shall be six (6) inches mechanical joint unless noted otherwise on project drawings. The main hydrant valve shall be compression type, closing with the pressure, with five and one-fourth (5 1/4) inch opening.

Hydrants shall be of the "dry head" type with an oil reservoir and provision for automatic lubrication of stem threads and bearing surfaces each time the hydrant is operated. Double O-ring seals shall be provided to keep water out of the hydrant top. The operating nut shall be one and one-half (1 1/2) inch pentagon, opening to left, and shall be equipped with a weather cap.

Hydrants shall be provided with automatic multiport drain ports arranged to momentarily flush under pressure each time the hydrant is operated. A positive stop shall be provided on the operating stem to prevent over travel when operating the valve.

Fire hydrant shall be supplied with a bituminous coating along the buried portion of hydrant and a chrome yellow enamel finish for above grove portions of the hydrant.

a. Single Pumper Hydrant - The single pumper fire hydrant shall be Mueller A-423, or equal.
Single pumper fire hydrants shall be equipped with two (2), two and one-half (2 1/2) inch hose nozzles, one (1), four and one-half (4 1/2) pumper nozzle, breakable safety flange and safety stem coupling. Bronze nozzles shall be securely locked to prevent them from blowing off. Hose threads shall be National Standard. Nozzle caps shall be equipped with non-kink chains.

b. **Dual Pumper Hydrant** - Dual pumper fire hydrants shall be equipped with two (2), four and one-half (4 1/2) inch pumper nozzles, one (1), two and one-half (2 1/2) inch hose nozzle, breakable safety flange and safety stem coupling. Bronze nozzles shall be securely locked to prevent them from blowing off nozzle. Hose threads shall be National Standard. Nozzle caps shall be equipped with non-kink chains.

### 4-107.203 Valves

Fire service main system shall have sectional controlling valves at appropriate points, in order to permit sectionalizing the system in the event of a break or for the making of repairs or extensions. A sufficient number of valves should be provided so that a break or other failure will not affect more than one-fourth (1/4) mile of arterial mains.

There shall be a valve at each street intersection with intermediate valves so that they are not over five hundred (500) to one thousand (1,000) feet apart in commercial districts and eight hundred (800) to fifteen hundred (1,500) feet apart in residential districts. The type and location of each valve shall be designated by the city and approved by the governing utility district.

The regulations and specifications of the governing utility district shall otherwise apply to all design and construction of the water system where it has not been covered by these regulations.

To eliminate future road cuts on newly paved surfaces, all underground utilities for fire hydrants, together with the fire hydrants themselves, and all other water supply improvements shall be installed before any final paving of a public way shown on the final subdivision plat, unless otherwise approved by the appropriate governmental official.

### 4-108 Sewage Facilities

#### 4-108.1 General Requirements

The applicant shall install sanitary sewer facilities in a manner prescribed by the regulations of the Tennessee Department of Environment and Conservation and by any other applicable standards and specifications. All plans shall be designed and approved in accordance with the rules, regulations, specifications, and standards, of any applicable governmental agency or appropriate unit thereof.
4-108.2 Mandatory Connection to Public Sewer System

1. When public sanitary sewers are accessible to the subdivision, as determined by the planning commission, the subdivider shall provide such facilities to each lot therein and shall connect the facilities to the public system. The subdivider shall provide sewers that meet standards set forth in the regulations of the Tennessee Department of Environment and Conservation.

2. All sanitary sewer facilities located in a flood hazard area shall be floodproofed to the regulatory flood protection elevation. All sewer facilities located below the regulatory flood protection elevation shall be designed to prevent infiltration of floodwaters into the sewer system and discharges from the system into floodwaters.

3. All public sanitary sewer systems shall be constructed utilizing materials that are A.S.T.M. and/or A.W.W.A. approved.

4-108.3 Individual Disposal System Requirements

If public sewer facilities are not available and individual disposal systems are proposed the individual disposal system, including the size of the septic tank and size of the tile fields or other secondary treatment device shall be approved by the county health department. The entire individual disposal system, including all drainage fields associated therewith, shall be located on the lot with the principal structure such system is to serve.

The planning commission may prohibit installation of sewage disposal facilities requiring soil absorption systems where such systems will not function due to high groundwater, flooding, or unsuitable soil characteristics. The planning commission may require that the subdivider note on the face of the plat and any deed of conveyance that soil absorption fields are prohibited in designated areas.

4-108.4 Design Criteria for Sanitary Sewers

Sanitary sewer systems shall be designed for the ultimate tributary population and shall be gravity flow systems where possible. Due consideration shall be given to any current zoning regulations and approved planning reports, where applicable. Sewer capacities shall be adequate to accommodate the anticipated maximum hourly quantity of sewage and industrial wastes, together with an adequate allowance for infiltration and other extraneous flow. Sewer connections to dwellings shall not be less than six (6) inches in diameter, short laterals and all other lines shall be eight (8) inches or larger in diameter, depending on anticipated flow.

4-109 Utility Easements

4-109.1 Permanent Easements
Perpetual unobstructed easements down all lot lines or additionally across lots, if deemed necessary by the planning commission, shall be provided for utilities (private or public). Such easements shall be at least ten (10) feet wide, except for across-lot easements that shall be at least twenty (20) feet wide. The subdivider shall take such actions as are necessary to ensure the coordination and continuation of utility easements established on adjacent properties with those proposed within his development. All easements shall be indicated on the plat.

4-109.2 Temporary Construction Easements
Temporary construction easements exceeding the width of permanent easements may be required as necessary until completion of any one project.

4-110 Electrical, Telephone and Television Service Lines

4-110.1 Underground Utilities
Following adoption of these regulations all electrical, telephone and television service lines located within any subdivision approved under authority of these regulations shall be placed underground.

4-110.2 Aboveground Utilities
Except as provided in subsection 4-110.3, it shall be unlawful to erect or construct permanent above ground utility equipment (see definition) within any subdivision approved under authority of these regulations.

4-110.3 Exceptions
The following exceptions shall apply to the application of this section.

1. Aboveground utility equipment may be installed, maintained and utilized by utility companies for a period not to exceed ninety (90) days in order to provide emergency utility services. This time limit may be extended, if warranted, by the planning commission.

2. Utility equipment utilized for vehicular or pedestrian traffic control purposes.

3. Utility equipment appurtenant to underground facilities, such as service-mounted, pedestal-mounted, or pad-mounted transformers, terminal boxes, meters and meter cabinets.

4. Temporary utility equipment utilized exclusively in conjunction with construction projects. Upon installation of permanent utility equipment the temporary equipment shall be removed.

5. Fire hydrants, fire plugs and other utility equipment utilized exclusively for fire-fighting purposes.
6. Telephone and television transmission towers.

7. Equipment installed by an electric utility which should not be installed underground for engineering or safety reasons.

8. Electrical transmission lines (see definition) and switch gear.

4-111 Public Uses

4-111.1 Plat to Provide for Public Uses
Whenever a tract to be subdivided includes a school, recreation use, a portion of a major public way, or other public use, as indicated on the land development plan and/or major street or road plan, or any portion thereof, such tract shall be suitably incorporated by the developer into his plat when first presented for review by the planning commission.

After proper determination of its necessity by the planning commission and the appropriate governmental representative(s) involved in the acquisition and use of such site, and after a determination has been made to acquire the site by the public agency, the site shall be suitably incorporated by the developer into the plat prior to final approval by the planning commission and recording of the plat.

4-111.2 Referral to the Governmental Agency Concerned
The planning commission shall refer any plat presented in accordance with Subsection 4-111.1, to the governmental agency concerned with acquisition of the land. The planning commission may propose alternate areas for such acquisition and shall allow the appropriate governmental agency thirty (30) days for reply.

Among the areas which the planning commission may propose for public acquisition, when the commission deems it appropriate and consistent with the policies and purposes set forth in these regulations, is any land within a floodway or floodway fringe determined according to the procedure outlined herein.

The acquiring agency's recommendation, if affirmative, shall include a map showing the boundaries and area of the parcel to be acquired and an estimate of the time required to complete the acquisition.

4-111.3 Notice to Property Owner
Upon receipt of an affirmative report, the planning commission shall notify the property owner and shall designate on all plats any areas proposed to be acquired by any governmental agency.

4-111.4 Duration of Land Reservation
The acquisition of land reserved by a governmental agency on the final plat shall be initiated within twenty-four (24) months of notification, in writing, from the owner
that he intends to develop the land. Such letter of intent shall be accompanied by a plat of a proposed development and a tentative schedule of construction. Failure on the part of the governmental agency to initiate acquisition of the property within the prescribed twenty-four (24) months shall result in the removal of the "reserved" designation from the property involved and freeing of the property for development in accordance with these regulations.

4-112 Preservation of Natural Features and Amenities

4-112.1 General
Existing features that would add value to residential development or to the area as a whole, such as trees, watercourses and falls, historic spots, and similar irreplaceable assets, shall be preserved in the design of the subdivision, as required by the planning commission. No change of grade of the land shall be undertaken nor shall any natural features (including trees) be removed or relocated until the planning commission has approved a conceptual preliminary plan, construction plans and a development agreement.

4-112.2 Preserving and Protecting Special Sites
It is shall be the policy of the planning commission to exercise due diligence in preserving and protecting all sites of paleontological, prehistoric, historic and/or archeological significance located upon any land area proposed for subdivision within the commission’s jurisdictional area. In exercising this authority, the commission shall receive and review all available information pertaining to all such sites. In its review of any subdivision found to contain a site of historic or prehistoric human activity such as, but not limited to, mounds, forts, earthworks, burial grounds, structures, villages, mines, caves and all locations that are or may be sources of paleontological remains the commission shall utilize all means available to it to achieve the maximum feasible protection for such site(s). In protecting these assets the following provisions shall be observed:

1. Such sites shall be protected from disturbance or destruction as required by Sections 39-17-101 through 39-17-104, Tennessee Code.

2. Upon discovery of any such site, the Tennessee Department of Environment and Conservation, Division of Archeology shall be notified as provided in Section 11-6-107 (d), Tennessee Code.

3. In the event that any cemetery or burial site is proposed for termination, the procedures set out in Sections 46-4-101 through 46-1-104, Tennessee Code, shall be observed.

4-113 Nonresidential Subdivisions
4-113.1 General
If a proposed subdivision includes land that is zoned for a commercial or industrial purpose, the layout of the subdivision with respect to such land shall make such provisions as the planning commission may require. A nonresidential subdivision shall be subject to all the requirements of these regulations; as well as such additional standards as set forth by the planning commission.

4-113.2 Standards
In addition to the principles and standards in these regulations which are appropriate to the planning of all subdivisions, the subdivider shall demonstrate to the satisfaction of the planning commission that the public way, parcel, and block pattern proposed is specifically adapted to the uses anticipated and takes into account other uses in the vicinity. The following principles and standards shall be observed:

1. proposed industrial parcels shall be suitable in area and dimensions to the types of nonresidential development anticipated;

2. special requirements may be imposed by the governing body with respect to any public way, curb, gutter, and sidewalk design and construction specifications;

3. every effort shall be made to protect adjacent residential areas from potential nuisances from the proposed nonresidential subdivision, including provision of extra depth in parcels backing on existing or potential residential development and provisions for permanently landscaped buffer strips, when necessary; and

4. public ways carrying nonresidential traffic, especially trucks, normally shall not be extended to the boundaries of adjacent existing or potential residential areas.
ARTICLE V: SPECIFICATIONS FOR DOCUMENTS TO BE SUBMITTED

5-101 Conceptual Plan

5-101.1 Site Analysis

Conceptual plans submitted to the planning commission are intended to provide an analysis of each site’s special features and the designers response to those features. Such plans are required for all major subdivisions, as they form the basis of the design process for greenway lands, house locations, street alignments, and lots lines.

A site analysis shall accompany each conceptual plan. As a minimum, the site analysis must include:

1. A contour map base at least upon topographical maps published by the U.S. Geological Survey;

2. The location of severely constraining elements such as steep slopes (over twenty (20) percent), wetlands, watercourses, intermittent streams and 100-year floodplains, and all existing rights-of-way and easements;

3. Soil boundaries as shown on USDA Natural Resources Conservation Service medium-intensity maps; and

4. The location of significant features such as woodlands, tree lines, open fields or meadows, scenic views into or out from the property, watershed divides and drainage ways, fences or stone walls, rock outcrops, and existing structures, roads, tracks and trails.

