

Johnson City Regional Planning Commission

SUBDIVISION REGULATIONS

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SUBDIVISION REGULATIONS

Johnson City, Tennessee



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THE JOHNSON CITY REGIONAL PLANNING COMMISSION

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SUBDIVISION REGULATIONS

JOHNSON CITY REGIONAL *PLANNING COMMISSION*
(Hereinafter Referred to as the *Planning Commission*)

ARTICLE 1

APPLICABILITY

1-1 Authority

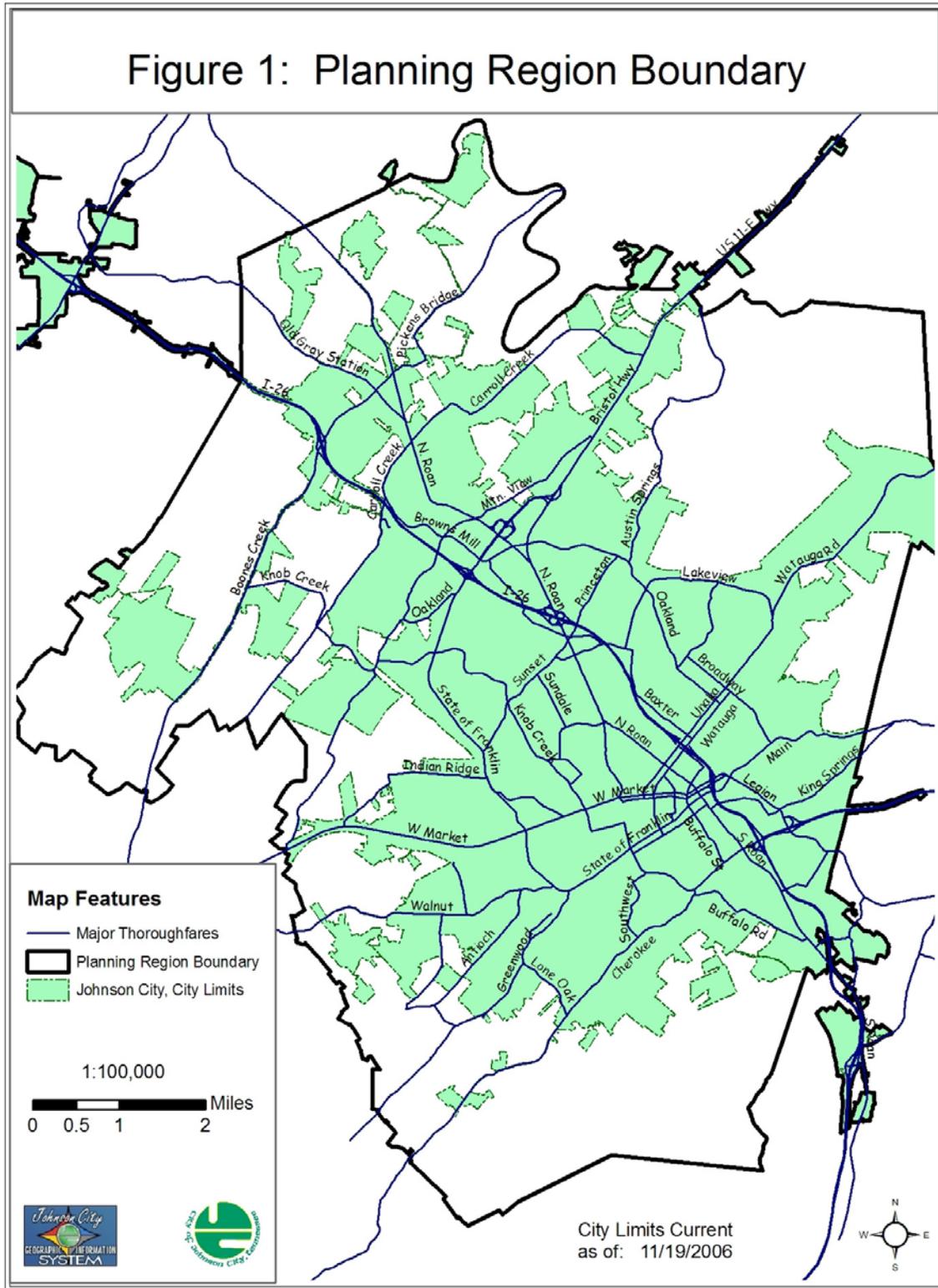
These *subdivision* regulations are adopted under authority granted by Title 13, Chapter 3, Section 13-3-401 through Section 13-3-411 and Section 13-4-301 through Section 13-4-309 of The Tennessee Code Annotated. The *Planning Commission* has fulfilled the requirements set forth in these acts as a prerequisite to the adoption of such regulations, having filed a certified copy of the Major Road Plan on August 15, 1944 and a Major Street Plan on October 13, 1944, and subsequently revised said plans thereafter.

1-2 Purpose

The *subdivision* of land is the first step in the process of community *development*. Once land has been divided into *streets*, blocks, and *lots* and publicly recorded, the correction of defects is costly and difficult. *Subdivision* of land is a public responsibility involving the extension of infrastructure and the provision of various public services customary to urban areas. The welfare of the community is dependent on the orderly growth and *development* of new neighborhoods. It is in the interest of the public, the *subdivider*, and future owners that *subdivisions* be conceived, designed, and developed in accordance with sound rules and proper standards.

The Major Street Plan of the *Planning Commission*, of which a certified copy has been filed in the Office of the Registrar of Washington County, Sullivan County, and Carter County, Tennessee, and the following standards are designed to provide for the harmonious *development* of the area; to secure a coordinated layout and adequate provision for vehicular and non-vehicular traffic; to secure adequate provision for light, air, recreation, transportation, water, drainage, sewer, and other sanitary facilities; and to provide for an improved living environment within the *planning region* of the *Planning Commission*.

Figure 1: Planning Region Boundary



1-3 Jurisdiction

These regulations govern all *subdivision* of land within the corporate limits of Johnson City as now or hereafter established, and within the Johnson City *planning region* as established by resolution of the Tennessee State Planning Commission on December 18, 1962, as adopted by the *Planning Commission* by resolution on May 2, 1963, and subsequently as amended. Reference Figure 1.

1-4 Scope

All *subdivision* of land within the jurisdiction of the *Planning Commission* shall be submitted to the *Planning Commission* for review and approval or disapproval, according to the procedures described in Article 3 of these regulations. The process of subdividing land by deed or metes-and-bounds description or the recording of such *subdivision*, *parcel*, or tract of land which has been created by deed or metes-and-bounds description shall be considered to be a violation of these regulations and of the Tennessee Code Annotated, Section 13-3-402. The *Planning Commission* shall take appropriate actions to ensure these regulations are properly followed and enforced.

1-5 Relation to Other Ordinances

No final *plat* of land within the force and effect of an existing *zoning ordinance* will be approved unless it conforms with such ordinance. Whenever there is a discrepancy between minimum standards or dimensions noted herein and those contained in *zoning ordinances*, building codes, or other official regulations, the highest standards shall apply; however, whenever any zoning district contained within the Zoning Ordinance of the City of Johnson City specifically requires a different standard for *development* than those noted herein, the requirements of the zoning district shall govern regardless of which standard is more stringent.

1-6 Variances

Where any provision of these regulations would cause unnecessary hardship, or because of topographical or other conditions peculiar to the site, which in the opinion of the *City Engineer* would restrict the public interest, health, safety, or welfare, the *subdivider* shall:

1-6.1 Show to the satisfaction of the *City Engineer* the basis for which the variance is required;

1-6.2 Work with the *City Engineer* to develop applicable standards for design which would accomplish the intent of these regulations. If no agreement can be reached, then each shall submit the disagreement to the *Planning Commission*.

1-6.3 Present such variances along with written justification to the *Planning Commission* which shall determine whether the variance will destroy the intent of these regulations. Authorization of any variance shall be placed in

the minutes of the *Planning Commission* meeting with the reasoning upon which the variance was granted.

If a *subdivider* chooses to increase or decrease the *street* widths required in Article 4 of these regulations, the *Planning Commission* may grant such a variance and may require additional measures necessary to assure proper traffic control and flow. Such measures may include, but are not limited to, traffic calming techniques to discourage or prevent excessive speeds and cut-through traffic.

1-7 Vesting Rights

To avoid undue hardship, an approved subdivision plat shall be considered vested for a period of three (3) years from the date of Planning Commission approval provided the subdivider obtains construction plan approval and obtains the necessary permits. The vesting period shall be extended an additional two (2) years provided site preparation has begun during the initial three year period. If construction commences and the developer maintains all necessary permits, the Preliminary Plat remains vested for a period not to exceed ten (10) years from the date of Planning Commission approval. Subdivisions involving multiple phases are vested for a period not to exceed fifteen (15) years.

Type of Project	Vesting Period	Required Actions
Preliminary Plat	3 yrs.	Obtain Construction Plan approval and secure necessary permits
	2 additional yrs.	Site preparation has commenced
	5 additional yrs. (not to exceed a total of 10 yrs.)	Construction commences and developer maintains all permits.
Multi-phase Subdivisions	15 yrs.	Complete construction for each phase, maintain necessary permits.

The vesting period for an approved subdivision may be extended as deemed advisable by the Planning Commission. In the event the city enacts a moratorium on development or construction, the vesting period shall be tolled during the moratorium period.

1-7.1 Termination of Vesting Rights

The vested rights of an approved subdivision may be terminated upon a written determination by the city under the following circumstances:

During the vesting period, the Subdivision Regulations which are in effect on the date of approval of a Preliminary Plat remain the development standards applicable to the property described in such site plan except such vested property rights terminate upon a written determination by the city under the following circumstances:

- (1) When the subdivider violates the terms and conditions specified in the approved Preliminary Plat; provided, the applicant is given ninety (90) days from the date of notification to cure the violation; provided further, that the city may, upon a

determination that such is in the best interest of the community, grant, in writing, an additional time period to cure the violation;

- (2) When the subdivider violates any of the terms and conditions specified in the local ordinance or resolution; provided, the subdivider is given ninety (90) days from the date of notification to cure the violation; provided further, that the city may, upon a determination that such is in the best interest of the community, grant, in writing, an additional time period to cure the violation;
- (3) Upon a finding by the city that the subdivider intentionally supplied inaccurate information or knowingly made misrepresentations material to the Planning Commission or staff during Preliminary Plat approval or intentionally and knowingly did not construct the development in accordance with the approved Preliminary Plat or an approved amendment for the building permit or the Preliminary Plat; or
- (4) Upon the enactment or promulgation of a state or federal law, regulation, rule, policy, corrective action or other governance, regardless of nomenclature, that is required to be enforced by the city and that precludes development as contemplated in the approved Preliminary Plat or building permit, unless modifications to the Preliminary Plat or building permit can be made by the subdivider, within ninety (90) days of notification of the new requirement, which will allow the subdivider to comply with the new requirements.

The Planning Commission may allow a subdivision to remain vested despite such a determined occurrence when a written determination is made that such continuation is in the best interest of the community by the city.

ARTICLE 2

DEFINITIONS

When used in these regulations, the following words and phrases shall have the meaning given in this section. Terms not herein defined shall have their customary dictionary definitions where not inconsistent with the context. The term “shall” is mandatory. When not inconsistent with the context, words used in the singular number include the plural and those used in the plural include the singular. Words used in the present tense include the future tense.

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

2-1 Definitions

Architect, Engineer, Surveyor: An individual licensed and registered by the State of Tennessee to practice architecture, engineering, or surveying, respectively, in the State of Tennessee.

City Engineer: The official, or designee, with responsibility to review and release plans for construction projects. Street and drainage plans shall be the responsibility of the Public Works City Engineer, and water and sewer plans shall be the responsibility of the Water and Sewer Service Department Engineer.

Completed Preliminary Plat: A completed preliminary plat shall contain all items as specified in Article 3, Section 3-2.2. The subdivision fee in conjunction with the plat is also required for a completed submission.

Completed Final Plat: A completed final plat shall contain all items as specified in Article 3, Section 3-2.4.5. The subdivision fee in conjunction with the plat is also required for a completed submission, if not previously submitted.

Comprehensive Plan: The *Comprehensive Plan* of the city of Johnson City adopted by the *Planning Commission* and the Board of Commissioners.