5-101.2 Features of Conceptual Plans

The Site Analysis shall form the basis for the conceptual plan, which shall show the tentative location of houses, streets, lot lines, and greenway lands in new residential subdivisions. The conceptual plan shall, as a minimum, show:

1. A scale drawing of the property indicating the size of the original tract(s) being subdivided and the names of the owners of adjoining property;

2. Notation of any existing legal rights-of-way, easements, or other encumbrances affecting the property;

3. A contour base map at least on topographical maps published by the U.S. Geological Survey, with contours shown at intervals no greater than five (5) feet, extended into adjacent properties;

4. The location of all “Land Unsuitable for Development” as specified in Subsection 4-101.401, of these regulations.
5. the location of (and proposed protective measures for) all watercourses and intermittent streams;

6. the general location of proposed streets and building lots;

7. in any instance where septic sewage disposal is anticipated, soil boundaries as shown on USDA Natural Resources Conservation Service medium-intensity maps;

8. the location of significant features such as woodlands, tree lines, open fields or meadows and scenic views;

9. name of owner; name of plat designer; and zoning classification.

10. vicinity map of property, date and approximate north point;

11. proposed extension(s) of water and/or sanitary sewer service to the property along with the proposed routing of such within the subdivision; and

12. preliminary storm drainage design noting approximate volumes, direction of flows and location of proposed detention or retention areas.

5-101.3 The Four-Step Design Process
Each conceptual plan shall follow a four-step design process, as described below. When the conceptual plan is submitted, applicants shall be prepared to demonstrate to the planning commission that these four design steps were followed by their site designers in determining the layout of their proposed streets, house lots, and greenway lands.

1. Designating Conservation Lands
   During the first step, all conservation lands shall be identified, using the Site Analysis. Conservation lands consist of wetlands, floodplains, slopes over twenty (20) percent, and all other portions of the site defined as “unsuitable for development” in Subsection 4-101.401, (Land Unsuitable for Development).

2. Location of House Sites
   During the second step, potential house sites are tentatively located. Because the proposed location of houses upon each lot represents a significant decision with potential impacts on the ability of the development to meet the evaluation criteria contained in Subsection 4-102.102, (Evaluation Criteria), subdivision applicants shall identify tentative house sites on the conceptualual plan and actual house sites on the final plat. House sites should generally be located no closer than one-hundred (100) feet from conservation lands.
3. **Street and Lot Layout**

The third step consists of aligning proposed streets to provide vehicular access to each house in the most reasonable and economic way. When lots and access streets are laid out, they shall be located in such a way as to avoid, or at least minimize, adverse impacts on conservation lands. To the greatest extent practicable, wetland crossings and streets traversing existing slopes over fifteen (15) percent shall be strongly discouraged. Street connections shall generally be encouraged to minimize the number of new cul-de-sacs to be maintained by the city and to facilitate easy access to and from homes in different parts of the property (or on adjoining parcels). Where cul-de-sacs are necessary, those serving six (6) or fewer homes may be designed with “hammer-heads” facilitating three-point turns.

The city generally encourages creation of single-loaded residential access streets in order that the maximum number of homes in new developments may enjoy views of open space.

Note that in situations where more formal “neo-traditional” or village-type layouts are proposed, Steps Two and Three may be reversed, so that the location of house sites follows the location of streets and squares.

4. **Lot Lines**

The fourth step is simply to draw in the lot lines (where applicable). These are generally drawn midway between the house locations and may include L-shaped “flag lots”.

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5-102 Preliminary Plat

5-102.1 **General**

The preliminary plat shall be prepared by a surveyor, landscape architect, architect, land planner, or engineer engaged in the practice of civil engineering, at a convenient scale no smaller than one hundred (100) feet to an inch. The sheets shall be numbered in sequence if more than one sheet is used.

5-102.2 **Features**

The preliminary plat shall include:

1. the location of the property to be subdivided with respect to surrounding properties and public ways;

2. the names of all adjoining property owners of record, or the names of adjoining developments;

3. the names of adjoining public ways;

4. the location and dimensions of all boundary lines of the property, figured to the nearest one hundredth (1/100) of a foot;
5. the location of existing public ways, easements, water bodies, wetlands, streams, and other pertinent features, such as swamps, railroads, buildings, parks, cemeteries, drainage ditches, and bridges, as determined by the planning commission;

6. the location and width of all existing and proposed easements. alleys, and other public ways, and building setback lines;

7. the location, dimension, and area of all proposed or existing lots;

8. within proposed condominium developments, the position of all existing or proposed buildings;

9. the location and dimension of all “conservation lands” and any other property proposed to be set aside for park or playground use or other public or private reservation, with designation of the purpose thereof, and conditions, if any, of the dedication or reservation;

10. the limits of floodway and floodplain and the associated one-hundred year regulatory flood elevation and regulatory flood protection elevation, of two (2) feet above the elevation of the one-hundred year regulatory flood.

11. the name and address of the owner(s) of land to be subdivided, the subdivider if other than the owner, and the land surveyor or other person preparing the plat;

12. the date of the plat, approximate true north point, scale, and title of the subdivision;

13. sufficient data to determine readily the general location, bearing, and length of all lines necessary to reproduce such lines within the area to be subdivided;

14. name of the subdivision and all new public ways, as approved by the planning commission;

15. the functional classification (See Section 4-104, (Functional Design Criteria), of all proposed streets along with designation of construction routes as required by Subsection 4-103.209, (Designation of Construction Routes);

16. the zoning classification of all lots, as well as an indication of all uses, other than residential, proposed by the subdivider;
17. the distance and bearing of one of the corners of the boundary of the subdivision to the nearest intersection of an existing public street and to the original corner of the original survey of which it is a part;

18. key map showing relation of the subdivision to all public ways, railroads, and water courses in all directions to a distance of at least one-half (1/2) mile (suggested scale: one (1) inch to one thousand (1,000) feet);

19. contours at vertical intervals of not more than two (2) feet where the proposed subdivision has an average slope of five (5) percent or less, or at vertical intervals of not more than five (5) feet where the average slope exceeds five (5) percent (contours to be field surveyed or taken from map information acceptable to the planning commission);

20. map and parcel numbers as recorded on the land tax maps of the county;

21. The following notations:
   a. explanation of drainage easements;
   b. explanation of site easements;
   c. explanation of reservations; and
   d. for any lot where public sewer or water systems are not available, the following:
      i. areas to be used for sewage disposal and their percolation results, or if the planning commission desires, any other acceptable data to show that the site can be served effectively by septic tanks;
      ii. water wells (existing and proposed); and
      iii. rock outcroppings, marshes, springs, sinkholes, natural storm drains, and other outstanding topographical features;

22. draft of proposed restrictive covenants, if any, to be imposed and designation of areas subject to special restrictions; and

23. a form for endorsement of planning commission approval of the preliminary plat that shall read as follows:
5-103 Construction Plans

5-103.1 General
Construction plans drawn at a scale of no more than fifty (50) feet to an inch shall be prepared for all improvements required by these regulations. Approval of construction plans must precede any clearing, grading, or site construction and no action by the planning commission tentatively approving a preliminary plat shall become final until construction plans have been approved. All construction plans shall be prepared and stamped by a Tennessee licensed engineer engaged in the practice of civil engineering. The territory included within construction plans shall correspond to that included within the proposed preliminary plat.

5-103.2 Features
The following shall be shown on the construction plans:

1. Profiles showing existing and proposed elevations along centerlines of all public ways.

2. Where a proposed road intersects an existing public way or ways, the elevation along the centerline of the existing public way within one hundred (100) feet of the intersection.

3. Approximate radii of all curves, lengths of tangents, and central angles on all public ways.

4. Stationing of all proposed public ways. Horizontal stationing shall be at fifty (50) foot intervals and cross-sectional elevations shall be to an accuracy of one tenth (1/10) foot vertical on a line at right angles to the center line of the public way at the following points: the center line of the public way, each property line, and points twenty-five (25) feet inside each property line.
5. Plans and profiles indicating the locations and typical cross-section of public way pavements, including curbs and gutters, sidewalks, drainage easements, rights-of-way, manholes, and catch basins.

6. The location of public way signs.

7. The location, size, and invert elevations of existing and proposed sanitary sewers, stormwater drains, and fire hydrants, showing connection to any existing or proposed utility system.

8. Location and size of all water, gas, or other underground utilities or structures.

9. Location, size, elevation, and other appropriate description of any existing facilities or utilities, including but not limited to, existing public ways, sewers, drains, water mains, easements, water bodies, streams, and other pertinent features, such as swamps, railroads, buildings, and features noted on the land development plan or major street or road plan.

10. The water elevations of adjoining lakes or streams and the approximate high- and low water elevations of such lakes or streams shall be shown. All elevations shall be referred to the U.S.G.S. datum plane.

11. If the subdivision borders a lake, river, or stream, the distance and bearings of a meander line established not less than twenty (20) feet back from the ordinary high-water mark of such waterways.

12. The developer shall submit a storm water drainage report prepared by a Tennessee registered engineer. The developer shall also prepare for any portion of a subdivision containing a flood prone area, or an area known to be subject to flooding, information necessary for the planning commission to determine the suitability of the particular site for the proposed development, as follows:

   (a) plans drawn to scale showing the nature, location, dimensions, and elevation of any part of the subdivision within a flood prone area; existing or proposed structures or building sites, fill, storage of materials and floodproofing measures, as specified in these regulations; and the relationship of the above to the location of the stream channel, floodway, floodway fringe, the regulatory flood elevation, and the regulatory flood protection elevation;

   (b) a typical valley cross-section showing the channel of the stream, elevation of land areas adjoining each side of the channel, cross-sectional areas to be occupied by the proposed development, and high-water information, if required by the planning commission;
(c) surface-view plans showing elevations and contours of the ground;
(d) pertinent structures, fill, or elevations of public ways;
(e) water supply, sanitary facilities, soil types, and other pertinent information, as required by the planning commission; and
(f) specifications for building construction and materials, flood proofing, filling, dredging, grading, storage of materials, water supply, and sanitary facilities.

13. Contours at the same vertical interval as the preliminary plat.

14. In addition to the other requirements of this section, construction plans for condominium subdivisions shall contain "as built" drawings of all underground utilities, regardless of proposed ownership, and the construction design of all public facilities which are proposed for dedication to the governing body.

15. A notation of construction plans approval by appropriate persons or governmental representatives.

16. Title, name, address, stamp and signature of engineer who prepared the plans.

17. Date of plans, including any revision dates.

18. An erosion and sediment control plan shall be prepared for each development submitting construction plans. Such plan shall demonstrate the manner in which the general principals for erosion and sediment control set out in Subsection 4-102.603, (Erosion and Sediment Control) are to be implemented on the site covered by the construction plans.

5-103.3 Storm Water Report
A comprehensive storm water report shall accompany the construction plans. As a minimum this report shall include the following:

1. Maps showing pre-construction and post-construction drainage areas (basins) and sub-areas (sub-basins) including those located within the project site and area up-stream that is off-site. At least one separate drainage sub-area shall be identified for each existing and proposed drainage structure, culvert, ditch or swale.

2. The permanent hydrologic data for each sub-area including total land area, appropriate runoff coefficient, time of concentrations as calculated using the SCS-TR-55 method or approved equal, total runoff for the two (2), five (5),
twenty-five (25) and one-hundred (100) year storm events for each area using the SCS-TR-55 method or rational method.

3. Hydraulic capacity of existing and proposed storm water conveyance structures and channel as located on the site and off-site (two structures downstream). Each structure or channel shall be capable of passing the twenty-five (25) year storm event without surcharge. Each structure and/or channel shall be designed to not cause flooding of any structure during the one-hundred (100) year event.

4. Net pre-construction and post construction runoff exiting the site resulting from the two (2), five (5), twenty-five (25) and one-hundred (100) year storm events using the SCS-TR-55 method or rational method.