Condominium: A development of one or more buildings which contain for-sale or individually-owned units.

Construction: Construction of streets, stormwater infrastructure, and/or the water and sewer lines has commenced. Where excavation, demolition, or removal of an existing building has been substantially begun prior to rebuilding, such excavation, demolition, or removal shall be deemed to be construction: provided that work shall be carried on diligently and complies will applicable requirements.

County Health Officer: An officer of the Carter County, Sullivan County, or Washington County Health Department and/or the State of Tennessee Department of Health and Environment.

County Road Commissioner: The Road Commissioner of Washington County, Tennessee.

Cul-De-Sac: A lane or local street, one end of which is permanently closed and consists of a turn around.

Development: Any manmade change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations.

Driveway: A private accessway that provides vehicular access from an approved public or private street to individual buildings or a parking lot.

Easement: A grant by the owner of land for the use of that land by others, including the public, for a specific purpose or purposes.

Engineer: See Architect.

Lot: A Platted parcel of land.

Lot Types:

Corner Lot: A lot located at the intersection of two or more Streets.

Double Frontage Lot: A lot, other than a corner lot, with frontage on more than one street.

Flag Lot: A lot with access to an approved street provided to the bulk of the lot by a narrow strip of land that is part of the lot.

Interior Lot: A lot with frontage on only one street.

Major Thoroughfare Plan: A component of the *Comprehensive Plan* of the city of Johnson City as adopted by the *Planning Commission* and the Board of Commissioners, also known as the Major Thoroughfare Plan.

Median: A paved or planted area separating a street or highway into 2 or more traffic lanes of opposite direction of travel.

Minor Subdivision: The division of a tract or parcel of land which does not involve new street, utility, or drainage construction. This shall include dividing an existing tract, shifting existing property lines so that the number of resulting parcels is unchanged, and changing existing property lines to reduce the number of tracts.

Multiple Building Development: A *Multiple Building Development* is one which contains two or more buildings on a single tract or parcel intended for multiple separate occupants. Such a development may be either residential or non-residential and either renter-occupied or divided into *condominium* units for sale.

Parcel: See lot.

Permanent Easement: An easement providing legal access from one or more lots to an existing highway, street, or thoroughfare. Maintenance of such permanent easements shall not be the responsibility of Johnson City or the county.

Planned Unit Development: A development of one or more buildings offering space for sale, rent, or lease in which instance the unit includes the portion of the structure comprising the unit and the platted lot of land beneath the unit.

Planning Commission: The Johnson City Regional *Planning Commission*.

Planning Region: The area over which the *Planning Commission* has jurisdiction for Subdivision approval under the authority of the Local Government Planning Advisory Committee. Reference Figure 1.

Plat: A map or plan of a parcel of land that is used for the purpose of subdividing property, dedicating right-of-way, or dedicating *easements*.

Private Street: A *street* built to public *street* standards which is not dedicated for public use or maintenance.

Rental Development: A *development* of one or more buildings offering space for lease or rent.

Right-of-Way: A strip of land reserved, used, or to be used for *streets*, alleys, crosswalks, *utilities*, sidewalks, street trees, and/or similar uses.

Sinkholes: Natural, bowl-like depressions, found in karst terrain systems, which occur with the development of effective, underground conduit drainage.

Site Preparation: means excavation, grading, demolition, drainage, and physical improvements such as water and sewer lines, footings, and foundations.

Sketch Plat: A sketch plat is a nonbinding subdivision plan which is submitted for an informal consideration by the Planning Commission. The sketch plat shall include as a minimum the delineation of streets and lots.

Standard Subdivision: The division of a tract or parcel of land which involves new *street*, *utility*, or drainage construction.

Street: A public or private thoroughfare used, or intended to be used, for passage or travel by motor vehicles. For purposes of these regulations, *street* shall include roads, highways, boulevards, alleys, parkways, lanes, and other ways of vehicular access. *Streets* are further classified by the functions they perform as arterial, major collector, minor collector, local (residential and non-residential), residential feeder, lane, alley, or rural.

Subdivision: The division of a tract or parcel of land into two or more lots, sites, or other divisions requiring new *street* or *utility* construction, or any division of less than five 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 (TCA 13-3-401). **Note:** By opinions of the City Attorney in 1994 and 1996, several categories of development now qualify as *subdivisions* which were previously not considered as such. For further explanation, contact the Development Coordinator prior to design.

Subdivider: Any person, firm, or corporation who subdivides land.

Surveyor: See Architect.

Utility: Any community service available to the public by means of a distribution or collection system, such as water, sanitary sewer, stormwater sewer, electricity, gas, telephone, cable, and others.

Zoning Ordinance: *The Zoning Ordinance* for the city of Johnson City or the Zoning Resolution for Washington County, Tennessee as appropriate.

ARTICLE 3

PROCEDURE FOR PLAT APPROVAL

3-1 General Provisions

Any person desiring to subdivide any tract or *parcel* of land, or to change or rearrange any line dividing two or more *lots*, sites, or other divisions of land within the jurisdiction of the *Planning Commission* shall comply with the procedures established in these regulations.

3-1.1 The following categories of *subdivisions* and *plats* are established to permit approval procedures which are appropriate to each category. The definition of each category is found in Article 2 and the procedures which apply to it are described in the following sections:

- (1) Standard Subdivision
- (2) Minor Subdivision (or replat)
- (3) Condominium Location Plat
- (4) Multiple Building Development

3-1.2 Conversion

Any *rental multiple building development* approved after May 13, 1997, which is subsequently proposed to be converted to *condominium* ownership must meet the standards which would have applied to the project if it had been originally proposed as a *condominium* project. Such conversions shall be reviewed by the *Planning Commission* prior to *plat* approval.

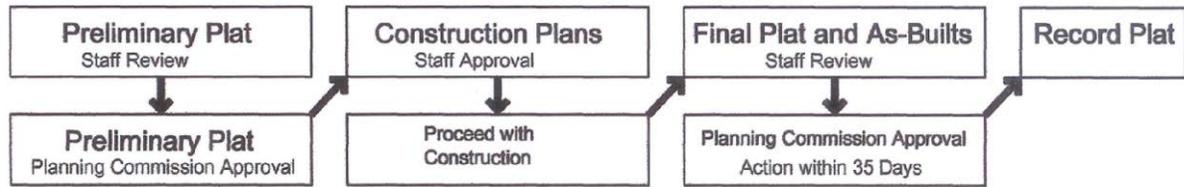
3-2 Standard Subdivision

The procedure for review and approval of a *standard subdivision* consists of the following steps and is reflected in Figure 2, Subdivision Approval Process.

3-2.1 Predesign Conference

The *subdivider*, owner, or designer is encouraged to consult with city staff early in the process to avoid unnecessary expense and delay. This meeting shall cover such topics as *subdivision* procedures, design and construction standards, review and approval schedules, zoning regulations, and Comprehensive Plan policies. A sketch *plat* may be submitted for informal review by city staff, and may also be submitted for consideration for a nonbinding approval by the Planning Commission. The sketch plat shall include as a minimum the delineation of streets and lots.

Figure 2
Subdivision Approval Process



3-2.2 Preliminary *Plat*

Preliminary approval consists of the following multi-stage process:

3-2.2.1.a Preliminary Plat

Five (5) sets of plans shall be submitted to the Development Coordinator for review by the 15th day of the month preceding the *Planning Commission* meeting. The completed preliminary plat shall be approved or disapproved within 35 days of the initial consideration of the plat by the Planning Commission. Failure of the *Planning Commission* to act on the preliminary plat within 35 days shall deem the plat approved. The preliminary plat shall include the following information:

- (1) All property lines and *rights-of-way*, drawn to a scale no greater than 1" = 100'.
- (2) *Subdivision* name and location.
- (3) Names and addresses of owner(s), *surveyor*, and *engineer*.
- (4) Date of *plat*.
- (5) North arrow.
- (6) Graphic scale.
- (7) Location of all existing natural or manmade features or structures. On all underground items, the locations, pipe sizes, and direction of flow shall be indicated.
- (8) Location and width of existing *easements*.
- (9) Present zoning classification.
- (10) Names of adjoining *subdivisions* and property owners.
- (11) Acreage of land being subdivided.

- (12) Location map showing the relationship of the *subdivision* site to the surrounding area.
- (13) Computed square footage of each *lot*.
- (14) Existing topography at 2' contour intervals.
- (15) Identify the FIRM 100-Year Floodplain.
- (16) A typical cross section of each *street* and preliminary *street* profiles referenced to North American Vertical Datum 88.
- (17) Identify areas to be set aside where stormwater management facilities are anticipated. Stormwater facilities include stormwater detention and stormwater quality facilities.
- (18) Type and location of all traffic calming devices.
- (19) The *subdivider*, as a condition necessary for review of proposed plans, may be required to have the centerline of all proposed *streets* staked. The *subdivider* shall contact the Development Coordinator prior to submitting the preliminary plat to determine the need for centerline staking. The centerline shall be maintained until the *subdivider* receives notification that the plans have been reviewed.
- (20) Sight distances at each entrance and exit along existing roadways.
- (21) Right-turn lanes for each entrance along collector and arterial roadways.
- (22) The required processing fee.

3-2.2.1.b Utility Notification

In addition to the five (5) sets of plans required in 3-2.2.1 (a), the *developer* shall provide a sufficient number of additional sets of the preliminary plat for local utilities which will or may provide service within the subdivision. These additional copies may be provided either as paper copies to the Development Coordinator's office or directly to each utility, in either paper or electronic form. If the developer chooses to provide paper copies to the Development Coordinator's office, the Development Coordinator shall notify each utility of the plan's availability according to such notification procedure as the Development Coordinator determines.

3-2.2.2.a Construction Plans

Within 6 months of receiving preliminary plat approval, the *subdivider* shall submit 5 sets of construction plans drawn on 24" by 36" sheets. Large projects may be drawn on sheets no larger than 30" by 42", with a scale not less than one 1"=100' horizontally and 1" = 5' or 1" = 10' vertically. After submittal of the construction plans, the Public Works Engineering Division, Development Services, Planning Division, and Water and Sewer Services Department shall review the construction plans. Within 2 weeks, the Planning Division will notify the *subdivider* of any deficiencies. Upon correction of the deficiencies, the *subdivider* shall provide 10 sets of construction plans to the Development Coordinator who will stamp the plans approved and return 5 copies. A surcharge of 25% of the original subdivision fee shall be assessed if a third or multiple reviews is required to address previously noted deficiencies. (This fee may also be applied to multiple reviews of the Preliminary Plat, and the owner will be notified). The construction plans shall reflect the approved preliminary plat and include the following information:

- (1) Cross sections of each street, street profiles (referenced to North American Vertical Datum 88) with stations indicated, percent grades on slopes, vertical curve lengths, k-values, *street* and right of-way widths, centerline bearings and curve radii, and turning radii.
- (2) The proposed stormwater system including drainage basins, pipe locations, sizes, grades, profiles, and depths, catch basins and their locations, sizes and construction details of other structures such as ditches, flumes and headwalls, and calculations as required in the Johnson City Public Works Department's standards of latest issue.
- (3) The water distribution system including pipe locations and sizes, the location of valves, service laterals and fire hydrants, profiles of the system and hydraulic grade lines.
- (4) The sanitary sewer collection system including design calculations, pipe locations, sizes, profiles, service line locations and elevations (North American Vertical Datum 88) of manholes.
- (4) The grading plan showing existing contours in dashed lines and final grading contours in solid lines at vertical intervals of not more than two feet based on North American Vertical Datum 88.

- (5) A pavement design shall be provided with certification that the pavement design will meet or exceed minimum pavement requirements. The pavement design shall be based on the California Bearing Ratio (CBR) soil test for each soil type located in the proposed roadway.
- (6) Refer to the "Subdivision Construction Plans Check List", included in the appendix of these regulations for additional information to include in the Construction Plans.
- (7) The location of all *easements*.

3-2.2.2.b Construction plans shall be provided to each local utility according to the provisions described in 3-2.2.1(b).

3-2.2.3 The *subdivider* shall not proceed with construction of the *subdivision* or preparation of the final *plat* until after preliminary plat approval is obtained from the *Planning Commission* and the construction plans have been approved by the city. All construction shall conform to the approved construction plans. Prior to initiating construction, the *subdivider* shall obtain any required federal, state, and local permits.

3-2.2.4 The *subdivider* shall schedule a preconstruction meeting with city staff prior to beginning construction.

3-2.3 Required Execution

3-2.3.1 Construction Standards

Every *subdivider* shall be required to install all *streets* and *utilities* in accordance with the Johnson City Water and Sewer and Public Works Departments' standards of latest issue and in accordance with the approved preliminary *plat*.

3-2.3.2 Monuments

Monuments shall be located in the proposed *subdivision* as specified below:

- (1) Concrete monuments shall be 4" in diameter or 4" square, 3' long, with a flat top, and an indented cross to identify properly the location.
- (2) Monument spikes shall be iron rods 24" in length and ½" in diameter.
- (3) Pins shall be ½" iron pins or ¾" iron pipe 24" long.
- (4) Concrete monuments shall be set at all points where the *street right-of-way* lines intersect the exterior boundaries of

the *subdivision*. The top of the monument shall be set level with the finished grade.

- (5) Monument spikes shall be set along the centerline of all *streets* at intersecting centerlines, at all points of curve and points of tangents, and at the center of all turnarounds; and set flush with the finished grade.
- (6) Iron pins shall be set at all *lot* corners flush with the finished grade.

3-2.4 Final *Plat* and “As-built” Plans

3-2.4.1 Conformity

The final *plat* shall conform to the preliminary *plat* as approved. The *subdivider* has the option of requesting approval of the entire *plat* or only that portion which is proposed to be recorded and developed at that time, provided it conforms to all requirements of these regulations.

3-2.4.2 Accuracy

The unadjusted linear error of closure of the boundary survey shall not exceed 1' per 5,000 feet of perimeter. The angular error of closure shall not exceed 30 seconds times the square root of the number of angles turned. The *surveyor* shall provide the *Planning Commission* sufficient evidence to verify compliance with the above-specified accuracy.

3-2.4.3 Filing and Submittals

- (1) The final *plat* and “as-built” plans shall be submitted to the *Planning Commission* by the 15th day of the month preceding the *Planning Commission* meeting. If the 15th day falls on a Saturday, Sunday, or legal holiday which prevents the staff from receiving the plans, the deadline is extended to 9:00 AM on the next regular workday. When more than one final *plat* sheet is required, an index sheet of the same size shall be filed showing the entire *subdivision* with the sheets lettered in alphanumeric order as a key.
- (2) The completed final *plat* shall be approved or disapproved within 35 days of the initial consideration of the *plat* by the *Planning Commission*. If a *plat* is disapproved, reasons for such disapproval shall be stated in writing. If approved subject to modifications, such modifications shall be indicated in the minutes of the *Planning Commission* meeting. Failure of the *Planning Commission* to act on the final *plat* for properties within 35 days shall deem the *plat* approved.

- (3) The approval of the final *plat* by the Planning Commission will not constitute acceptance by the public of the dedication of any *streets* or other public way or ground.
- (4) Two copies of the final *plat* will be returned to the *subdivider* for filing in the office of the Register of Deeds as the original *plat* of record. The original *plat* containing the certification of the *Planning Commission* will be filed in the Planning Division. *Standard subdivision plats will be filed in the office of the Register of Deeds by city staff. Copies will then be returned to the *subdivider*.

3-2.4.4 Verification

The *surveyor* of the *subdivision* shall request the accompaniment of the Engineering Division to the *subdivision* to verify that the monuments have been placed in the *subdivision* prior to the first of the month following the submission of the final plat to the *Planning Commission*. The Engineering Division will request the *surveyor* to verify by field measurement no more than 3 boundary lines and 2 interior angles to the following accuracies:

- (1) Distance measurement shall be accurate to $\pm 1'$ in 2,500.
- (2) Angle measurements shall be accurate to $\pm 0^{\circ} 01'$ (1 minute).

Measurements not within the above accuracies when compared to platted lines and bearings on the final *plat* shall be corrected by changing the Platted information or revising the monument locations. Final survey unadjusted closure notes and any subsequent revisions shall be attached to the final *plat* and shall be certified by the *surveyor* preparing the final *plat*.

3-2.4.5 Final Plat Contents

The original and 10 copies of the final *plat* shall be drawn to a scale of 1"=100' horizontal on an 18" by 24" sheet containing the following information:

- (1) The lines of all *streets* and alleys, *lot* lines, *lots* numbered in numerical order, reservations, *easements*, and any areas to be dedicated to public use or sites for other than residential use with notes stating their purpose and any limitations.
- (2) Sufficient data to determine readily and reproduce on the ground the location, bearing and length of every *street* line, *lot* line, *easement*, boundary line, block line, and building line whether curved or straight, and including true north point. This shall include the radius, central angle, and tangent distance for the center line of curved *streets* and curved property lines that are not the boundary of curved *streets*.

- (3) All dimensions to the nearest 100th of a foot and angles to a 20 second accuracy.
- (4) Location and description of monuments.
- (5) The names and locations of adjoining *subdivisions* and *streets* and the location and ownership of adjoining unsubdivided property.
- (6) Date, title, name, and location of *subdivision*, graphic scale, and north arrow.
- (7) Location sketch map showing site in relation to area.
- (8) Unadjusted closure notes and any subsequent revisions to the final survey.
- (9) Flood notes that address the following areas:
 - (9.1) The subject property does (not) lie in an area designated as special flood hazard on the Flood Insurance Rate Map, of most recent issue.
 - (9.2) The subject property does (not) contain visible sinkholes. The Zoning Ordinance of Johnson City defines all sinkholes to have a 25-year “No-Build” and a 100-year “Floodplain” line, which restricts or modifies development adjoining or draining to a sinkhole.
 - (9.3) The subject property does (not) contain a visible unmapped stream. Small streams are not shown on the Flood Insurance Rate Maps, and the Zoning Ordinance of Johnson City regulates development near unmapped streams.
- (10) Refer to the “Final Plat Check List”, included in the appendix of these regulations for additional information to include in the Final Plat.
- (11) Certification showing that the applicant is the landowner and dedicates *streets*, *rights-of-way*, and any sites for public use.
- (12) Certification by an *engineer* or *surveyor* of accuracy of the survey and *plat* and placement of monuments.
- (13) Certification by the *City Engineer* that all improvements have been installed in accordance with the requirements of these regulations; or

- (14) Certification by the *City Engineer* that an improvement bond in sufficient amount to assure the completion of all remaining improvements has been posted with the *Planning Commission* with said amount stated on the *plat*, provided the *subdivider* meets the following conditions:
- (14.1) All proposed roads must be graded, have a gravel base, and binder asphalt layer as shown in the approved construction plans.
- (14.2) All water, sewer, and drainage improvements (which may include curb, gutter, pipes, catch basins, ditches, and detention pond improvements) must be in place and have been tested and approved by city inspectors.
- (14.3) The following types of bonds will be accepted, at the *Planning Commission's* discretion:
1. Cash bond; and
 2. An irrevocable letter of credit from a bank (Standard form letter to be provided by the city);
- (14.4) All improvements must be completed within one year after approval is given to the final *plat* unless an extension is requested by the *subdivider* and granted by the *Planning Commission*. A fee of \$100 will be required for any extension and the remaining bond amount will be recalculated.
- (14.5) The amount of the bond will be determined by the *City Engineer* and will be based on the cost of all remaining improvements plus 25%.
- (15) A warranty bond from the *subdivider* in the amount of 10% of the cost of all improvements, not to exceed \$10,000.00, shall be held by the city for a period of 12 months and shall cover all improvements installed by the *subdivider*. After all improvements have been approved by the city, the improvements and warranty bond shall be presented to and accepted by the *Planning Commission*. That approval date will mark the beginning of the 12 month warranty period. Warranty bonds shall be administered by the Development Coordinator in conjunction with the Water and Sewer Services Department and Public Works Department.
- (16) Certification by the County Health Officer and/or Director of the Water and Sewer Services Department that sewage

disposals and water systems meet the requirements of the Tennessee State Department of Health.

- (17) Certification of approval to be signed by the Secretary of the *Planning Commission* or other authorized official.

3-2.4.6 Street Naming

All public street names must be approved by the Washington County Emergency Communications District and must adhere to the following guidelines:

- (1) No duplication of street names will be permitted.
- (2) No naming of alleys shall be permitted.
- (3) Avoid using standard street type/suffix as road name. Example: Street Drive.
- (4) Avoid similar or same sounding names. Example: Stewart, Stuart.
- (5) Avoid numbers as a name. Example: First Street, 81 Loop.
- (6) Avoid special characters such as hyphens, apostrophes, and periods in a name.
- (7) Avoid directional bearings being used as a name. Example: North Street, South Point.
- (8) If a directional bearing must be used it should be abbreviated. Example: N, S, E, W.
- (9) Avoid double type/suffixes as a name. Example: Cedar Point Road.
- (10) Avoid abbreviations of a street name. Example: St. Clair should be Saint Clair.
- (11) Type/suffix shall be consistent for the type of roadway. Example: Drive, Street, Avenue should be used on through streets. They should never be used on dead-ends or cul-de-sacs. Dead-end roads should be identified as a Court, Lane, Park, Point, or Way.
- (12) Road name length should not be longer than 25 characters.

3-2.4.7 "As-built" Plans

All plans submitted shall be certified by an *engineer* or *surveyor*. The certification shall include a validated professional's seal and a signed statement, printed on the "As-built" plans, stating that the information presented in the "As-built" Plans is based on a survey of the improvements in their "as-built" condition, and that the

information is in accordance with the Johnson City Water and Sewer and Public Works Departments' standards of latest issue. The original and 5 copies of the final grading plan, and plans of completed improvements, shall be drawn to a scale of 1"=100' horizontal, 1"=5' or 1"=10' vertical, on sheets no larger than 24" by 36". Large projects may be drawn on sheets no larger than 30" by 42". "As-built" plans shall be prepared in the same manner as the construction plans, and shall include the following information:

- (1) Cross sections of each street, street profiles (referenced to sea level datum) with stations indicated, percent grades on slopes, vertical curve lengths, k-values, *street* and right of-way widths, centerline bearings and curve radii, and turning radii.
- (2) The proposed stormwater system including drainage basins, pipe locations, sizes, grades, profiles, and depths, catch basins and their locations, sizes and construction details of other structures such as ditches, flumes and headwalls, and detention and water quality basin volumes.
- (3) The water distribution system including pipe locations and sizes, the location of valves, service laterals and fire hydrants, profiles of the system and hydraulic grade lines.
- (4) The sanitary sewer collection system including design calculations, pipe locations, sizes, profiles, service line locations and elevations (North American Vertical Datum 88) of manholes.
- (4) The as-built grading plan showing pre-construction contours in dashed lines and as-built grading contours in solid lines at vertical intervals of not more than two feet based on North American Vertical Datum 88.
- (5) Refer to the "Subdivision As-Built Plans Check List", included in the appendix of these regulations for additional information to include in the "As-Built" Plans.

3-3 Minor Subdivision

3-3.1 Administrative Approval

A *minor subdivision* of not more than 1 new lot may be administratively approved by the *Planning Commission* staff, provided that no variance from the *subdivision* regulations has been requested. Any *minor subdivision* or

replat which involves a variance from the *subdivision* regulations shall be approved by the *Planning Commission*.

3-3.2 Submission

The following items are required for submission of a *minor subdivision*:

- (1) A final *plat* sheet, drawn on mylar, to final *plat* standards as described in Article 3-2.4.5 (1-8, 11-12). The original and 3 copies of the final *plat* sheet shall be submitted.
- (2) The name, address, and telephone number of the owner or designated representative.
- (3) A storm water management plan.
- (4) Sight distances at each proposed entrance and exit along existing roadways.
- (5) The required processing fee.

3-3.3 Review

Upon receipt of all required items, city staff shall review the proposed *subdivision* to determine its conformance with the *subdivision* regulations. Any deficiencies will be brought to the attention of the *subdivider* for correction.

3-3.4 Approval

Upon verification that the final *plat* meets all regulations, it shall be signed by the appropriate officials and 2 copies provided to the *subdivider* for recording in the Office of the County Register. The original *plat* sheet will be filed in the Planning Division.