5. Detention pond inflow/outflow calculations for the two (2), five (5), twenty-five (25) and one-hundred (100) year storm events.

6. Erosion control calculations for each channel based on the two (2) and one-hundred (100) year events.

7. Erosion control calculations for slopes having a grade of twenty (20) percent or greater and a length longer than twenty (20) feet for the two (2) year event.

8. Summary of BMP measures taken to enhance storm water quality.

9. Compliance with all regulations set forth in these regulations.

5-103.4 Content of Development Agreement

The development agreement required by Subsection 2-104.4, (Preparation of Development Agreement) shall be sufficient to assure construction of the following:

1. All off site improvements required to serve the development.

2. All on site improvements located within the section of the project contained within the construction plans, including improvements that are required to serve future portions of the development not contained within the plans.

3. All improvements required to serve the lots shown on the plan that are not constructed and offered for public acceptance prior to or concurrently with submittal of final plats covering such lots.

5-104 Final Subdivision Plat

5-104.1 General

The final subdivision plat shall be prepared on transparent drafting material at a scale no smaller than fifty (50) feet to the inch on sheets of county register plat
book size. The use of an appropriate smaller scale may be permitted for lots larger than two (2) acres. When more than one (1) sheet is required, an index sheet of the same size shall be filed showing the entire subdivision with the sheets numbered in sequence.

5-104.2 Features
The final plat shall include:

1. The location of the property to be subdivided with respect to surrounding property(s) and public ways.

2. The names of all adjoining property owners of record or the names of adjoining developments.

3. The names of adjoining public ways.

4. The exact boundary lines of the tract, determined by a field survey, showing angles to the nearest minute and distance to the nearest one hundredth (1/100) of a foot. The adjusted accuracy of the survey shall meet or exceed the standards set forth in Title 62, Chapter 18, of the Tennessee Code, for a Category II (Suburban Subdivision). The survey shall be tied into the Tennessee Grid Coordinate System.

   1. A distance and bearing shall be provided which will link a point on the boundary of the subdivision to a monument in the right-of-way of the nearest prominent public way intersection.

   5. The location of all public ways, easements, water bodies, streams or rivers, railroads, parks, and cemeteries.

6. The limits of floodway and floodway fringe areas and the regulatory flood elevation and regulatory flood protection elevation; as determined by the planning commission.

7. The location and width of all easements and rights-of-way for public ways, as well as the building setback lines on all lots.

8. The location, dimensions, and area of all lots. All dimensions shall be field run to the nearest one hundredth (1/100) of a foot and angles to the nearest minute. Lot areas shall be shown to the nearest tenth (1/10) of a square foot.

9. The location, area, and dimensions, to the accuracy set forth in Item 8, above, of all property to be set aside for park or playground use or other public or private reservation, with a designation of the purpose thereof, and conditions, if any, of the dedication or reservation.
10. The final plat of a condominium subdivision shall contain, in addition to the
other information required by this section:

(a) an "as-built" building location and boundary survey, to "American
Land Title Association" or other similar standards, showing complete
and accurate dimensions and angles of the boundary of the parcel(s)
on which the condominium is located, together with exterior
dimensions and locations relative to those boundaries of the
building(s) which constitute the condominium subdivision;

(b) some sort of datum plane or other suitable vertical location reference.
In meeting these requirements, it is only necessary that the upper
and lower limits of each level of each condominium unit be identified
specifically in relation to the vertical reference, (e.g., an appropriate
permanent monument or other acceptable reference datum or fixed
known point). Elaborate exterior elevations and architectural detail
are not necessary to satisfy this requirement; and

(c) copies of deed covenants, the charter and by-laws of any
homeowners’ association established; and special information which
the planning commission may require to protect the rights of future
owners of the condominium or the public in general.

11. The name and address of the owner(s) of the land being subdivided.

12. The name and address of the subdivider if other than the owner.

13. The name and stamp of the land surveyor or other person preparing the
plat.

14. The date of the plat, approximate true north point, scale, and title of the
subdivision.

15. Sufficient data to determine readily the location, bearing, and length of all
lines necessary to reproduce such lines upon the ground. This shall include
the radius, central angle, and tangent distance for the centerline of the
curved public ways and curved property lines that are not the boundary of
curved public ways. The location of all monuments and pins shall be
indicated on the plat.

16. The names of all public ways.

17. The zoning classification of all lots as well as an indication of uses other
than residential proposed by the subdivider.

18. The total acreage within the subdivision.
19. Lot numbers and street numbers.

20. The line size and location of water and sewer facilities.

21. The location of all fire hydrants.

22. The diameter and width of all driveway culverts.

23. For any lot where a public sewer or water system is not available, the following shall be shown:

   (a) areas to be used for sewage disposal; and

   (b) water wells (existing and proposed).

24. Applicable certifications in the form reproduced in this section shall appear upon the final plat. All required certificates shall bear the signature of the approving or authorizing agent at the time of application for final plat approval, except that the form for endorsement of the planning commission’s approval for recording shall appear unsigned at the time of application for approval.

25. Commitment notes may be printed or stamped on the final plat reflecting location and dimension of easements, or extent of other agreements or factual data, in lieu of drafted illustration, when applicable, and as approved by the planning commission.

5-104.3 Plat Certificates

1. Certification showing that the applicant is the landowner; that he offers for dedication public ways, rights-of-way, and any site for public use; and that he consents to the subdivision plan. Certification showing that the applicant is the landowner; that he offers for dedication public ways, rights-of-way, and any site for public use; and that he consents to the subdivision plan.

   CERTIFICATE 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.

   ____________________________  ____________________________
2. Certification by a registered land surveyor as to the accuracy of the land survey.

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 Portland Municipal-Regional Planning Commission and that the monuments have been placed as shown hereon.

Date Registered Surveyor

3. Certification by appropriate governmental or quasi-governmental official(s) that sewage disposal and/or water system(s) has/have been installed.

CERTIFICATE OF APPROVAL OF UTILITY SYSTEMS
I hereby certify that the following utility systems outlined or indicated hereon have been installed in accordance with current local and/or state government requirements.

Water System

Date Authorized Signature

Sewer System (if applicable)

Date Authorized Signature

CERTIFICATE OF GENERAL APPROVAL FOR INSTALLATION OF SUBSURFACE SEWAGE DISPOSAL WITH RESTRICTIONS
General approval is hereby granted for the proposed subdivision hereon as being suitable for subsurface sewage disposal with the listed and/or attached restrictions. Before the initiation of construction, the local health authority shall approve the location of the house or other structure and plans for the subsurface sewage disposal system.

Date Local Health Authority
Lot(s) #____________________, shall not have a residence with more than __________________ bedrooms, unless, otherwise, approved by the local health authority.

CERTIFICATE OF ACKNOWLEDGMENT OF UTILITY BOND
I hereby certify: (1) that utilities have been installed in an acceptable manner and according to specifications; or (2) that a security bond in the amount of $_______, has been posted with the City of Portland, Tennessee, to assure completion of all required utility improvements in case of default.

__________________________________________________________
Date Name & Title

(Only to be used in the White House Utility District service area)
CERTIFICATE OF APPROVAL OF WATER UTILITY SYSTEM

I hereby certify that the water system improvements outlined or indicated hereon have been installed in accordance with current local and/or state government requirements; or a bond or other form of surety has been filed with White House Utility District to guarantee installation of the water system improvements.

Water System

__________________________________________________________
Date Authorized Signature

4. Certification on the final plat by the appropriate governmental representative that the subdivider has complied with one of the following:

(a) installation of all public way improvements in accordance with the requirements of these regulations; or

(b) in lieu of compliance with subdivision improvement requirements, certification that surety has been posted by the subdivider in an amount approved by the appropriate governmental representative to guarantee completion of all improvements.

CERTIFICATE OF APPROVAL OF PUBLIC WAYS OR BOND POSTING
I hereby certify: (1) that all designated public ways on this final subdivision plat have been installed in an acceptable manner and according to the specifications of the Portland Subdivision Regulations; or (2) that a performance bond or other surety has been posted with the planning commission to guarantee completion of all required improvements in case
of default.

Date

Appropriate Governmental Representative

5. For a subdivision containing common open space or facilities, certification on the final plat of dedication of common areas in accordance with procedures established in these regulations.

CERTIFICATION OF COMMON AREAS DEDICATION

in recording this plat has designated certain areas of land shown hereon as common areas intended for use by the homeowners within (Name of Subdivision), for recreation and related activities. The above-described areas are not dedicated for use by the general public, but are dedicated to the common use of the homeowners within the named subdivision.

"Declaration of Covenants and Restrictions", applicable to the above named subdivision, is hereby incorporated and made a part of this plat.

Date

Owner

6. Certification on the final plat of planning commission approval for recording of the plat.

CERTIFICATE FOR APPROVAL FOR RECORDING

I hereby certify that the subdivision plat shown hereon has been found to comply with the Subdivision Regulations, for Portland, 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 County Registrar.

Date

Secretary, Planning Commission

Void, unless recorded by:

Date

7. Certification by appropriate governmental official(s) that stormwater utility system(s) has/have been installed.

CERTIFICATE FOR APPROVAL OF STORMWATER UTILITY SYSTEMS

I hereby certify that general drainage plans have been submitted and approved for this subdivision and that all required temporary and
permanent erosion control, stabilization, and other water quality and water related requirements have been designed in a manner which meets the City of Portland Subdivisions and Drainage Requirements.

Date

Authorized Signature

8. **Notation of Possible Flooding** -- If any portion of the land being subdivided is subject to flooding as defined in these regulations, a notation shall be made on the plat that development or modification of the land within any one-hundred year floodplain boundary delineated within the plat is prohibited. Development within known flood areas delineated on the plat shall be done in such a manner that any structure shall be protected against flood damage to at least two (2) feet above the known flood elevation, which elevation shall be stated in the notation. Any additional restrictions imposed by the planning commission upon development within flood prone areas also shall be indicated on the plat.

9. **Notation of Health Restrictions** -- Any modifications or limitations that may be imposed by the state or county health department shall be clearly indicated on the plat.

10. **Notation of Private Restrictions** -- Private restrictions and trusteeships and their periods of existence shall be indicated on the plat. Should these restrictions or trusteeships be of such length as to make their lettering impracticable and thus necessitate the preparation of a separate instrument, reference to such instrument shall be made on the plat or, if the restrictions and trusteeships are of record, the plat shall note where they are recorded.

**5-101 Form of Dedication Offer**

The form of the offer of irrevocable dedication, required by Subsection 2-105.1, Item 5, of these regulations, shall be as reproduced in this section and approved by the city attorney. The form may be modified as required by the city attorney.

Copies of this form may be obtained at the office of the Enforcing Officer.
FORM FOR OFFER OF IRREVOCABLE DEDICATION

AGREEMENT made this day ____ of __________________, 20__, by and between ________________________, a ________, having its office and place of business at ____________________________, Tennessee, hereinafter designated as the "local government".

WHEREAS, the Portland Municipal-Regional Planning Commission is in the process of approving a subdivision plat, entitled, ____________________________, dated, ____________________________, 20__, and made by ____________________________; and

WHEREAS, said map designates certain public improvements consisting of ____________________________ to be dedicated to the City of Portland, free and clear of all encumbrances and liens, pursuant to the requirements of the planning commission and the local government; and

WHEREAS, the developer, simultaneously herewith, shall post a performance bond with the city for the construction, maintenance, and dedication of said improvements, if required;

WHEREAS, the developer is desirous of offering for dedication the said improvements and land to the city more particularly described in Schedule ____________ attached hereto;

WHEREAS, the developer has delivered deeds of conveyance to the city for the said land and improvements as described herein;

NOW, THEREFORE, in consideration of the sum of one dollar ($1.00) lawful money of the United States paid by the city to the developer and other good and valuable consideration, it is mutually AGREED as follows:

A. The developer herewith delivers to the city deeds of conveyance for the premises described in Schedule ____________, attached hereto, said delivery being a formal offer of dedication to the city until the acceptance or rejection of such offer of dedication by the city.