3-3.5 Schedule

There is no deadline for submitting *minor subdivision plats*. Every effort will be made by city staff to review such *plats* expeditiously.

3-3.6 Exception

Where a *minor subdivision plat* divides a single *parcel* or tract into 2 *parcels* or tracts, and where the original *parcel* or tract is not part of a previously recorded *subdivision plat*, then the provision of Article 3-2.4.4 shall apply, with the following exceptions:

- (1) The submitted *plat* drawing may be on paper (8 1/2" x 14" or smaller) rather than on a standard mylar *plat* sheet.
- (2) The submitted *plat* drawing shall clearly identify the location, length, and bearing of each new property line. The drawing shall be made to an appropriate scale and so labeled.

- (3) Upon review and approval of the submitted *plat* or replat, the Secretary of the *Planning Commission* or other authorized official shall stamp and sign the *plat* drawing, which is to be attached to and recorded with the deed to the *parcel* or *parcels* created.

3-4 Multiple Building Development

3-4.1 Categories

The following categories of *multiple building developments* are established to provide appropriate standards for *condominium* and *rental developments*.

3.4.1.1 Single-family and two-family Developments

All single-family and two-family developments shall provide internal access built to public street standards in accordance with Article 4, General Requirements & Standards of Design.

3-4.1.2 Multi-family Rental Development

A rental development containing buildings with three or more units shall provide internal vehicular access to each building by a driveway in accordance with the minimum standards of Section 11.2.8 of the Parking Regulations in the Zoning Ordinance. In addition, adequate pedestrian access to connect each building to the nearest public right-of-way shall be provided. The location and layout of the pedestrian access shall be at the discretion of the developer and approved by the staff. All pedestrian access trails shall be a minimum of four feet in width and be constructed of asphalt, concrete, or other hard-surface materials approved by the Planning Commission. Access between buildings and parking areas shall meet all applicable ADA and Fair Housing standards for accessibility.

3-4.1.3 Multi-family Condominium Development

A condominium development containing buildings with three or more units shall provide internal vehicular access to each building by a driveway in accordance with Johnson City Public Works Department's Standards of latest issue for pavement width and thickness. In addition, adequate pedestrian access to connect each building to the nearest public *right-of-way* shall be provided. The location and layout of the pedestrian access shall be at the discretion of the developer and approved by the staff. All pedestrian access trails shall be a minimum of four feet in width and be constructed of asphalt, concrete, or other hard-surface materials approved by the Planning Commission. Access between

buildings and parking areas shall meet all applicable ADA and Fair Housing standards for accessibility.

3-4.1.4 Multi-family Planned Unit Development

A subdivision involving the development of two or more units with each unit including a structure containing the roof, walls, and other necessary building components situated on a parcel of land and sold as such. The subdivision of land shall only include the dimensions of the unit and land not maintained by the homeowners association. The parcel/lot is not required to meet the minimum lot size of the zoning district in which it is located. The parcel does not require frontage on a public right-of way. Such subdivision shall be approved by the Planning Commission in accordance with an approved Concept Plan or site plan.

3-4.2 Submittals

Multiple building developments required to provide access by a *driveway*, or public *street* shall meet the applicable following standard.

3-4.2.1 *Driveway Category*

All multiple building *developments* required to provide access by a *driveway* shall be required to submit five (5) sets of *development* plans with the required processing fee to the Development Coordinator for staff review. The *development* plan shall contain the following information:

- (1) The location and dimensions of all existing and proposed roads, *driveways*, entrances and exits, lanes, *easements*, and parking areas, including the number of parking spaces;
- (2) Proposed use, building sizes and locations, and number of units;
- (3) Boundary and dimensions of the tract;
- (4) Location and extent of existing and proposed landscaping, buffer yards, fences, lighting, and pedestrian walkways;
- (5) The complete grading and erosion control plan, including existing and proposed drainage facilities. If required by the *City Engineer*, storm water runoff calculations and detention facility plans shall also be submitted;
- (6) Profiles of proposed sanitary sewers and stormwater sewers with grades, sizes, and elevations indicated;
- (7) Proposed water distribution system showing pipe sizes and the location of all pumps, valves, and fire hydrants; and

- (7) The location and extent of other *utility* facilities, including electric, telephone, and TV cable lines, natural gas lines, and poles for power or telephone.

- (8)

3-4.2.2 Public Street Category

Multiple building developments required to provide access by a public *street* shall meet the provisions of Article 4, General Requirements & Standards of Design.

3-4.3 Procedure

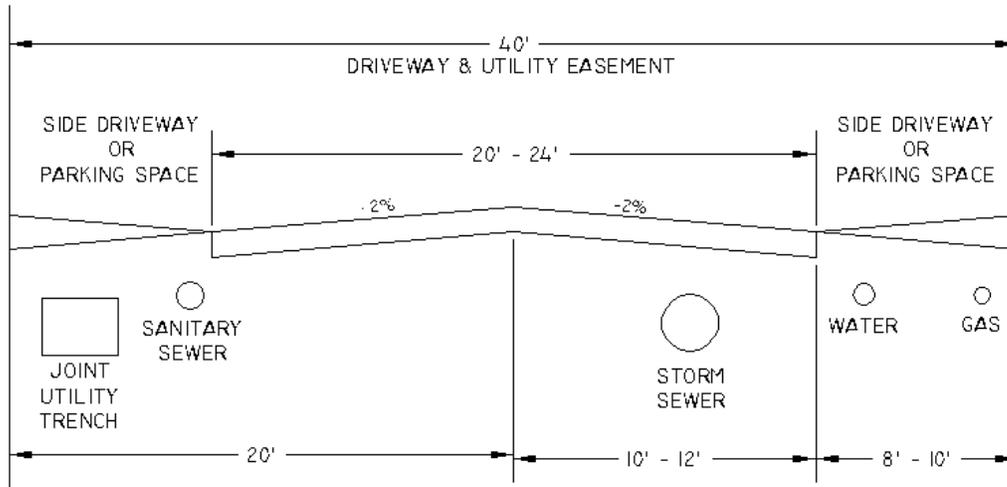
3-4.3.1 Review and Approval

- (1) A *multiple building development* which provides access by a *driveway* or *easement* may be approved by staff, provided it complies with all applicable city codes and standards, including the *Subdivision* Regulations and the Water and Sewer and Public Works Departments' standards of latest issue. After review, the Development Coordinator shall notify the applicant of approval or any reasons for disapproval. Any disagreement between staff and applicant may be appealed to the *Planning Commission* by the applicant. Such appeal must be submitted in writing to the Development Coordinator at least ten (10) working days before the next *Planning Commission* meeting.
- (2) *Multiple building developments* required to provide access by a public *street* shall conform to the requirements of Section 3-2, *Standard Subdivision*.

3-4.3.2 Schedule

- (1) Plans for *multiple building developments* which provide access by a *driveway* may be submitted to staff at any time.
- (2) *Multiple building developments* required to provide access by a public *street* shall conform to the requirements of Section 3-2, *Standard Subdivision*.

Figure 3 Driveway & Utility Easement



ARTICLE 4

GENERAL REQUIREMENTS & STANDARDS OF DESIGN

4-1 Streets

The scope of these standards is to allow new *streets* and roads in the *planning region* to conform to the Major Thoroughfare Plan of the *planning region*, and to ensure that *private streets* and drives conform to certain standards of design.

4-1.1 General Provisions

4-1.1.1 Private Streets and Driveways

Every subdivided property shall be served from a publicly dedicated *street*, except for developments approved under the RP Zoning Districts that with Planning Commission approval of the Generalized Site Plan may contain private streets. All *private streets* shall conform to the standards of design that follow except for those provisions regarding *rights-of-way*. *Private streets*, permanent easements, and *driveways* may be gated provided the gate conforms to the standards set forth in Article 5.

4-1.1.2 Right-turn Lanes

Subdivisions located on collector, arterial, or streets with average daily traffic (ADT) volumes of 1,500 trips or higher shall provide a right-turn lane into the subdivision.

4-1.1.3 Additional *Right-of-Way* Dedication

Subdivisions that adjoin existing *streets* shall dedicate additional *right-of-way* to meet the minimum *right-of-way* widths required by these regulations. The entire *right-of-way* shall be provided where any part of the *subdivision* is on both sides of the existing *street*. When the *subdivision* is located on only one side of an existing *street*, one-half of the required *right-of-way*, measured from the centerline of the existing roadway, shall be provided.

4-1.1.4 Restriction of Access

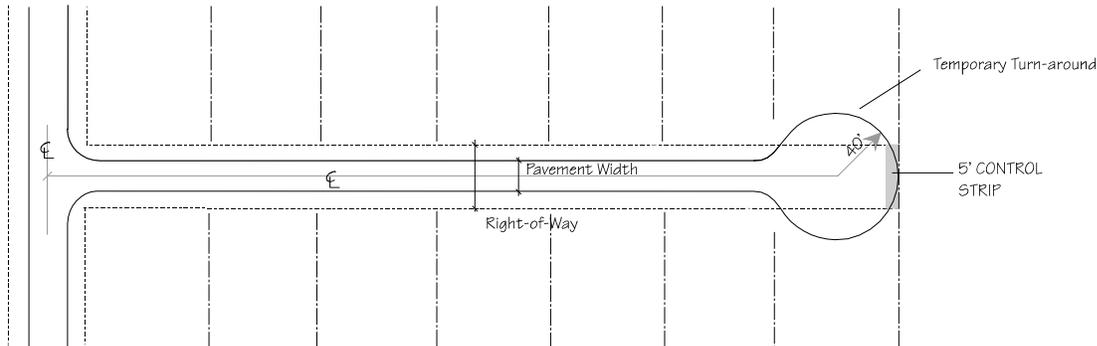
Where a *subdivision* abuts or contains an existing or proposed major *street*, the *Planning Commission* may require design adjustment as necessary for adequate protection of residential properties.

4-1.1.5 Control Strip

There shall be an access control strip along the final five feet of *rights-of-way* along the exterior boundary of a *subdivision*. No person shall cross or otherwise utilize this control strip without approval from the *Planning Commission*. There shall be no control

strips restricting access to *streets* except where access to such strip is dedicated as public *right-of-way* and the control of such strips is placed with the *Planning Commission*.

Figure 4
Control Strip



4-1.1.6 Street Trees

Although not required by these regulations, the planting of *street* trees is considered a duty of the *subdivider* as well as good business practice. *Street* trees are a protection against excessive heat and glare and enhance the attractiveness and value of abutting property. *Street* trees shall be planted between the curb and the sidewalk as illustrated in Figures 4-16 unless the *utility* strip is less than 6' wide, in which case they shall be planted behind the sidewalk on private property. Any plantings within a street right-of-way must receive a permit from the City Forrester. A list of acceptable *street* trees shall be maintained by the City Forrester.

4-1.1.7 Street Names

Proposed *streets* which are obviously in alignment with existing and named *streets*, shall bear the names of those existing *streets*. In no case shall the name of a proposed *street* duplicate an existing *street* name. *Street* names shall be coordinated through the *Planning Commission* with E-911 to avoid duplication.

4-1.1.8 Street Signs

Street name and traffic control signs meeting standard city specifications shall be installed at the *subdivider's* expense immediately upon completion of the *street* and prior to the opening of the *street* for public use. Traffic control signs shall be placed in accordance with the interpretation of the Manual on Uniform Traffic Control Devices of latest revision, by the *City Engineer* or authorized representative.

4-1.1.9 *Street Lighting*

The *subdivider* shall consult with the *utility* company to service the *subdivision* with power and locate on the design plans the probable location of *street* light poles. The entire cost of providing *street* lighting will be at the city's expense; however, should the *subdivider* request lighting not typically specified by the city, the additional cost shall be the responsibility of the *subdivider*.

4-1.2 Residential *Streets*

Streets serving predominantly residential areas shall be designed to a design speed of 25 mph and shall comply with the design standards set forth in this section and illustrated in Figures 3–10. Any deviation shall be approved by the *Planning Commission* as a variance during the *plat* approval process.

4-1.2.1 Policy

It shall be the policy of the *Planning Commission* to require reasonable access among adjacent *developments* by providing for adequate *street* connections. To implement this policy, the following guidelines shall be adhered to:

- (1) Where *street* stubs exist next to proposed *development*, connection shall be required to provide an adequate *street* network. If the number of existing *street* stubs is excessive, the *Planning Commission* should consider not requiring connection to every one.
- (2) Where adjacent land is undeveloped, *street* stubs shall be required of proposed *development* to ensure an eventual sufficient and adequate *street* network.
- (3) No *subdivision plat* shall be approved which precludes or interferes with the creation of an eventual neighborhood *street* network. Long, narrow *lots* or "flag *lots*" which would prevent *street* connections between adjacent tracts shall be discouraged.
- (4) *Cul-de-sacs* (permanent dead-end *streets*) may prevent extension and connection of neighborhood *streets*. Where *cul-de-sacs* are used, the *development* shall be designed to ensure that adequate and sufficient *street* connections are made.

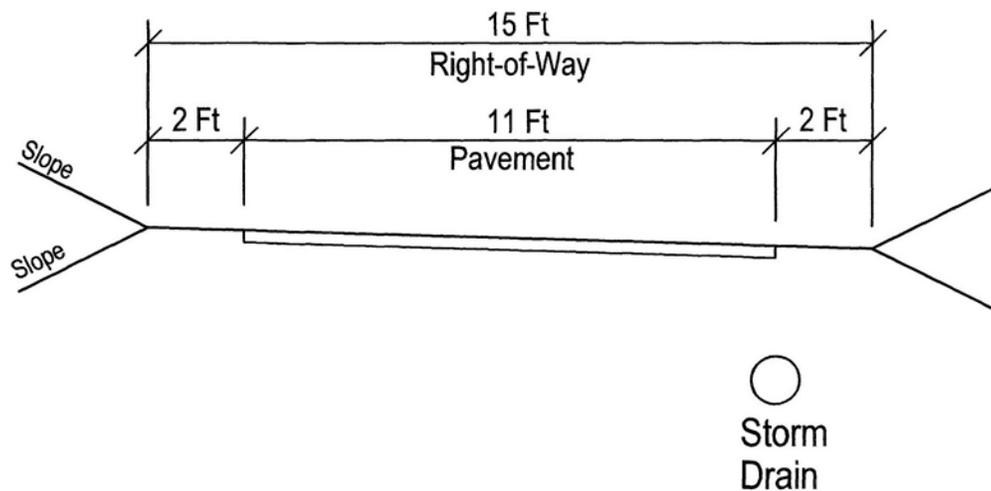
4-1.2.2 Classifications and Cross-sections

The following classifications and *street* cross-sections shall be the established standard. Reference figures 3–8. All *right-of-way* widths shall be the minimum *right-of-way* width required. All *street* widths, and sidewalk locations are required. The location of items not dimensioned are schematic.

Figure 5 Alley

A street set aside primarily for vehicular access to the side or rear of properties otherwise abutting a street.

Right-of-way	15 Feet
Pavement Width	11 Feet
Pedestrian	None



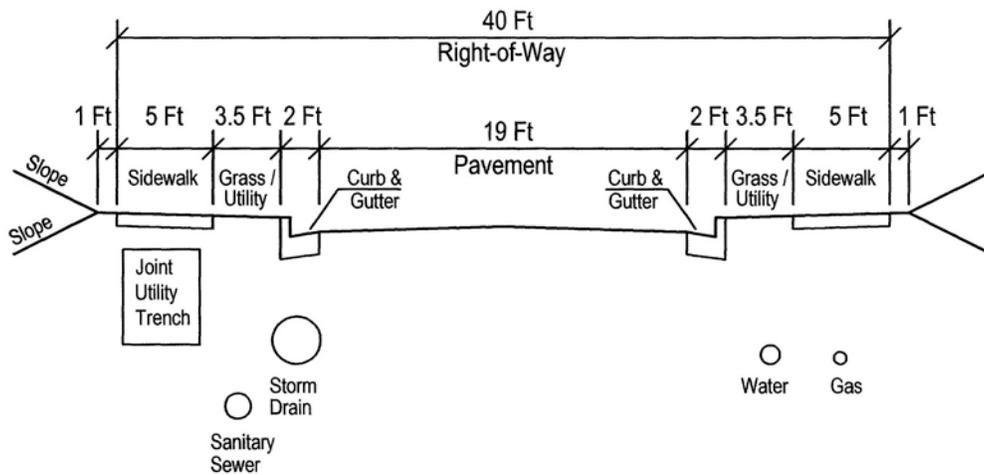
PAVEMENT SCHEDULE

6.00" Mineral Aggregate Base Material
 1.75" Binder Course
 1.25" Surface Course

Figure 6
Lane

A street designed to carry up to 240 vehicles per day, which may be configured as a through street, a loop street or a cul-de-sac.

Right-of-way 40 Feet
 Pavement Width 19 Feet
 Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)



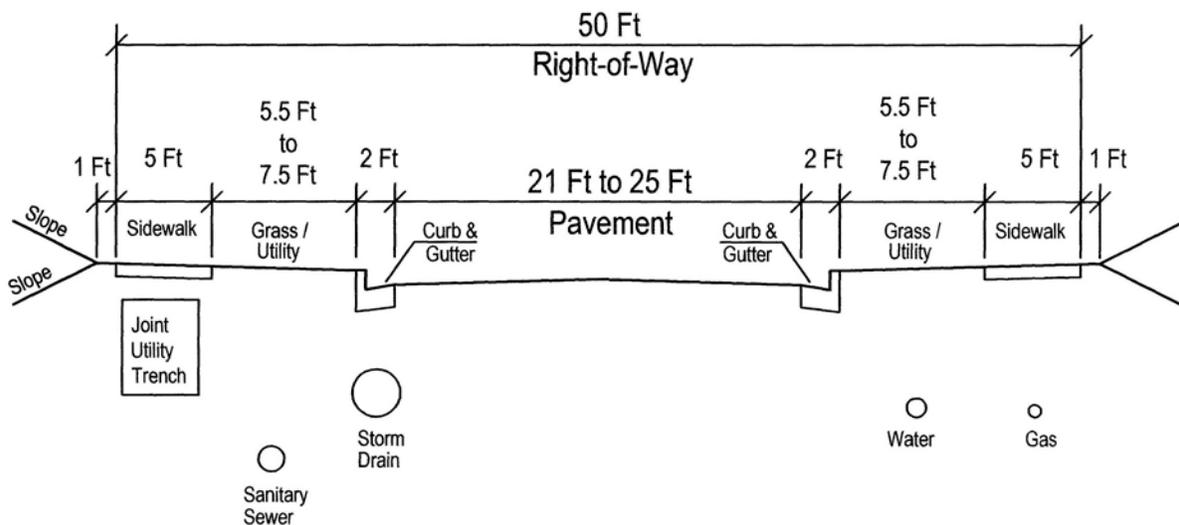
PAVEMENT SCHEDULE

- 6.00" Mineral Aggregate Base Material
- 1.75" Binder Course
- 1.25" Surface Course

Figure 7 Local Street

A street designed to carry between 240 and 1,500 vehicles per day. The street's pavement width may vary from 21 feet to 25 feet at the discretion of the subdivider.

Right-of-way 50 Feet
 Pavement Width Varies, 21 Feet to 25 Feet
 Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)



Note: The Grass / Utility strip will vary from 5.5 feet wide with a 25 foot pavement to 7.5 feet wide with a 21 foot pavement.

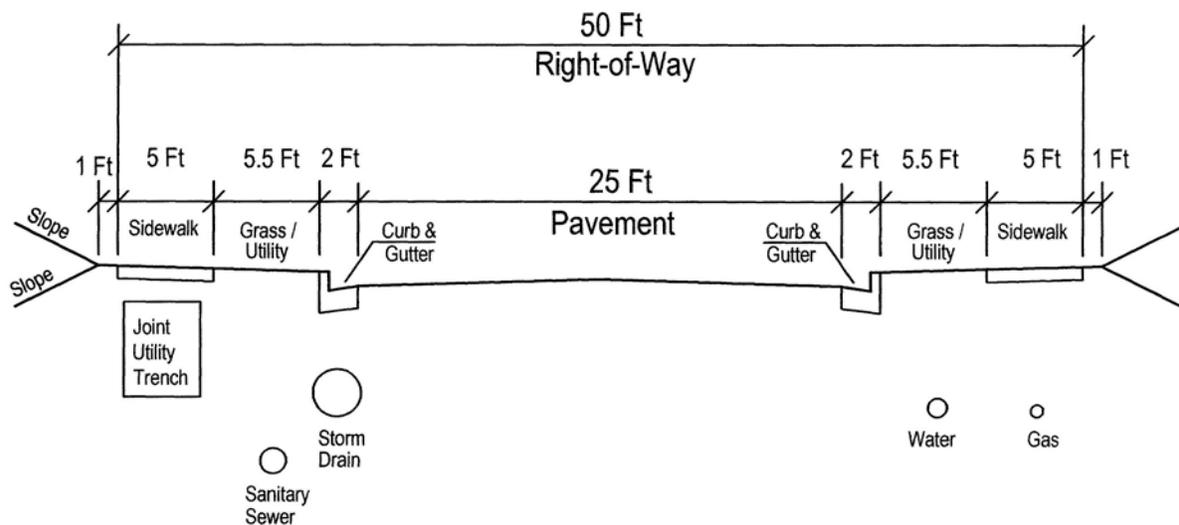
PAVEMENT SCHEDULE

6.00" Mineral Aggregate Base Material
 1.75" Binder Course
 1.25" Surface Course

Figure 8 Feeder Street

A higher volume residential street designed to carry more than 1,500 vehicles per day.

Right-of-way 50 Feet
 Pavement Width 25 Feet
 Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)



PAVEMENT SCHEDULE

6.00" Mineral Aggregate Base Material

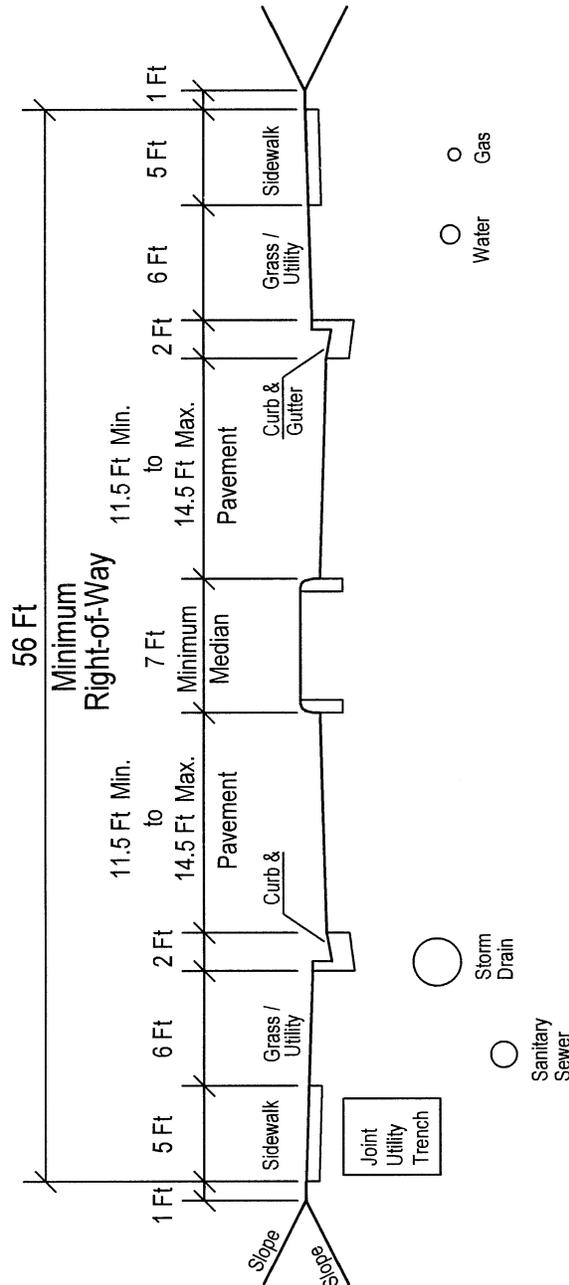
1.75" Binder Course

1.25" Surface Course

Figure 9 Boulevard

An optional street configuration, which can be a local or feeder street, with the travel lanes separated by a landscaped median.