B. The developer agrees that said formal offer of dedication is irrevocable and can be accepted by the city at any time.

C. The developer agrees to complete the construction and maintenance of the land and improvements pursuant to the development agreement, performance bond and the requirements of the Portland Municipal-Regional Planning Commission and any ordinances, regulations, requirements, covenants, and agreements that may be imposed by the city with respect thereto and, upon acceptance by the city of the offer of dedication, furnish to the city a sworn statement certifying that the premises are free and clear of all liens and encumbrances and shall furnish to the city a check for all necessary fees and taxes to record the deeds heretofore delivered.

D. That this irrevocable offer of dedication shall run with land and shall be binding on all assigns, guarantees, successors, or heirs of the developer.
As amended February 12, 2019

Date

Developer or Designated Principal

ATTEST:

FOR THE CITY OF: ________________________________

BY: ________________________________

Acknowledgment: COPARTNERSHIP

STATE OF TENNESSEE

(COUNTY OF ________________________________)

SS: ________________________________

On this____ of ________________________________, 20__, before me personally appeared ______
______________________________, to me known and known to me to be one of the
firm ________________________________, described in and who executed the foregoing
instrument, and he thereupon acknowledged to me that he executed such instrument as
and for the act and deed of said firm.

______________________________
Designated Principal

STATE OF TENNESSEE

(COUNTY OF ________________________________)

SS: ________________________________

On this____ of ________________________________, 20__, before me personally appeared ______
______________________________, to me known and known to me to be one of the
firm ________________________________, described in and who executed the foregoing
instrument, and he thereupon acknowledged to me that he executed such instrument as
and for the act and deed of said firm.

______________________________
Designated Principal

CORPORATE SEAL

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ARTICLE VI: DEFINITIONS

6-101 Usage

A. For the purpose of these regulations certain numbers, abbreviations, terms, and words used herein shall be used, interpreted, and defined as set forth in this article.

B. Unless the context clearly indicates to the contrary, words used in the present tense include the future tense and words used in the plural include the singular; the word "herein" means "in these regulations"; and the word "regulations" means "these regulations".

C. A "person" includes a corporation, a partnership, and an unincorporated association of persons, such as a club; "shall" is always mandatory; a "building" or "structure" includes any part thereof; "used" or "occupied", as applies to any land or building, shall be construed to include "intended, arranged, or designed to be used or occupied".

6-102 Words and Terms Defined

Aboveground -- Visible from the surface of the earth.

Alley -- A public or private right-of-way primarily designed to serve as secondary access to the side or rear of those properties whose principal frontage is on some other street.

Applicant -- The owner of land proposed to be subdivided or his authorized representative. Consent shall be required from the legal owner of the premise(s).

Architect -- An architect or landscape architect certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Title 62, Chapter 2, Tennessee Code, to practice in Tennessee.

Arterial Street or Road -- A major public way intended to move traffic to and from major industrial areas or a route for traffic between communities or large areas and which has an average daily traffic count in excess of three thousand (3,000).

Block -- A tract of land bounded by public ways or by public parks, cemeteries, railroad rights-of-way, or shorelines or waterways or a combination of such.

Bond -- An instrument with a sum of money fixed as a penalty, binding the party(s) to pay the same: conditioned, however, that the payment of the penalty may be avoided by the performance by some one or more of the parties of certain acts. As used in these regulations, the term bond may include a variety of financial instruments including insurance bonds, letters-of-credit, escrow accounts and similar sureties. Such surety instruments shall comply with all statutory requirements and shall be satisfactory to legal counsel as to form, sufficiency, and manner of execution, as set forth in these regulations. The period within which required improvements must be completed shall be specified in
the resolution approving the final subdivision plat and shall be incorporated in the surety instrument(s).

**Bond, Maintenance-warranty** -- A bond established to assure a “continuing warranty” during a specified time period following completion and dedication of required improvements. The purpose of such bond being assurance of the “implied warranty” associated with such improvements.

**Bond, Performance** -- A bond established to assure specific performance of the “Development Agreement” established by these regulations. The amount and form of such bond shall in all regards be sufficient to guarantee to the governing body the specific performance of the “Development Agreement” including satisfactory construction, installation, and dedication, free and clear of any encumbrances, of the required improvements.

**Bond, Reclamation** -- A bond established for purposes of assuring the ability of the City to secure and stabilize a development site in the event of default by the developer and/or contractor. A Reclamation Bond is intended to prevent soil erosion, uncontrolled drainage or other conditions associated with an abandoned development site from harming either public streets and other facilities or nearby private property.

**Building** -- Any structure built for the support, shelter, or enclosure of persons, animals, chattels, or movable property of any kind; the term includes a manufactured home.

**Building Envelope** -- Land occupied or intended to be occupied by a building and interrelated buildings, together with all open space required to meet the provisions of any applicable zoning ordinance, which is located on a lot that has been lawfully created and meets all criteria of the local government for the intended use.

**Capital Improvements Program** - A proposed schedule of future projects, listed in order of construction priority, together with cost estimates and the anticipated means of financing each project. All major projects requiring the expenditure of public funds, over and above the annual local government operating expenses, for the purchase, construction, or replacement of the physical assets of the community are included.

**Cash Escrow** -- As used in these regulations the term “cash escrow” can refer to two types of performance guarantees. A true cash escrow is cash that is beyond the reach of the persons who are guaranteeing performance of specific work subject to an escrow agreement. A second form is an irrevocable standby letter of credit as defined herein below.

**Collector Street or Road** -- A major public way intended to move traffic from local streets to arterial routes. Collector routes serve a neighborhood or large subdivision(s), and normally have an average daily traffic count ranging from one thousand and one (1,001) to three thousand (3,000).
**Common Elements** -- Any portion of a condominium which is held in common ownership by owners of condominium units. These elements may be either general common elements or limited common elements, as defined below.

**General Common Elements** -- Any of the common elements of a condominium which are held in joint ownership by all owners of the condominium.

**Limited Common Elements** -- Any of the common elements of a condominium which are reserved for use by the owner of a particular condominium unit or group of units.

**Conceptual Preliminary Plan** – The preliminary written and graphic documents described in these regulations, that indicate in a conceptual form the proposed pattern of open spaces, streets and building lots within a subdivision.

**Condominium** -- A form of ownership of less than the whole of a building or system of buildings under the provisions of Title 66, Chapter 27, Tennessee Code, which provides the mechanics and facilities for formal filing and recordation of divided interests in real property, whether the division is vertical or horizontal.

**Condominium Subdivision** -- The subdivision of property through the establishment of a condominium or horizontal property regime.

**Condominium Unit** -- A space conveyed by separate title and located within a condominium structure.

**Conservation Land** -- Any parcel or area of undeveloped land conserved in its natural state for perpetuity through deeds or other legal means.

**Construction Plan** -- The maps or drawings accompanying a subdivision plat and showing the specific location and design of improvements to be installed in the subdivision in accordance with requirements of the planning commission.

**Contractor** -- An individual, firm, or corporation with whom an owner or authorized agent has executed a work agreement.

**County Environmentalist** -- An agent designated to administer local and/or state health regulations.

**Cul-de-sac** -- A minor street having only one outlet and having an appropriate terminal for the safe and convenient reversal of traffic movement; definition includes: dead-end, turn-around, or turn-about.

**Design Specifications** -- Written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship required for a project intended for local government ownership or maintenance.
Developer -- The owner of land proposed to be subdivided or his authorized representative.

Dwelling Unit -- A room, or rooms connected together constituting a separate, independent housekeeping establishment for owner occupancy, rental or lease on a daily, weekly, monthly, or longer basis; physically separated from any other room(s) or dwelling units which may be in the same structure; and containing independent cooking and sleeping facilities.

Easement -- Authorization by a property owner for the use by another, for a specified purpose, of any designated part of his property.

Electrical and Communication Service Lines -- Electrical and communication systems serving limited geographic areas of residential neighborhoods and providing service directly to a residence or group of residences and not designed to provide service more than one-half mile or transmit service for street lighting.

Electrical Transmission Lines -- Transmission lines are electrical power lines or networks designed to transmit electrical power for regional use.

Enforcing Officer -- Such person designated by the chief executive officer to be responsible for enforcing the provisions of these regulations.

Engineer -- An engineer certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Title 62, Chapter 2, Tennessee Code, to practice in Tennessee.

Equal Degree of Encroachment -- The delineation of floodway limits so that floodplain lands on both sides of a stream are capable of conveying a proportionate share of flood flows. This is determined by considering the hydraulic conveyance of the floodplain along both sides of a stream for a significant reach.

Escrow -- A fiduciary agreement with the local government in lieu of actual performance and intended to assure performance. An escrow account may be provided as a bond subject to agreement of the governing body.

External Subdivision Boundary -- All points along the periphery of a subdivision.

Final Subdivision Plat -- The final map or drawing and accompanying materials, described in these regulations, on which the subdivider’s plan of the subdivision is presented to the planning commission for approval and which, if approved by the commission, is recorded with the county register of deeds.

Flood -- A temporary rise in stream level that results in inundation of areas not ordinarily covered by water.
**Flood Frequency** -- The statistically determined average for how often a specific flood level or discharge may be equaled or exceeded.

**Flood Hazard Boundary Map** -- An official map on which the boundaries of the floodplain areas having special flood hazards have been delineated.

**Flood Hazard or Flood Prone Area** -- The maximum area of the floodplain that, on the average, is likely to be flooded once every one hundred (100) years (i.e., that has a one (1) percent chance of being flooded in any year).

**Floodplain** -- A land area adjoining a river, stream, watercourse, bay, or lake which is likely to be flooded. It is composed of a floodway and floodway fringe.

**Floodplain Management Program** -- The overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, building code regulations, health regulations, zoning ordinance regulations, and these subdivision regulations.

**Flood Profile** -- A graph showing the water surface elevation or height or a particular flood event for any point along the longitudinal course of a stream. The flood profile is determined through the use of standard open-channel hydraulic calculations.

**Floodproofing** -- Any combination of structural and nonstructural additions, changes, or adjustments to properties and structures which reduce or eliminate potential flood damage to lands; water facilities, sanitary facilities, and other utilities; structures; and contents of buildings; and which prevent pollution of floodwaters from such natural or man-made sources.

**Floodway** -- The stream channel and adjacent overbank areas required to carry and safely discharge the 100-year flood without increasing flood levels more than one (1) foot above natural flood levels.

**Floodway Encroachment Limits** -- The lines marking the limits of floodways on official federal, state, and local floodplain maps.

**Floodway Fringe** -- The area adjoining a watercourse which, although not lying within a floodway, has been or may hereafter be covered by a 100-year flood.

**Frontage** -- That side of a lot abutting a public way ordinarily regarded as the front of the lot.

**Governmental Agency** -- Any public body other than the governing body.

**Governing Body** -- The chief legislative body of any government.
**Governmental Representative** -- An outside person or designated local official or employee authorized to act on behalf of the governing body in making determinations regarding legal, public works, planning, community development, or other public business.

**Grade** -- The slope of a public way specified in percentage terms.

**Highway, Limited Access** -- A freeway or expressway providing a trafficway for through traffic, in respect to which owners or occupants of abutting property(s) or lands and other persons have no legal right of access to or from the trafficway, except at such points and in such manner as may be determined by the public authority having jurisdiction over such trafficway.

**Horizontal Property Act** -- "The Tennessee Horizontal Property Act", as codified in Title 66, Chapter 2, Tennessee Code.

**Individual Sewage Disposal System** -- A septic tank, seepage tile sewage disposal system, or any other sewage treatment device other than a public treatment system approved by the appropriate governmental representative.

**Internal Subdivision Boundary** -- All points within a subdivision which do not constitute external boundaries.

**Irrevocable Standby Letter of Credit** -- An irrevocable standby letter of credit is a commitment from a financial institution to pay an agreed sum of money to a third party in compliance with the terms of the letter.

**Joint Ownership** -- Joint ownership among persons shall be construed as the same owner for the purpose of imposing subdivision regulations.

**Jurisdictional Area** -- Planning boundary(s) established in keeping with Sections 13-3-102, 13-3-201, and 13-3-301, Tennessee Code.

**Land Development Activity** -- The physical extension and/or construction of urban land uses. Development activities include: subdivision of land; construction or alteration of structures, roads, utilities, and other facilities; installation of septic systems; grading; deposit of refuse, debris, or other fill materials; and clearing of natural vegetative cover (with the exception of agricultural activities).