- Right-of-way 56 Feet
- Pavement Width Varies, 11.5 Feet to 14.5 Feet Each Side of Median
- Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)



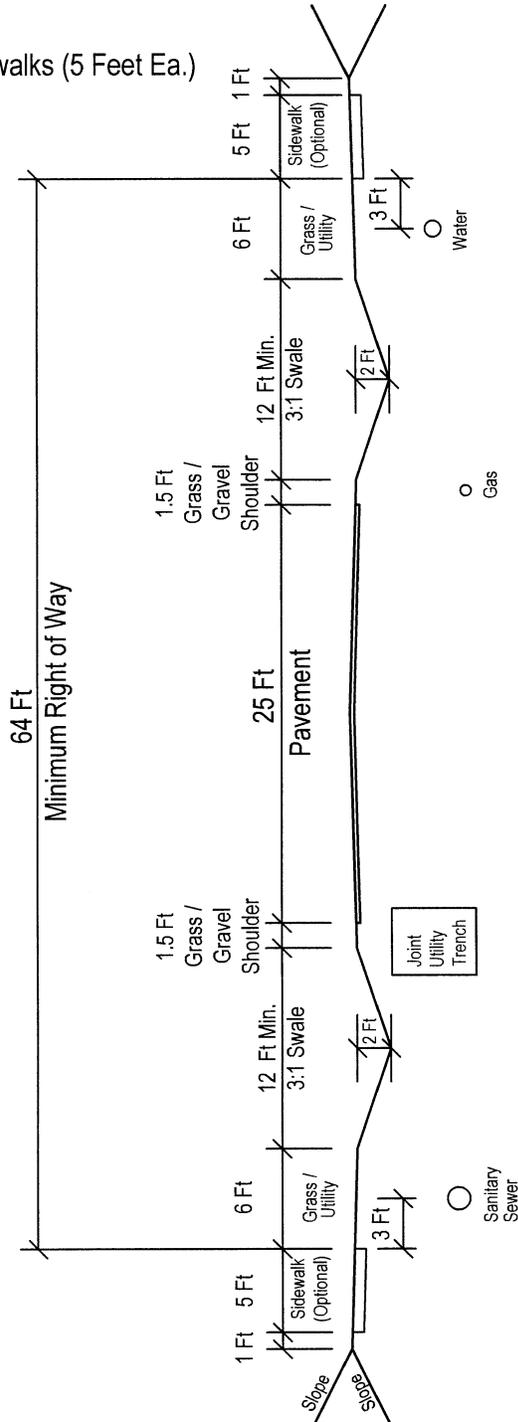
PAVEMENT SCHEDULE
 600" Mineral Aggregate Base Material
 1.75" Binder Course
 1.25" Surface Course

Note: The median curbs must be a mountable type. Right-of-way width will increase proportionally with increases in pavement and median width.

Figure 10 Rural Street

An optional street with no curb and gutter shall be permitted only under the following conditions:
 (1) Minimum lot size of 2 acres; (2) Minimum street frontage of 200 feet for each lot; (3) Minimum front yard setback of 75 feet; and (4) Resubdivision to create smaller lots shall not be permitted.

Right-of-way 64 Feet
 Pavement Width 25 Feet
 Pedestrian Optional,
 10 Feet Total, Sidewalks (5 Feet Ea.)



PAVEMENT SCHEDULE
 600" Mineral Aggregate Base Material
 1.75" Binder Course
 1.25" Surface Course

Note: Swale to be grass lined except where slope generates velocities that will require other types of lining for soil reinforcement.

4-1.3 Non-Residential Streets

Streets serving predominantly non-residential *development* which are expected to carry larger volumes of traffic shall comply with the standards set forth in this section and illustrated in Figures 11–16. Any deviation shall be approved by the *Planning Commission* as a variance during the *plat* approval process.

4-1.3.1 Policy

It shall be the policy of the *Planning Commission* to require reasonable accessibility among adjacent *developments*. To implement this policy, the following guidelines are adopted.

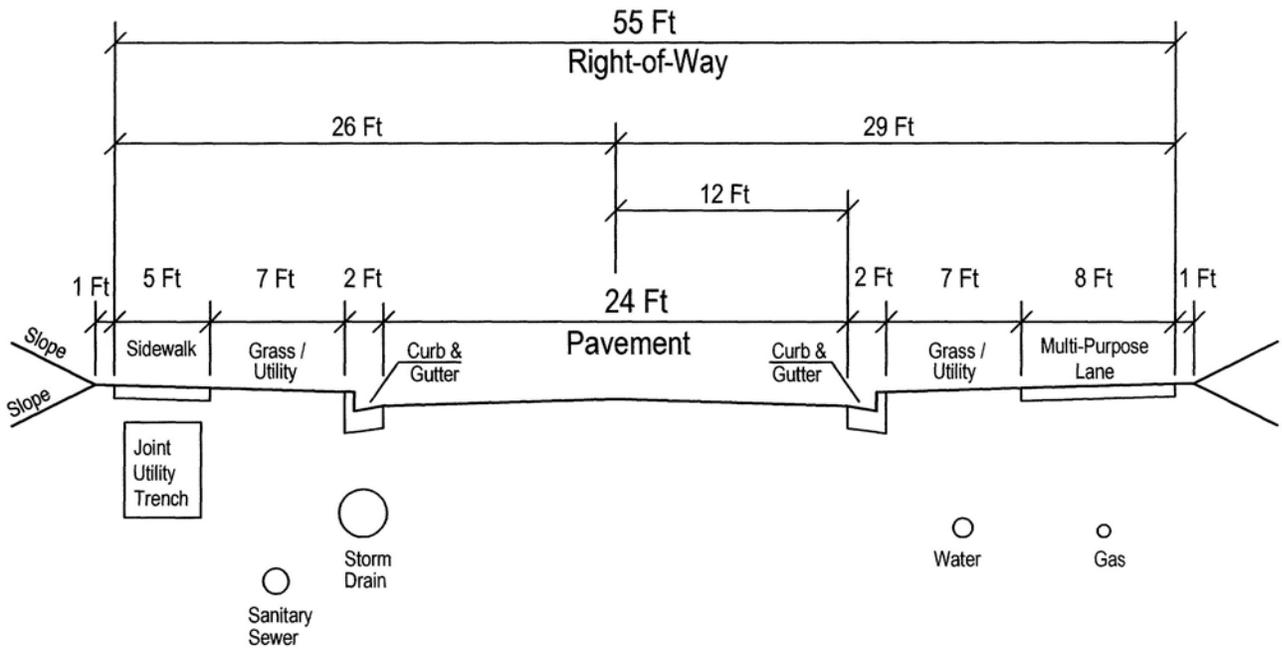
- (1) Sidewalks and/or bike lanes shall be required on all non-residential *streets* with the provision that *Planning Commission* can grant a variance where they are inappropriate.
- (2) All non-residential *streets* with more than 4 travel lanes shall be required to have a *median*.
- (3) Non-residential *streets* shall be interconnected or networked to a reasonable degree.

4-1.3.2 Classifications and Cross-sections

All *right-of-way* widths shall be the minimum *right-of-way* width required. All *street* widths and sidewalk locations are required. The location of items not dimensioned are schematic. *Medians* are optional on local and minor collectors.

Figure 11
Local-Non-Residential

Right-of-way 55 Feet
 Pavement Width 24 Feet
 Pedestrian / Bike 13 Feet Total, Sidewalk (5 Feet) and Multi-Purpose Lane (8 Feet)

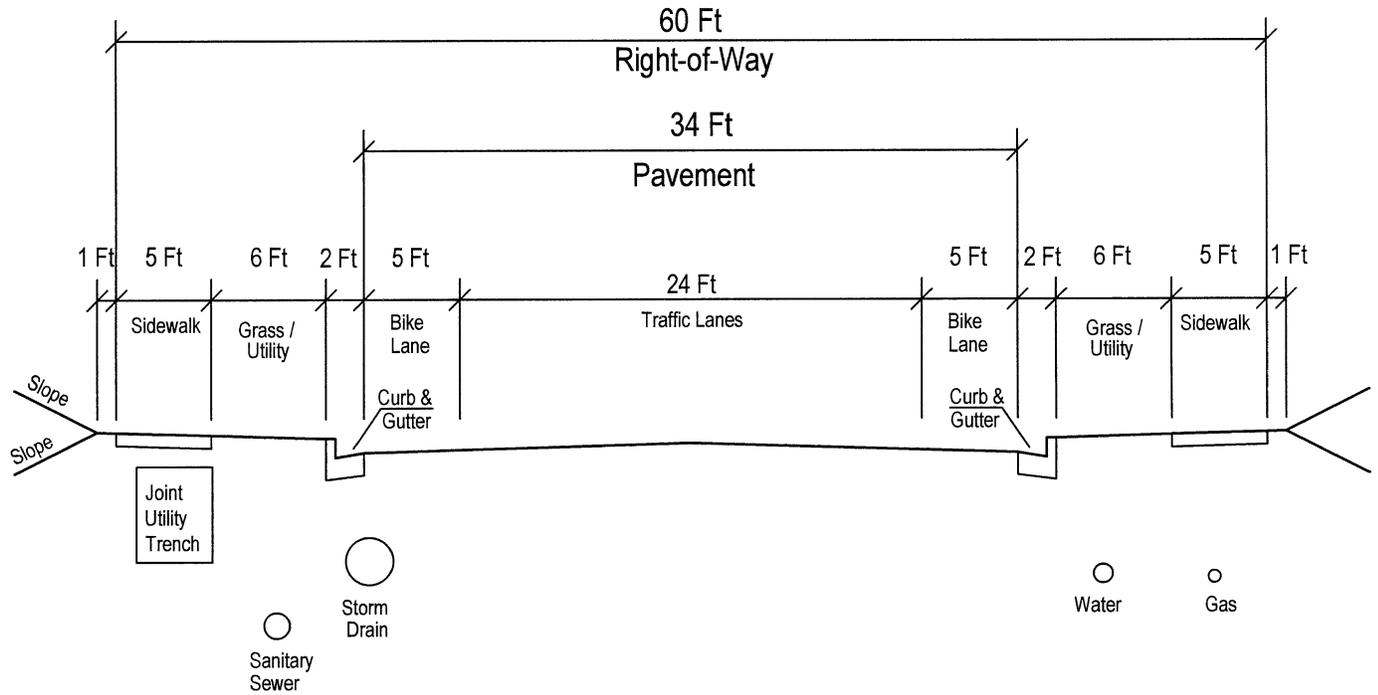


PAVEMENT SCHEDULE

8.00" Mineral Aggregate Base Material
 3.00" Binder Course
 1.25" Surface Course

Figure 12
Minor Collector with Bike Lane Each Side of Street

Right-of-way 60 Feet
 Pavement Width 34 Feet Total, 24 Feet - Traffic Lanes (12 Feet Ea.) , 10 Feet - Bicycle Lanes (5 Feet Ea.)
 Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)