**Land Development Plan** -- The official statement of the planning commission which sets forth major policies concerning future development of the jurisdictional area and meeting the provisions set forth in Sections 13-3-301, 13-3-302, and 13-4-102, Tennessee Code.

**Land Surveyor** -- A land surveyor certified and registered by the State Board of Land Survey Examiners pursuant to Title 62, Chapter 18, Tennessee Code, to practice in Tennessee.
Legal Counsel -- The person designated by the governing body to provide legal assistance for the administration of these and other regulations.

Lot - A tract, plot, or portion of a subdivision or parcel of land intended as a unit for the purpose, whether immediate or future, of transfer of ownership, or for building development.

Lot, Corner -- A lot situated at the intersection of two (2) public ways.

Lot Improvement -- Any building, structure, place, work of art, or other object or improvement of the land on which such items are situated constituting a physical betterment of real property, or any part of such betterment.

Major Street or Road -- A public way that is classified as a collector or arterial public way according to these regulations or by the major street or road plan for the jurisdictional area.

Major Street or Road Plan -- The plan adopted by the planning commission, pursuant to Section 13-3-402 and 13-4-302, Tennessee Code, showing, among other things, "the general location, character, and extent of public ways.... (and) the removal, relocation, extension, widening, narrowing, vacating, abandonment or change of use of existing public ways...."

Major Subdivision -- All subdivisions not classified as minor subdivisions, including but not limited to subdivisions of five (5) or more lots, or subdivisions of any size requiring any new or improved road, the extension of government facilities, or the creation of any public improvements, or containing any flood prone area.

Minor Street or Road -- A public way that is not classified as an arterial or collector.

Minor Subdivision -- Any subdivision containing less than five (5) lots fronting on an existing public way; not involving any new or improved public way, the extension of public facilities, or the creation of any public improvements, and not in conflict with any provision of the adopted general plan, major street or road plan, zoning ordinance, or these regulations.

National Flood Insurance Program -- A program established by the U.S. Government in the National Flood Insurance Act of 1968, and expanded in the Flood Disaster Protection Act of 1973, in order to provide flood insurance at rates made affordable through a federal subsidy in local political jurisdictions which adopt and enforce floodplain management programs meeting the requirements of the National Flood Insurance Program Regulations. The program regulations are found at 24 Code of Federal Regulations, Chapter X, Subchapter B.

Off Site -- Any premise not located within the area of the property to be subdivided, whether or not in the same ownership of the applicant for subdivision approval.
**One Hundred (100) Year Flood** -- A flood having an average frequency of occurrence of once in one hundred (100) years, although it may occur in any year. It is based on statistical analysis of stream flow records available for the watershed and analysis of rainfall and runoff characteristics in the general region of the watershed.

**Owner** -- Any person, group of persons, firm or firms, corporation or corporations, or any other legal entity having legal title to or sufficient proprietary interest in the real property.

**Performance Bond** -- (See "Bond, performance")

**Perimeter Street** -- Any existing street to which the parcel of land to be subdivided abuts on only one side.

**Planning Commission** -- A public planning body established pursuant to Title 13, Chapters 2 or 5, Tennessee Code, to execute a partial or full planning program within authorized area limits.

**Preliminary Plat** -- The preliminary drawing or drawings, described in these regulations, indicating the proposed manner of layout of the subdivision to be submitted to the planning commission for approval.

**Premise(s)** -- A tract of land together with any buildings or structures which may be located thereon.

**Public Improvement** -- Any drainage ditch, roadway, parkway, sidewalk, pedestrian way, tree, lawn, off-street parking area, lot improvement, or other facility for which the local government may ultimately assume the responsibility for maintenance and operation or which may affect an improvement for which government responsibility is established.

**Public Way** -- Any publicly owned street, alley, sidewalk, or right-of-way which provides for movement of pedestrians or vehicles.

**Reach** -- A hydraulic engineering term to describe longitudinal segments of a stream or river. A reach generally includes the segment of the flood hazard area where flood heights are influenced by a man-made area or natural obstruction. In an urban area, the segment of a stream or river between two (2) consecutive bridge crossings typically would constitute a reach.

**Regulatory Flood** -- The one hundred-year flood.

**Regulatory Flood Protection Elevation** -- The elevation of the regulatory flood plus two (2) feet of freeboard to provide a safety factor.

**Residential Areas** – Those areas designated for residential use in the current edition of the zoning ordinance
Resubdivision -- A change in a map of any approved or recorded subdivision plat altering the lots incorporated within the confines of the original plat.

Right-of-Way -- A strip of land occupied or intended to be occupied by a public way crosswalk, railroad, electric transmission line, oil or gas pipeline, water main, sanitary or storm sewer line, or for another similar use. The usage of the term "right-of-way", for land platting purposes, shall mean that every right-of-way hereafter established and shown on a final plat is to be separate and distinct from the lots or parcels adjoining such right-of-way and shall not be included within the dimensions or areas of such lots or parcels.

Sale or Lease -- Any immediate or future transfer of ownership, including contract of sale or transfer, of an interest in a subdivision or part thereof, whether by metes and bounds, deed, contract, plat, map, or other written instrument.

Same Ownership -- Ownership by the same person, corporation, firm entity, partnership, or unincorporated association or ownership by different corporations, firms, partnerships, entities, or unincorporated associations, in which a stockholder, partner, associate, or a member of his family owns an interest in each corporation, firm, partnership, entity, or unincorporated association.

Setback -- The distance between a building wall and the nearest public way right-of-way.

Special Flood Hazard Map -- The official map designated by the Federal Insurance Administrator to identify floodplain areas having special flood hazards.

Staff Assistant to the Planning Commission -- The person(s) employed by the local governing body to assist the planning commission in planning and land use regulation activities.

Start of Construction -- For purposes of subdivision control, any alteration of the original surface area of the land, from and after the date of adoption of these regulations.

Structure -- Anything constructed above or below ground.

Subdivider -- Any person who (1) having an interest in land, causes it, directly or indirectly, to be divided into a subdivision or who (2) directly or indirectly, sells, leases, or develops, or offers to sell, lease, or develop, or advertises for sale, lease, or development, any interest, lot, parcel site, unit, or plot in a subdivision or who (3) engages, directly or indirectly, or through an agent in the business of selling, leasing, developing, or offering for sale, lease, or development a subdivision or any interest, lot, parcel, site, unit, or plot in a subdivision or who (4) is directly or indirectly controlled by or under direct or indirect common control with any of the foregoing.

Subdivision -- "Subdivision" means the division of a tract or parcel of land into two (2) or more lots, sites, or other divisions requiring new street or utility construction, or any division of less than five (5) acres for the purpose, whether immediate or future, of sale or building development, and includes resubdivision and when appropriate to the context,
relates to the process of resubdividing or to the land or area subdivided. (See Sections
13-3-401 and 13-4-301, Tennessee Code.)

**Subdivision Agent** -- Any person who represents or acts for or on behalf of a subdivider
or developer in selling, leasing, or developing or offering to sell, lease, or develop any
interest, lot, parcel, unit, site, or plot in a subdivision, except in an instance where only
legal counsel is provided.

**Switch Gear** -- A high voltage electrical device used to switch main feeder circuits and to
provide fuse protection for distribution of electrical current to customers.

**Temporary Improvement** -- Any improvement built and maintained by a subdivider
during construction of the subdivision and prior to release of the surety for completion of
required improvements.

**Twenty-Five (25) Year Flood** -- A flood having an average frequency of occurrence of
once in twenty-five (25) years.

**Underground** -- Not visible from the surface of the earth.

**Utility Companies** -- Any person, governmental body, organization or entity of any type,
or their agents, representatives and employees, supplying electricity, natural gas, water,
communications or similar and associated services to residential areas within the
planning jurisdiction.

**Utility Equipment** -- Includes poles, support towers, wires, conductors, circuits, guys,
stubs, platforms, cross arms, braces, transformers, insulators, cut-outs, switches,
communication circuits, appliances, attachments and appurtenances used or useful in
supplying electricity, natural gas, water, communication or similar associated services to
residential areas within the planning region of the City.

**Water Surface Elevation** -- The heights in relation to mean-sea-level expected to be
reached by floods of various magnitudes and frequencies at pertinent points in the
floodplain. Also the level of natural flows or collectors or water which may be expected to
be found above or below surface.

**Zoning Ordinance or Resolution** -- A statute, legally adopted pursuant to Title 13,
Chapters 4 or 7, Tennessee Code, for the purpose of regulating by district, land
development or use for a designated area.
ARTICLE VII: ADOPTION OF REGULATIONS AND AMENDMENTS

7-101 Original Enactment
In order that land shall be subdivided in accordance with the objectives and standards set forth in these regulations, these subdivision regulations are hereby adopted this the 12th day of May, 2003, and immediately shall be in full force and effect. Pursuant to Sections 13-3-403 and 13-4-303, Tennessee Code, a public hearing was held on these regulations May 12, 2003, at 6:30 p.m., Portland, City Hall, in Portland, Tennessee, notice of which was given by publication in The News Examiner on April 2, 2003 and the Robertson County Times on April 2, 2003.

Joe Payne, Chairman

Date 5/12/03

ATTEST:

Shawn Utley, Secretary

Date May 12, 2003
APPENDICES

Appendix A: Portland Planning Jurisdiction

A. JURISDICTION

These rules and regulations governing the construction of roads and streets shall apply within the Portland, Tennessee Planning Region. (See Illustration A-1.)
Appendix B: Street Construction and Drainage Specifications Standard Drawings

SECTION I: GENERAL

A. PURPOSE
   The purpose of these specifications is to establish standards of design and construction, including construction procedures and quality of materials, that are adequate to assure the safety, convenience, and welfare of the people within the planning jurisdiction.

B. DEFINITIONS
   1. Local Government - The city or county government having jurisdiction within the area where a development is located.
   2. Enforcing Officer - That individual designated by the local government to receive and review plans submitted in conformance with the provisions of this section.
   3. Engineer - An engineer certified and registered by the State Board of Architectural and Engineer Examiners pursuant to Section 62-202, Tennessee Code.
   4. Enforcing Officer - That individual designated by the chief executive officer of the local government to enforce these provisions.
   8. Basic Regulations - The basic subdivision regulations of Portland Planning Region to which this material is attached as an appendix.

C. APPROVALS
   All construction plans shall be prepared and submitted to the Enforcing Officer. The content and submission procedure shall be as set forth in SECTION II, PLANNING.

D. ACCEPTANCE
   Acceptance for public maintenance of any facilities or improvements located within any subdivision may only be accomplished by formal action of the governing body
in the manner established in Subsection 3-107, Basic Acceptance of Dedication Offers. Any approval of plans, etc., submitted in conformance with these provisions, shall not in any manner bind or presuppose acceptance of these facilities by the governing body.

E. RESPONSIBILITY FOR COMPLIANCE
In all matters involving enforcement of, or compliance with, the provisions contained herein, the subdivider (as defined in Basic Regulations, Section 6-102) is considered as the party legally responsible for performance; and the use of engineers, contractors, or other agents shall in no way diminish or absolve the subdivider of this basic responsibility.
SECTION II: PLANNING

A. PLAN PREPARATION
   All construction plans for improvements within land subdivisions shall be prepared by engineers registered to practice within the State of Tennessee. The plans shall bear the stamp and signature of the individual responsible for their preparation.

B. CONTENT
   The information set forth in Section 5-103, Basic Regulations, shall be required upon each and every plan submitted hereunder. In any instance where special conditions may warrant, additional data may be required.

C. SUBMISSION, REVIEW, AND APPROVAL
   When the plans are complete, with all required data entered thereon, they shall be submitted to the Enforcing Officer for review and comment prior to formal presentation before the planning commission. If the Enforcing Officer finds that the plans are in order and all required information is presented, he shall forward the plans to the planning commission for review and approval. Should any disagreement between the Enforcing Officer and the subdivider (or his engineer) arise as to the nature of, or requirement for, any particular improvement or facility, the plans may be forwarded to the planning commission for arbitration of the dispute.

   Action by the planning commission may come in the form of unconditional approval of the plans as submitted, conditional approval, or disapproval. Should the commission's action come in the form of conditional approval, the applicant may modify and resubmit the plans to the Enforcing Officer for further review. Should the Enforcing Officer find that the conditions established by the commission have been met, he may so certify in which instance the plans shall be considered approved. Should the commission act to conditionally approve the plans and no subsequent action is pursued by the subdivider (or his engineer) for a period of six (6) months following the date on which action was taken by the planning commission, the plans shall become null and void and any subsequent action shall require submission of new plans.

D. ACTION UPON APPROVAL
   Once the plans and preliminary subdivision plat have received approval, construction may begin.
SECTION III: TYPICAL SECTIONS

ROADWAY SECTION

NOT TO SCALE

PAVING SCHEDULE

1. 1½" ASPHALTIC CONCRETE SURFACE (411E)
2. TACK COAT (SS-1)
3. 2" ASPHALTIC CONCRETE BASE (B-MODIFIED)
4. PRIME COAT (RS-2)
5. 8" STONE (GRADING D PUG MILL MIX)

PAYMENT COURSES

NOT TO SCALE

LOW AND MEDIUM DENSITY URBAN RESIDENTIAL ACCESS LANE

SD-101

SUBDIVISION REGULATIONS
NOTES:
(A) 18' PAVEMENT REQUIRED FOR ACCESS LANE
(B) 20' PAVEMENT REQUIRED FOR ACCESS STREET

ROADWAY HALF SECTION

40', R.O.W.,
34', - 36',
18'-20', PAVEMENT
3', SHOULDER
1', DITCH

PAVING SCHEDULE

1 1/2" ASPHALTIC CONCRETE SURFACE (411E) 1 1/2"
TACK COAT (5S-1) 1 1/2"
2" ASPHALTIC CONCRETE BASE (8-MODIFIED) 8"
PRIME COAT (RS-2)
8" STONE (GRADING D PUG MILL MIX) SHOULDER
6" DOUBLE BITUMINOUS SURFACE TREATMENT
7" CRUSHED STONE BASE

LOW AND MEDIUM DENSITY RURAL RESIDENTIAL ACCESS LANE AND STREET

SD-104

SUBDIVISION REGULATIONS
NOTES:
(A) SIDEWALK REQUIRED ONLY ON ONE SIDE OF STREET
(B) 4:1 MAX SLOPE REQUIRED ON SIDE OF STREET WITHOUT SIDEWALK

ROADWAY HALF SECTION
NOT TO SCALE

MOUNTABLE CURB WITH GUTTER
SEE STANDARD DRAWING ST-202

PAVING SCHEDULE

1. 1.1/2" ASPHALTIC CONCRETE SURFACE (411E)
2. TACK COAT (SS-1)
3. 2" ASPHALTIC CONCRETE BASE (B-MODIFIED)
4. PRIME COAT (RS-2)
5. 10" STONE (GRADING) PUG MILL M
NOTES:
(A) 20' PAVEMENT REQUIRED FOR STREET WITH 2000 OR LESS ADT
(B) 22' PAVEMENT REQUIRED FOR STREET WITH 2000 OR MORE ADT

ROADWAY HALF SECTION
NOT TO SCALE

PAVING SCHEDULE
NOTE: SCHEDULE NOT TO SCALE

① 1 1/2" ASPHALTIC CONCRETE SURFACE (411E)
② TACK COAT (S5-1)
③ 2" ASPHALTIC CONCRETE BASE (B-MODIFIED) 8"
④ PRIME COAT (RS-2)
⑤ 8" STONE (GRADING D PUG MILK MIX)
⑥ SHOULDER
⑦ DOUBLE BITUMINOUS SURFACE TREATMENT
⑧ 7" CRUSHED STONE BASE

PAVEMENT COURSES
NOT TO SCALE
ROADWAY HALF SECTION
NOT TO SCALE

PAVING SCHEDULE

1. 1 1/2" ASPHALTIC CONCRETE SURFACE (411E)
2. TACK COAT (SS-1) 1 1/2"
3. 2" ASPHALTIC CONCRETE BASE (B-MODIFIED) 6"
4. PRIME COAT (RS-2)
5. 8" STONE (GRADING D PUG MILL MIX)
   SHOULDER
6. DOUBLE BITUMINOUS SURFACE TREATMENT
7. 7" CRUSHED STONE BASE

PAVEMENT COURSES
NOT TO SCALE
NOTES:
(A) SIDEWALK REQUIRED ONLY ON ONE SIDE OF STREET
(B) 4:1 MAX SLOPE REQUIRED ON SIDE OF STREET WITHOUT SIDEWALK

ROADWAY HALF SECTION
NOT TO SCALE

STANDARD CURB WITH GUTTER
SEE STANDARD DRAWING ST-200

PAVING SCHEDULE

1 1/2" ASPHALTIC CONCRETE SURFACE (411E)
2 TACK COAT (SS-1)
3 2" ASPHALTIC CONCRETE BASE (B-MODIFIED)
4 TACK COAT (SS-1)
5 4" ASPHALTIC CONCRETE BASE (307A)
6 PRIME COAT (RS-2)
7 8" STONE (GRADING D PUG MILL MIX)
ROADWAY HALF SECTION
NOT TO SCALE

STANDARD CURB WITH GUTTER
SEE STANDARD DRAWING ST-200

PAVING SCHEDULE

1. 1 1/2" ASPHALTIC CONCRETE SURFACE (411E)
2. TACK COAT (SS-1)
3. 2" ASPHALTIC CONCRETE BASE (B-MODIFIED)
4. TACK COAT (SS-1)
5. 4" ASPHALTIC CONCRETE BASE (307A)
6. PRIME COAT (RS-2)
7. 8" STONE (GRADING D PUG MILL MI)
TYPICAL INTERSECTION DETAIL
SCALE: NONE

TYPICAL INTERSECTION & CURB DETAIL

DRAWING NO. C-4
SCALE: None
SECTION IV MATERIALS SPECIFICATION AND CONSTRUCTION PROCEDURES

A. PRELIMINARY WORK

1. Location and Protection of Underground Utilities
   Prior to beginning excavation or grading, the subdivider shall determine, insofar as possible, the actual locations of all underground utilities in the vicinity of his operations and shall clearly mark them so that they can be avoided by equipment operators. Where such utility lines or services appear to lie in the path of construction, they shall be uncovered in advance to determine their exact location and depth and to avoid damage due to excavation or grading operations. Existing facilities shall be protected during construction or removed and replaced in equal condition, as necessary.

   Should any existing utility line or service be damaged during or as a result of the subdivider's operations, the subdivider shall take such emergency measures as may be necessary to minimize damage and shall immediately notify the utility agency involved. The subdivider shall then repair the damage to the satisfaction of the utility agency or shall pay the utility agency for making the repairs. In all cases the damaged structure shall be in as good or better condition as before the damage occurred.

2. Surveying and Staking
   The subdivider shall be responsible for his own surveys and establish his own grades unless otherwise directed by the enforcing officer.

3. Removal of Obstructions
   The subdivider shall be responsible for the removal, safeguarding, and replacement of fences, walls, structures, culverts, street signs, billboards, shrubs, mailboxes, or other obstructions which must be moved to facilitate construction. Such obstructions shall be restored to at least their original condition.

4. Clearing and Grubbing
   The subdivider shall be responsible for cutting, removing, and disposing of all trees, brush, stumps, roots, and weeds within the construction area. Disposal shall be by means of chippers, landfills, or other approved methods not in conflict with state or local ordinances.

   Care shall be taken to avoid unnecessary cutting or damage to trees not in the construction area. The subdivider shall be responsible for loss or damage to trees outside the permanent easement or rights-of-way.

5. Traffic Control and Safety
   The subdivider shall provide and maintain access to and from all properties along the line of his work. The subdivider shall also provide temporary bypasses and bridges where necessary to route traffic and shall maintain them in a safe and usable condition whenever, in the opinion of the enforcing officer, detouring of traffic to parallel routes cannot be done without hardship or excessive increase in travel by the public.
Where single-lane by-passes are provided the subdivider shall furnish signalmen to control traffic operations and minimize delays.

The subdivider shall provide, erect, and maintain adequate barricades, warning signs, and lights at all excavations, closures, detours, points of danger, and uncompleted pavement.

B. ROADWAY CONSTRUCTION

1. Stripping, Stockpiling, and Placing Topsoil
   All topsoil shall be stripped within the street right-of-way and from any other area designated by the enforcing officer. Topsoil shall be stored in stockpiles. All organic matter within the right-of-way shall be stripped and disposed of unless directed otherwise by the enforcing officer.

   A two (2) or three (3) inch layer of topsoil shall be placed where seeding is required or where required by the enforcing officer.

   After the stockpiled topsoil has been placed as specified above, the area where the topsoil was stockpiled shall be neatly graded and dressed.

2. Excavation
   Excavation shall conform to limits indicated on the plans. Excavation materials shall be removed in such manner that the slopes can be neatly trimmed. Excavation shall not be made below grade except where rock or stone masonry is encountered or undercutting of unstable materials is required. Materials removed below grade shall be replaced with approved materials thoroughly compacted. Where borrow materials are required to complete embankments or fills the subdivider shall be responsible for providing them.

   Rock excavation shall be removed to a minimum depth of twelve (12) inches below the subgrade and backfilled with approved materials which shall be thoroughly compacted.

   Where a spring or seepage water is encountered that is not provided for on drainage plans it shall be reported to the enforcing officer.

3. Fills and Embankments
   Embankment and fill materials shall be free from frost, stumps, trees, roots, sod, or muck. Only materials from excavation or borrow pits, or other materials approved by the enforcing officer shall be used. Materials shall not be placed on frozen ground.

   Where excavated materials are used in fill construction and the materials consist of earth and various grades of rock, the fills shall be carefully constructed with the larger or hard rock on the bottom followed by the smaller or soft rock and finally the earth fill to provide a well-compacted and void-free embankment.

   All depressions or holes below the natural ground surface, whether caused by grubbing, rock removal, undercutting, or otherwise, shall be filled with suitable materials and compacted to ground surface before fill
As amended February 12, 2019

class construction is started.

Backfilling around a structure shall have been completed and thoroughly compacted to ground surface before any embankment materials are placed thereon.

Embankments shall be so constructed that adequate surface drainage will be provided at all times.

Fill areas shall be compacted by a sheep's foot roller, to a density of not less than ninety-five (95) percent of optimum density and within three (3) percent of optimum moisture content per ASTM D 698, and each lift of fill materials shall be rolled until the roller "walk out".

Fill materials shall be placed in eight (8) inch lifts, maximum thickness. Where excavated materials consist mainly of rock too large to be placed in the normal eight (8) inch thickness without crushing or further breaking down the pieces. Such materials shall be placed in the fill in layers not exceeding three (3) feet in depth. No rock larger than eighteen (18) inches in dimension shall be placed in fill. Care shall be taken to fill all voids between large rock and to assure that fill materials are compacted such that settling is minimized. Compaction of the top six (6) inches of cuts or fills shall be accomplished with pneumatic-tire rollers.

Backfill around structures shall be of crushed stone or earth meeting the approval of the enforcing officer; and the fill shall be placed and compacted in eight (8) inch lifts and brought up evenly on all sides of the structure.

4. **Undercutting**

This work shall consist of the removal and disposal of unsatisfactory materials below grade in cut sections or areas upon which embankments are to be placed. It shall also include undercutting for pipes and box culverts where required.

Known areas to be undercut shall be designated on the materials approved by the enforcing officer. The backfill materials shall be placed in eight (8) inch lifts and compacted as specified for fill construction.

Disposal of unsatisfactory materials shall be approved by the enforcing officer.

5. **Subgrade Construction and Preparation**

The subgrade shall be prepared in reasonably close conformity with the lines and grades as shown on the plans.

Grading of subgrade shall be performed in such manner as to provide ready drainage of water. Ditches and drains shall be maintained to provide proper drainage during construction.

Hauling over finished subgrade shall be limited to that which is essential for construction purposes, and all ruts or rough places that develop in a
completed subgrade shall be smoothed and recompacted. Soft areas shall be removed and replaced with crushed stone or as directed by the enforcing officer.