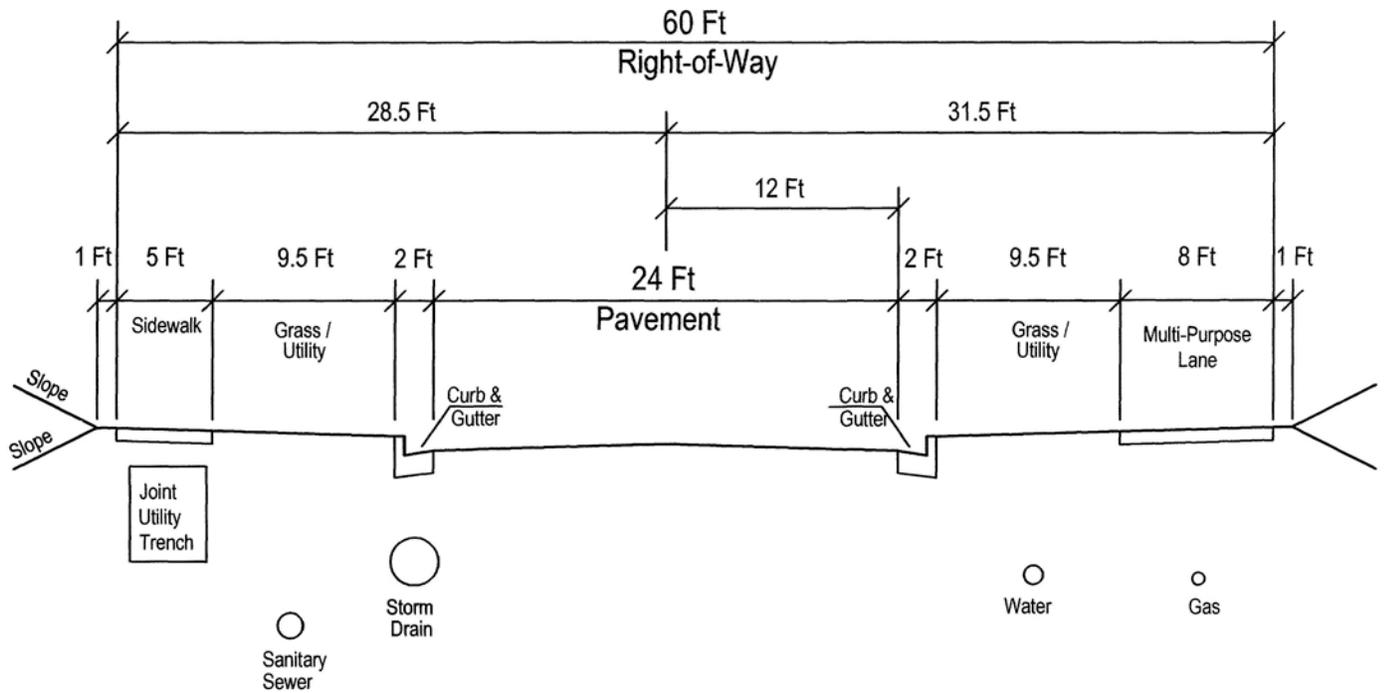


PAVEMENT SCHEDULE

- 8.00" Mineral Aggregate Base Material
- 3.00" Binder Course
- 1.25" Surface Course

Figure 13
Minor Collector with Multi-Purpose Lane

Right-of-way 60 Feet
 Pavement Width 24 Feet
 Pedestrian / Bike 13 Feet Total Total, Sidewalk (5 Feet) and Multi-Purpose Lane (8 Feet)



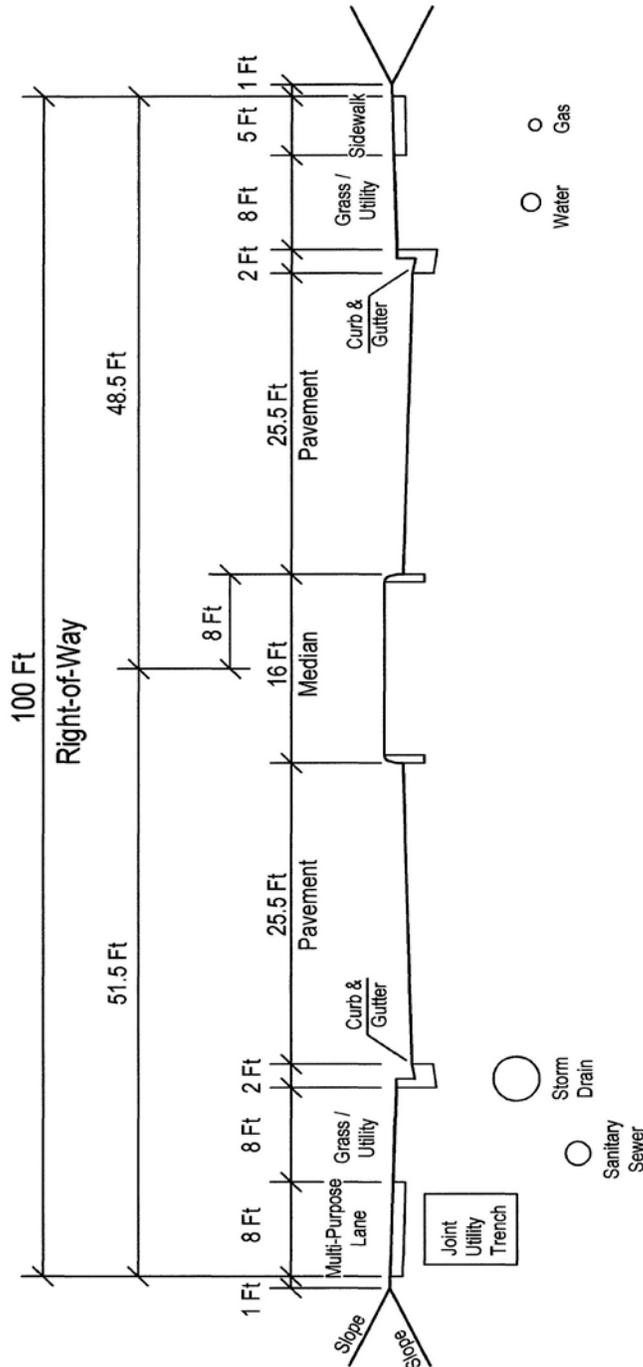
PAVEMENT SCHEDULE

- 8.00" Mineral Aggregate Base Material
- 3.00" Binder Course
- 1.25" Surface Course

Figure14
Major Collector with Multi-Purpose Lane and Median

A through street limited to four travel lanes.

- Right-of-way 100 Feet
- Pavement Width 51 Feet Total, 25.5 Feet, Each Side of Median
- Pedestrian / Bike 13 Feet Total, Sidewalk (5 Feet) and Multi-Purpose Lane (8 Feet)



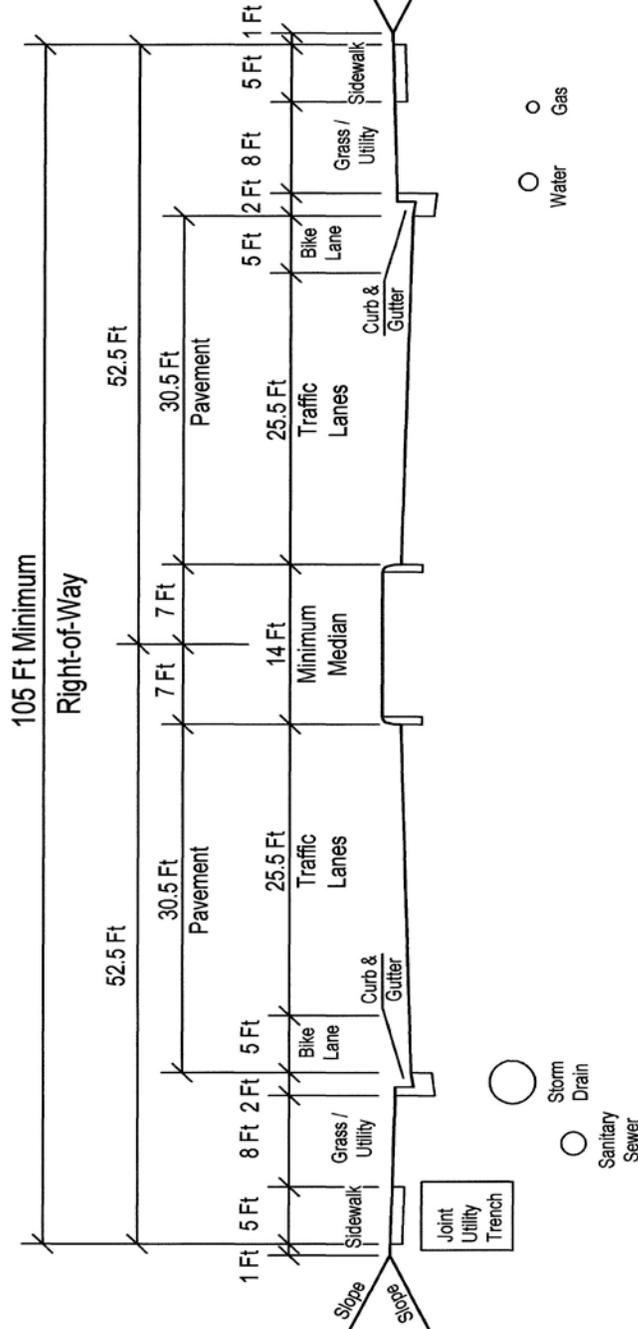
Note: The median curbs must be a mountable type.

- PAVEMENT SCHEDULE**
- 8.00" Mineral Aggregate Base Material
 - 3.00" Binder Course
 - 1.25" Surface Course

Figure 15
Major Collector with Bike Lanes and Median

A through street limited to four traffic lanes.

Right-of-way 105 Feet
 Pavement Width 61 Feet Total, 30.5 Feet Each Side of Median -- (25.5 Feet each side for Traffic Lanes) and 5 Feet each side for Bike Lane
 Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)

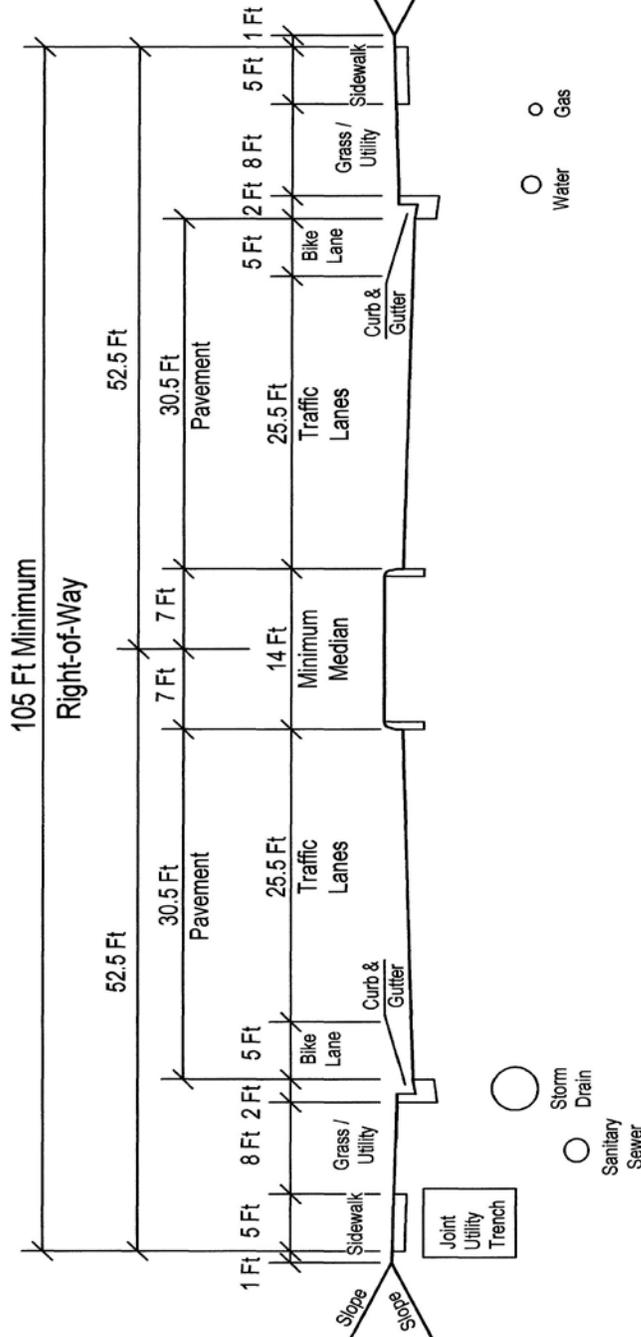


PAVEMENT SCHEDULE
 8.00" Mineral Aggregate Base Material
 3.00" Binder Course
 1.25" Surface Course

Figure 16
Arterial with Bike Lanes and Median

A through street which may contain between 4 and 6 traffic lanes.

Right-of-way 105 Feet
 Pavement Width 61 Feet Total, 30.5 Feet Each Side of Median - (25.5 Feet each side for Traffic Lanes) and 5 Feet each side for Bike Lane
 Pedestrian 10 Feet Total, Sidewalks (5 Feet Ea.)



Note: The median curbs must be a mountable type.
 Right-of-way width will increase proportionally with increases in median or pavement width.