The subgrade shall be checked and approved by the enforcing officer for adherence to the plans before any base materials are placed.

6. **Shoulders and Slopes**
   All shoulders and slopes shall be trimmed and shaped to conform with the cross sections shown on the plans and as specified in Section C-5, below. Rock cuts shall be sealed of all loose fragments, projecting points, etc., so as to leave a clean and neat appearance. Shoulders shall be completed where required as shown on the plans and shall be double bituminous surface treated, with care being taken to protect the surface and edges of pavement. Shoulder materials shall be placed in uniform layers and compacted by overlapped rolling of both base course and pavement. The finished shoulder shall be firm against the pavement.

C. **BASE AND PAVING**
   1. **Base Stone**
      
      After the sub-base has been inspected and approved by the Enforcing Officer, a base shall be constructed of the width and thickness indicated in the selected roadway cross-section.

      The base course of stone shall be placed and compacted in layers or lifts upon the prepared subgrade to a finish thickness as described and shown on the plans. No single layer or lift shall exceed six (6) inches in depth.

      The base course shall be a mix of mineral aggregate conforming to the technical specifications set forth in Section 303, Standard Specifications. The aggregate base shall not be spread on a subgrade that is frozen or that contains frost. The base shall be placed and spread in uniform layers or lifts without segregation of size; each layer shall be compacted to a thickness no greater than four (4) inches. The stone shall be mixed with graders or other equipment until a uniform mixture is obtained. Each layer shall be compacted by rolling with alternate blading until a smooth, even, and uniformly compacted finish is obtained.

      The base stone shall be graded and rolled while it is still moist from the pugmill mix. If the enforcing officer determines that the mix is too dry, water shall be added with a distributor tank truck while the stone is being graded and rolled. Compaction shall be uniform for the entire width of the roadway until a density of eighty (80) percent of the solid volume has been achieved. Placement and compaction of each layer shall be approved by the enforcing officer before materials for the next successive layer are placed.

      No pavement shall be placed until the stone base has been approved by the Enforcing Officer.

   2. **Prime Coat**
      After the base stone has been prepared as outlined above, a bituminous prime coat shall be applied uniformly over the surface of the base by the
use of an approved bituminous distributor. The prime coat shall be applied at the rate of the three-tenths (3/10) gallon per square yard, using Grade RC-70 or RC-250, or refined tar Grade RT-2, RT-3, or emulsified asphalt, Grade AE-P. If, after the bituminous materials have been applied, they fail to penetrate before the time that the roadway is to be used by traffic, dry cover materials shall be spread at a rate established by the enforcing officer, (between eight (8) and twelve (12) pounds per square yard) to prevent damage to the primed surface. An excess of cover materials shall be avoided. No succeeding stage of construction shall be placed upon the prime coat until it has properly cured. Aggregate for cover materials shall be Size No. 78 or 8.

In addition to these general requirements, unless otherwise stipulated, all materials and methods of installation shall conform to the technical specifications set forth in Section 402, Standard Specifications.

3. **Tack Coat**
   A tack coat shall be applied to old or existing pavement surface or to a previously prepared base or surface to provide bond for an overlaid course. The tack coat shall be applied at the rate of one-tenth (1/10) gallon per square yard using materials and methods of installation set forth in Section 403, Standard Specifications.

4. **Asphalt Base Mix**
   Upon completion of the application of the prime coat, or tack coat, an asphaltic concrete (hot mix) base shall be applied. The base mix shall be the thickness shown on the detail sheet for that class street. All materials and methods of installation shall conform to the technical specifications set forth in Section 307 and Section 407, Standard Specifications. The base mix shall be constructed of Grade BM (B-modified) materials, described in Section 903.06, Standard Specifications.

Suitably sized samples for the determination of thickness and density of the completed pavement may be removed and tested, as directed by the Enforcing Officer. the contractor shall replace without cost where samples are removed. If the deficiency in composition, density and thickness exceeds the requirements specified, they shall be removed and replaced by the contractor. Only materials that have been demonstrated by test as satisfactory for the intended use will be accepted.

5. **Asphaltic Wearing Surface**
   The final asphalt wearing surface shall not be placed until a minimum of seventy-five (75) percent of the residences served by the street are complete, any potholes in the binder have been repaired, the binder has been leveled, and where curbs are provided, the backfill behind such placed and compacted.

Upon approval of the Enforcing Officer the final wearing surface may be applied. The wearing surface shall be the thickness shown on the detail sheet for that class street. All materials and methods of installation shall conform to the technical specifications set forth in Section 411, Standard Specifications, for asphaltic concrete surface. The wearing surface shall
be constructed of Grade D or E materials, described in Section 903.11, Standard Specifications, and shall utilize asphaltic cement Grade RT-4 or 5, or TRCB-5 or 6, as set forth in Section 904, Standard Specifications.

Suitably sized samples for the determination of thickness and density of the completed pavement may be removed and tested, as directed by the Enforcing Officer. the contractor shall replace without cost where samples are removed. If the deficiency in composition, density and thickness exceeds the requirements specified, they shall be removed and replaced by the contractor. Only materials that have been demonstrated by test as satisfactory for the intended use will be accepted.

6. Shoulders
Shoulder construction shall be completed by blading, moistening as necessary, and by thoroughly compacting. The shoulders shall be the width and thickness shown on the typical section as required herein and covered with a double bituminous service treatment. The surface shall be prepared as directed in advance of the surface construction. Upon completion of the prime coat, a double bituminous surface treatment shall be applied with the first course being at a rate of between 0.38 and 0.42 gallons per square yard. If the width of application is wider than the distributor, each width of spread shall not be less than one-half (1/2) the surface to be treated. Areas inaccessible to the distributor shall be treated either with hand sprays or pouring pots. Immediately after each application of bituminous materials has been made, it shall be covered uniformly with Size No. 6, mineral aggregate. The aggregate shall be allowed to cure for a length of time to be determined by the chief enforcing officer before the second application is begun.

The second application of bituminous materials shall be applied in the same manner as the first application, at a uniform rate of between 0.30 and 0.35 gallons per square yard. Mineral aggregate, Size No. 7, shall then be spread in the same manner as for the first spread at a rate between twenty (20) and twenty-five (25) pounds per square yard.

Immediately after each spread of cover aggregate, uniform coverage shall be achieved by hand brooming. Additional aggregate shall be placed by hand on thin or bare areas.

Immediately after spreading and brooming the cover aggregate, the entire surface shall be rolled, beginning at the edges and progressing to the edge of the pavement. Rolling shall begin within thirty (30) minutes after the aggregate had been spread. The same rolling and curing procedures required in making the first application shall be repeated in making the second application.

D. DRAINAGE SYSTEM DESIGN
1. Ditching and Channelization
This work shall consist of the construction of ditches adjacent to roadway shoulders and feeding to and from culverts under or adjacent to the roadway. All drainage ditches shall be graded in their entirety during the time the roadways are being graded; such grading shall be completed
prior to final inspection of the roadways.

2. **Stabilization of Ditches**
   All open ditches shall be stabilized in accordance with the following requirements:

<table>
<thead>
<tr>
<th>Size of Nearest Culvert (Upstream)</th>
<th>Seeding Required</th>
<th>To Be Sod Required</th>
<th>Concrete Lined Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>15&quot;</td>
<td>Grades 1.00% - 3.00%</td>
<td>Grades 3.00% - 12.00%</td>
<td>Grades Exceeding</td>
</tr>
<tr>
<td>18&quot; thru 24&quot;</td>
<td>Grades 1.00% - 1.50%</td>
<td>Grades 1.50% - 7.00%</td>
<td>Grades Exceeding</td>
</tr>
<tr>
<td>30&quot; thru 36&quot;</td>
<td>Grades 1.00% - 1.50%</td>
<td>Grades 1.00% - 4.00%</td>
<td>Grades Exceeding</td>
</tr>
<tr>
<td>42&quot; thru 72&quot;</td>
<td>Grades 2.50% or less</td>
<td>Grades 2.50% or less</td>
<td>Grades Exceeding</td>
</tr>
</tbody>
</table>

3. **Concrete Ditch Paving**
   Concrete ditch paving shall consist of the construction of paved ditches on a prepared subgrade. The subgrade shall be shaped and compacted to a firm even surface. All soft materials shall be removed and replaced with acceptable materials and shall be compacted as directed by the enforcing officer.

   Concrete ditch pavement shall be four (4) inches in thickness throughout and shall be backfilled immediately after the concrete has set and the forms have been removed. The backfilled materials shall be thoroughly compacted. Expansion joints shall be located as directed by the enforcing officer.

4. **Culverts and Storm Drains**
   This work shall consist of the construction of pipe culverts and storm sewers as shown on the plans. **No metal pipe shall be used** without approval of the chief enforcing officer. Reinforced concrete pipes shall conform to minimum standards for Class III, Reinforced Pipes, A.S.T.M. C76.

   Bedding for pipe culverts shall be Class "B" material. Pipes shall be bedded on a six (6) inch thickness of Class "B" material and backfilled to a depth of thirty (30) percent of the diameter of the pipes. Recesses shall be dug in the bedding materials to accommodate the fill. Class "B" bedding shall be Size No. 7, as shown in Chart No. 903.23, of the Tennessee Department of Highways Standard Specifications. Culverts and storm drains in existing roadways shall be backfilled to the depth of the cut.

5. **Headwalls**
   Concrete headwalls shall be constructed at both ends of cross drains as shown and detailed on the standard drawings included herein.

6. **Catch Basins**
   This work shall consist of constructing catch basins complete within inlets, outlets, and inverts. Tops and inlets shall be constructed to conform to
roadway grade so that drainage can easily be caught and no ponding created. Catch basins shall be constructed as shown and detailed on the standard drawings contained herein.

7. **Box Culverts and Bridges**
   Design of box culverts and bridges shall be submitted to the enforcing officer for approval before construction is permitted. These designs shall be stamped and signed by a licensed engineer in the State of Tennessee, before submittal to the City for approval.

8. **Extruded Concrete Curb or Formed Curb with Gutter**
   Concrete curbs or curbs with gutters shall conform to the standard drawings as detailed herein. Concrete for curbs and gutters shall be Class "A", at thirty-five hundred (3,500) psi. Curbs and gutters shall be constructed to the lines and grades shown on the plans, or as designated by the enforcing officer. The final subgrade for curbs and gutters shall be carefully graded and compacted to an even density and shall be smooth and true to grade.

   Formed curbs with gutters shall be constructed in sections of uniform length of approximately ten (10) feet, unless, otherwise, shown on the plans or directed by the chief enforcing officer. Expansion joints shall be formed at intervals of approximately fifty (50) feet using three-fourths (3/4) inch thick joint filler.

   The contractor shall backfill behind all curbs. Parallel ditches behind and adjacent to curbs and gutters will not be allowed.

   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 tests 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, tests will be conducted at the expense of the developer and test results shall be submitted to the Enforcing Officer.

E. **FINAL DRESSING, SEEDING, AND SODDING**

1. **Final Dressing**
   This work shall consist of dressing all slopes and areas to within reasonable close conformity to the lines and grades indicated on the plans, or as directed by the enforcing officer. Final dressing shall be performed by hand or machine to produce a uniform finish to all parts of the roadway including embankments, ditches, etc. Rock cuts shall be cleaned of all loose fragments; side slopes shall be laid back to a three to one (3:1) slope and seeded as described in these specifications.

   The entire right-of-way shall be cleaned of all weeds and brush and all structures both old and new shall be cleared of all brush, rubbish, sediment, or other objectionable materials.

2. **Seeding**
   In all areas damaged or disturbed by the construction operation where
established ground cover was present before beginning of construction, the subdivider shall be responsible for restoring the ground cover after completion of construction, unless noted otherwise on drawings. All areas seeded shall be graded smooth prior to seeding and the subdivider shall be responsible for maintenance of the smooth finished grade until grass is established.

After designated areas have been carefully hand graded, soil shall be prepared for fertilizing and seeding. Fertilizer shall be a standard commercial fertilizer Grade 15-15-15, or equivalent, and shall be applied at a rate of not less than ten (10) pounds per one thousand (1,000) square feet. The fertilizer shall be lightly harrowed, raked, or otherwise incorporated into the soil for a depth of approximately one half (1/2) inch. The subdivider shall be responsible for any regrading or reseeding required to produce an acceptable grass cover. Rutting and washing shall be restored by reseeding and strawing; in areas of extreme erosion sodding may be required. The seed shall be as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Percent by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lespedeza</td>
<td>20</td>
</tr>
<tr>
<td>Serices Lespedeza</td>
<td>15</td>
</tr>
<tr>
<td>Kentucky 31 Fescue</td>
<td>40</td>
</tr>
<tr>
<td>English Rye</td>
<td>15</td>
</tr>
<tr>
<td>White Dutch Clover</td>
<td>5</td>
</tr>
<tr>
<td>Weeping Love Grass</td>
<td>5</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>Kentucky 31 Fescue</td>
<td>55</td>
</tr>
<tr>
<td>Redtop</td>
<td>15</td>
</tr>
<tr>
<td>English Rye</td>
<td>20</td>
</tr>
<tr>
<td>White Dutch Clover</td>
<td>5</td>
</tr>
<tr>
<td>Weeping Love Grass</td>
<td>5</td>
</tr>
</tbody>
</table>

The seed shall be sown uniformly at the rate of one and one-half (1 1/2) pounds per one thousand (1,000) square feet.

3. **Sodding**

Sodding shall consist of furnishing and placing sod at all locations shown on the plans, or as directed by the enforcing officer. Work shall include the furnishing and placing of new sod, consisting of live, dense, well-rooted growth of permanent grasses free from johnson grass and other obnoxious grasses or weeds, well suited for the soil on which it is placed. All sod shall be cleanly cut in strips having a uniform thickness of not less than two and one-half (2 1/2) inches. Sod shall be set when the soil is moist and favorable to growth. No setting shall be done between October 1 and April 1, without permission of the enforcing officer. The area to be sodded shall be brought to the lines and grades shown on the plans, or as directed by the enforcing officer.

The surface of the ground to be sodded shall be loosened to a depth of not less than one (1) inch with a rake or other device. If necessary, it shall be sprinkled until saturated for a minimum depth of one (1) inch and kept
moist until the sod is placed. Immediately before placing the sod, fertilizer and lime shall be applied uniformly to the prepared surface of the ground. Fertilizer shall be applied at the rate of eight (8) pounds of Grade 15-15-15, or equivalent, per one thousand (1,000) square feet.

Sod shall be placed as soon as practical after removal from the point of origin, it shall be kept in a moist condition during the interim. Sod shall be carefully placed by hand on the prepared ground surface with the edges in close contact and, as far as possible, in a position to break joints. Each strip of sod laid shall be fitted into place and tamped. Immediately after placing, the sod shall be thoroughly wetted and rolled with an approved roller. On slopes of two to one (2:1) or steeper, pinning or pegging may be required to hold the sod in place.

The sod shall be watered as directed by the enforcing officer for a period of two (2) weeks. The subdivider shall not permit any equipment or materials to be placed on any planted area and shall erect suitable barricades and guards to prevent equipment, labor, or the public from traveling on or over any area planted with sod.

F. INSPECTION OF WORK
1. Notice of Work Beginning
Prior to the beginning of construction, the contractor shall notify the chief enforcing officer in writing at least twenty-four (24) hours in advance.

2. Precedence
Should the specifications in the contract documents differ from those contained herein, the most stringent shall take precedence, unless specified in writing by the chief enforcing officer.

3. Testing and Inspection
The Portland Enforcing Officer shall be supplied a copy of all construction plans, profiles and specifications required by these regulations. All results of tests required by these regulations shall be provided to the Enforcing Officer.

G. STANDARD DRAWINGS
The purpose of this section is to include drawings of details for construction. These drawings are to be used in conjunction with the specifications.

Details concerning the construction of sewer and service lines shall be referenced to the specifications for collector sewers, service lines, and house connections for Portland, Tennessee.

Any special construction problems or conditions not covered by these specifications or drawings, shall be submitted to the Portland Municipal-Regional Planning Commission for approval.

The following Standard Drawings are included in this section:
B-4 - Reinforced Concrete Headwall
B-5 - Area Drain
B-6 - Straight Endwall for Circular Pipe
B-7 - Straight Endwall for Pipe Arch
B-8 - Concrete Lined Ditch
B-9 - Typical Stabilized Ditch Section
DR-130 - Frame and Grate for Mountable Curb and Gutter
ST-202 - Mountable Curb with Gutter
ST-210 - Standard Concrete Sidewalk
DR-130 - Frame and Grate for Mountable Curb and Gutter
PLAN

FINISH CONCRETE

4 x 3 3/8 x 4 7/8

5 1/2 x 6" ANCHOR WELD TO BACK OF ANGLE
3-5/8 x 1/2" BOLTS EQUALLY SPACED

4 x 12" BOTH
HOT IN ALL
FOUR WALLS

CLASS C:
CONCRETE

SECTION

FORM SMOOTH INVERT TO 1/2
HEIGHT

PLACE OPENINGS
AS REQUIRED

NOTE 1 - WHEN DEPTH EXCEEDS 4', INCREASE MIN.
WIDTH TO 4'.

NOTE 2 - WHEN DEPTH IS 4' OR LESS BRICK MAY BE
USED IN LIEU OF CONCRETE SIDE WALLS

NOTE 3 - USE LADDER BARS (OWG.E-103) FOR DEPTH EXCEEDING 4'

ELEVATION

AREA DRAIN

DRAWING NO. B-5

SCALE: 3/8" = 1'-0"
ALL EDGES OF EXPOSED SURFACES TO BE CHAMFERED ONE INCH.

SLOPE SIDES OF DITCH ONE & ONE-HALF TO ONE TO "L"

ELEVATION

SECTION

<table>
<thead>
<tr>
<th>DIAM.</th>
<th>&quot;H&quot;</th>
<th>&quot;B&quot;</th>
<th>&quot;L&quot;</th>
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<tr>
<td>12&quot;</td>
<td>3'-8&quot;</td>
<td>1'-11&quot;</td>
<td>4'-0&quot;</td>
</tr>
<tr>
<td>15&quot;</td>
<td>3'-11&quot;</td>
<td>1'-11\frac{3}{4}&quot;</td>
<td>5'-0&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>4'-2&quot;</td>
<td>2'-0\frac{3}{4}&quot;</td>
<td>6'-0&quot;</td>
</tr>
<tr>
<td>21&quot;</td>
<td>4'-5&quot;</td>
<td>2'-1\frac{3}{4}&quot;</td>
<td>7'-0&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>4'-8&quot;</td>
<td>2'-2&quot;</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>5'-2&quot;</td>
<td>2'-3\frac{1}{2}&quot;</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

STRAIGHT ENDWALL FOR CIRCULAR PIPE

DRAWING NO. B-6
SCALE: 1" = 2'-0"
ALL EDGES OF EXPOSED SURFACES TO BE CHAMFERED ONE INCH.

SLOPE SIDES OF DITCH ONE & ONE-HALF TO ONE.

ELEVATION

CLASS "A" CONCRETE OR MORTARED STONE MASONRY

SECTION

<table>
<thead>
<tr>
<th>&quot;S&quot;</th>
<th>&quot;H&quot;</th>
<th>&quot;B&quot;</th>
<th>&quot;L&quot;</th>
</tr>
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<tbody>
<tr>
<td>18&quot; x 11&quot;</td>
<td>3'-7&quot;</td>
<td>1'-10 1/2&quot;</td>
<td>4'-3&quot;</td>
</tr>
<tr>
<td>22&quot; x 13&quot;</td>
<td>3'-8&quot;</td>
<td>1'-11 1/2&quot;</td>
<td>5'-1&quot;</td>
</tr>
<tr>
<td>25&quot; x 16&quot;</td>
<td>4'-0&quot;</td>
<td>2'-0&quot;</td>
<td>6'-11&quot;</td>
</tr>
<tr>
<td>29&quot; x 18&quot;</td>
<td>4'-2&quot;</td>
<td>2'-0 1/2&quot;</td>
<td>6'-11&quot;</td>
</tr>
<tr>
<td>34&quot; x 22&quot;</td>
<td>4'-6&quot;</td>
<td>2'-1 1/2&quot;</td>
<td>8'-6&quot;</td>
</tr>
<tr>
<td>43&quot; x 27&quot;</td>
<td>4'-11&quot;</td>
<td>2'-3 1/2&quot;</td>
<td>10'-4&quot;</td>
</tr>
<tr>
<td>50&quot; x 31&quot;</td>
<td>5'-3&quot;</td>
<td>2'-3 1/2&quot;</td>
<td>11'-11&quot;</td>
</tr>
</tbody>
</table>

STRAIGHT ENDWALL FOR PIPE ARCH

DRAWING NO. 8-7
SCALE: 1" = 2'-0"

Page 142 of 149
CONCRETE LINED DITCH
(Not to Scale)

DRAWN FOR 1:1 SIDE SLOPE

DRAWN FOR 1/2:1 SIDE SLOPE

SYM. ABOUT DITCH

EXISTING GROUND

NOTE:

CONSTR. JOINTS
IF REQUIRED
SEE DETAIL "A"

*4 CONT. BETWEEN
EXP. JOINTS

6 MIL. POLYETHYLENE

2" WEEP HOLES
@ 10 O.C.

6 X 6 % MESH
PROFILE GRADE

NOTE:

SEE CONTRACT DRAWINGS
FOR DIMENSIONS "D" & "W"
AND SIDE SLOPE.

TYPICAL SECTION

SCALE: 1" = 2'-0"

EXP. JOINT MATERIAL

1/4" CHAMFER

1/2" KEY JOINT

POLYETHYLENE

WIRE MESH
CONT. THRU
CONST. JOINT

FINISH TO
SMOOTH RADIUS.

NOTE:

EXPANSION JOINTS TO BE
PLACED AT 40' MAX. O.C.

TYPICAL SECTION AT
EXPANSION JOINTS

NOTE:

1. TRANSVERSE GROOVE
MARKING TO BE PLACED
IN TOP OF CONCRETE AT
10' O.C. BETWEEN EXP. JOINTS.
2. TOP SURFACE OF CONCRETE
LINING TO HAVE A LIGHT,
BROOM FINISH.

CONSTRUCTION JOINTS SHALL BE
USED ONLY WHERE DEPTH OF LINING
PERMITS A MINIMUM DEPTH OF 2'-0'
OF LINING ABOVE THE JOINTS AS
SHOWN IN TYPICAL SECTION ABOVE.
DITCH STABILIZATION IN ACCORDANCE WITH ITEM NO. III

\[ b = \text{Pipe Diameter} + 2 \text{ Feet} \]
\[ T = b + 4d \]
\[ d = \frac{1}{2} \text{ Pipe Diameter} \]
TOP VIEW

SECTION A-A

1. CONTACT SURFACES OF FRAME MARKED "F" ARE TO BE GROUNDED.
2. CASTING TO BE CLEANED AND PAINTED WITH BITUMINOUS COATING.

FRAME AND GRATE FOR MOUNTABLE CURB AND GUTTER

DR-130

SUBDIVISION REGULATIONS
1. Expansion joints to be spaced a maximum of 100' apart or as directed by the Engineer.
2. Expansion joints will also be required at tangent points, drive ramps and inlets.
3. Construction joints are to be cut into curb and gutter every 10' to a depth of D/4.

**TYPICAL CROSS-SECTION**

**MOUNTABLE CURB WITH GUTTER**

**ST-202**

**SUBDIVISION REGULATIONS**
EXTRACTION JOIN TO BE SPACED A MAXIMUM OF 24" APART OR AS DIRECTED BY THE ENGINEER TO MATCH CURB EXPANSION JOINTS WHERE SIDEWALK IS BUILT TO CURB.

OR AS OTHERWISE APPROVED

SIDEWALK BUILT TO CURB
(WIDTH GREATER THAN 6')

STANDARD CONCRETE SIDEWALK
1. Contact surfaces of frame marked "f" are to be ground.
2. Casting to be cleaned and painted with bituminous coating.
Appendix C: Portland Major Thoroughfare Plan