PAVEMENT SCHEDULE
 8.00" Mineral Aggregate Base Material
 3.00" Binder Course
 1.25" Surface Course

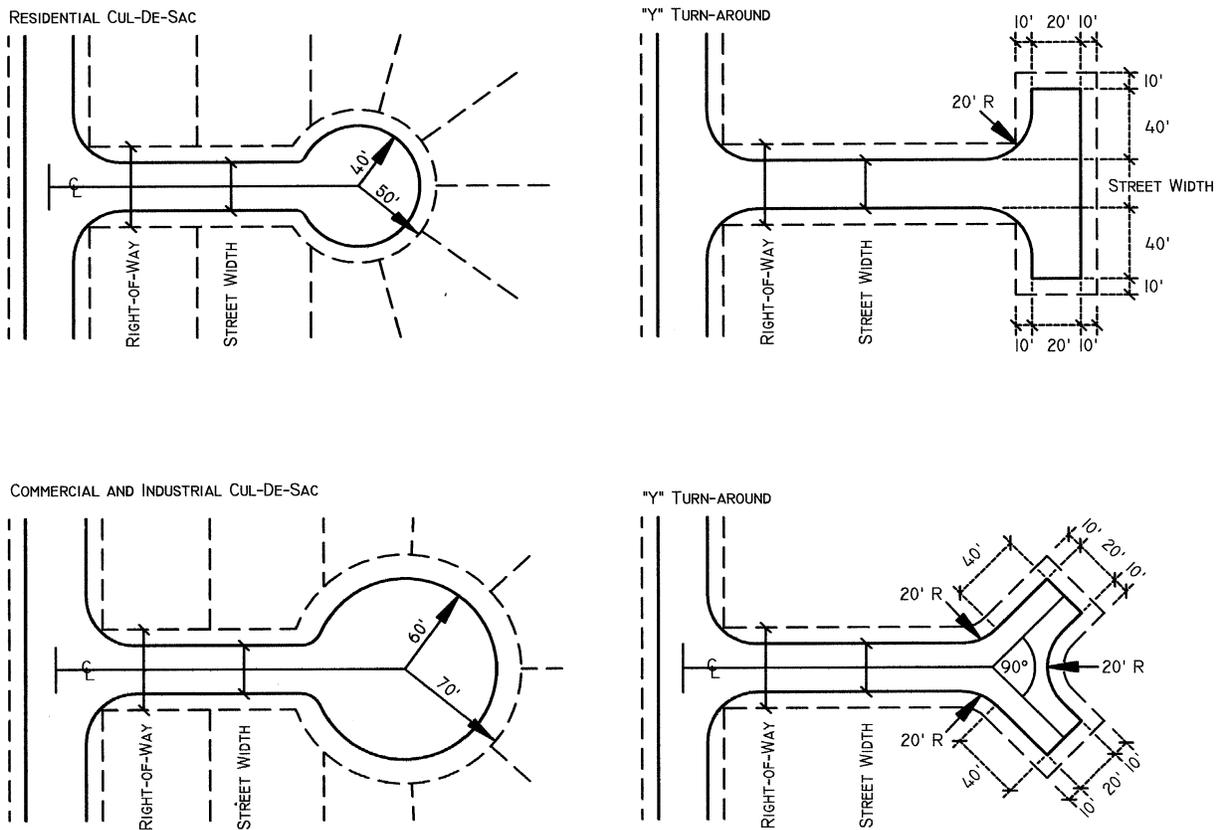
4-1.4 Design Standards

4-1.4.1 Cul-de-sacs

The number of units permitted on a permanent *cul-de-sac* shall be limited to either 24 single-family units, 36 apartment units, or 41 condominium/duplex units. In cases of infill development or where interconnection is not feasible due to topographical and/or lot line configurations that offer no practical alternatives for connections or through traffic, higher trip generating development may be considered.

- (1) For residential *streets*, a *cul-de-sac* with the *right-of-way* radius of 50' and a pavement radius of 40'.
- (2) For commercial and industrial *streets*, a *cul-de-sac* with the *right-of-way* radius of 70' and a pavement radius of 60'.
- (3) Where topography or unique natural features make a *cul-de-sac* impractical, the *Planning Commission* may permit a "Y" or "T" turn-around to be used.

Figure 17
Types of Cul-de-sacs



4-1.4.2 Temporary Turn-arounds

Where, in the opinion of the *Planning Commission*, a permanent *cul-de-sac* is undesirable, a temporary turn-around with a radius of 40' or a "Y" or "T" turn-around shall be permitted. It shall be the responsibility of the *subdivider* of adjacent land to remove the pavement of the temporary turn-around and to construct the *street* extension to properly connect the two *streets*. A temporary turn-around shall not be required on stub *streets* less than two *lots* deep.

4-1.4.3 Grading and Slopes

The entire width of *right-of-way* shall be graded in accordance with the Johnson City Public Works Department's standards of latest issue. The maximum cut and fill of slope permitted shall be a ratio of two horizontally to one vertically, unless the *subdivider* can prove to the satisfaction of the *City Engineer* that the steeper slope can be properly stabilized.

4-1.4.4 Length between Intersections

Blocks shall not be less than 200 feet nor more than 1,320 feet in length, except as the *Planning Commission* considers necessary to secure efficient use of land or desired features of *street* pattern. In blocks over 1,400 feet in length where unusual traffic generation is expected, the *Planning Commission* may require one or more improved public crosswalks of not less than 10 feet in width to extend across the block and at locations deemed necessary.

4-1.4.5 Blocks

Blocks shall be wide enough to allow two tiers of *lots* of minimum depth, except where fronting on major *streets* or prevented by topographical conditions or size of the property, in which case the *Planning Commission* will approve a single tier of *lots* of minimum depth, or of extraordinary depth if deemed desirable. A statement dissolving the right of rear access of individual double frontage *lots* may be required on the final *plat*.

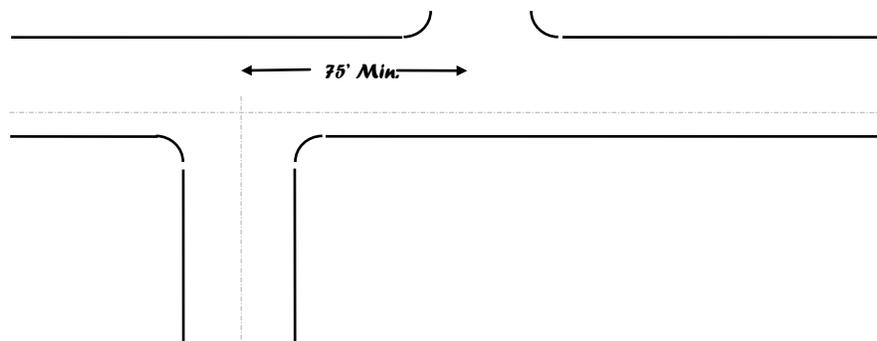
4-1.4.6 Street Alignment

On residential *streets*, long, straight sections of roadway shall be avoided and, where unavoidable, shall be interrupted at 500' intervals by means approved by the *City Engineer* and agreed upon by the *subdivider*.

4-1.4.7 Street Jogs

Street jogs with centerline offsets of less than 75' shall not be allowed.

Figure 18
Street Jogs



4-1.4.8 Street Elevations

All *streets* shall be located at, or above, the elevation of the 100-year flood level to allow residents to circulate within areas subject to flooding. The 100-year flood elevation shall be determined using the most recent available flood data provided by the Federal Emergency Management Agency (FEMA). The flood elevations, where applicable, shall be shown on the existing topographic maps and on any proposed grading plans.

4-1.4.9 Geometric Alignment at Intersections

Intersections shall be at right angles. Skewed intersections shall only be permitted when, in the opinion of the Engineering Division, a right angle intersection cannot be constructed due to unusual topographic or existing conditions. In no case, however, shall the external angle between intersecting *streets* be more than 125 degrees.

4-1.4.10 Curb and Property Line Radii

For residential *street* intersections, the radius at property lines shall not exceed 10' and the curb radius shall not exceed 20'. The *Planning Commission* may require greater radii at skewed intersections whenever necessary to permit the construction of sidewalks at intersections. A modified radius at the property line may be required to permit such construction.

4-1.4.11 Pavement

All new *streets* shall have a pavement of either asphalt or concrete, designed to meet minimum standards described in these regulations.

4-1.4.12 Curb and Gutter

All new *streets*, except alleys and rural *streets*, shall have curb and gutter. In addition to standard curb and gutter, mountable combined curb and gutter (Miami curb) may be permitted if the *subdivider* can demonstrate adequate storm water carrying capacity.

Figure 19
Mountable Curb (Miami Curb)

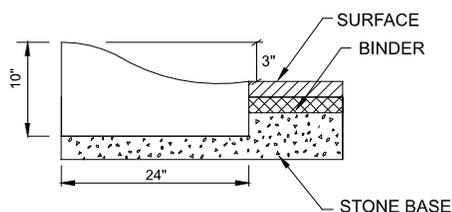
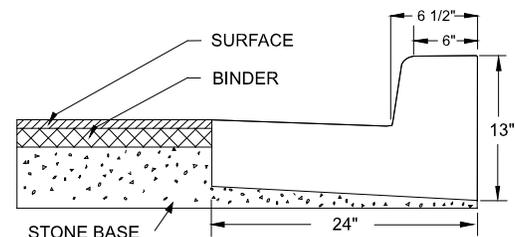


Figure 20
Curb and Gutter



4-2 Sidewalks

Sidewalks shall be provided by the *subdivider* subject to the provisions listed below.

4-2.1 Sidewalks shall be required on all new public *streets*, excluding alleys and rural *streets*. However, the Planning Commission may approve a deviation, in the form of an alternative, to this standard as permissible by Section 1-6 including, but not limited to: a wider sidewalk on one side of the street; a pedestrian path around the development; or a series of trails within the development. Any proposed alternative shall be considered by the Planning Commission based on the following criteria listed below. The developer shall submit a proposal in writing addressing each criteria listed.

- (1) The reason for the deviation;
- (2) A description of any unique or physical constraints to meeting the sidewalk requirement;
- (3) A proposed alternative to the sidewalk requirement, or show cause as to why no alternative was submitted;
- (4) Is alternative in accordance with the American With Disabilities Act (ADA) accessibility standards for public sidewalks and if not, why and or how is it not in compliance with the act;
- (5) A demonstration the alternative provides the same degree of accessibility to all residences as the sidewalk requirement;
- (6) The proposed alternative shall not be located over underground utilities or underground utility easements, excepting at intersections and/or crosswalks.

4-2.2 All pedestrian mobility systems shall comply with the following standards as required in this section.

4-2.3 Sidewalks and/or bike lanes shall be required on all new non-residential *streets* with the provision that *Planning Commission* can grant a variance where they are inappropriate.

4-2.4 New sidewalks shall be a minimum of 5' in width with no obstructions such as mailboxes, *street* lights, *utility* poles, guy wires, and fire hydrants.

- 4-2.5 Sidewalks shall not be required on the bulb (turn-around) portion of *cul-de-sacs*.
- 4-2.6 Where sidewalks are replaced or adjoin an existing sidewalk, they are encouraged to be of similar color and texture.
- 4-2.7 Where sidewalks are replaced due to breakage, *utility* cuts, or age, they shall be upgraded or replaced with similar material.
- 4-2.8 Construction standards shall be consistent with the latest edition of TDOT's Standard Specifications for Road and Bridge Construction. After construction, as adopted by the city of Johnson City's Public Works Department Standards.
- 4-2.9 Where unique site characteristics make it necessary to deviate from these standards for sidewalk construction, the *City Engineer* may approve a minor design modification.

4-3 Lots

4-3.1 Arrangement

Unless otherwise permitted by the *zoning ordinance* in effect, each *lot* must have a minimum 50' frontage on a public *right-of-way*, excluding *lots* on *cul-de-sacs* which may have a minimum frontage of 40'. Insofar as practical, side *lot* lines shall be at right angles to straight *right-of-way* lines or radial to curved *right-of-way* lines.

4-3.2 Minimum Size

The size, shape, and orientation of *lots* shall be as *Planning Commission* deems appropriate for the type of *development* and use contemplated, topographical and engineering feasibility being of prime consideration. Where public sanitary sewer is reasonably accessible, the *subdivider* shall connect with such sewer and provide a connection to each *lot*. Where public sewer is not accessible, an alternate method of sewage disposal may be used when meeting all applicable public health regulations. Unless otherwise required or permitted by applicable zoning provisions, *lot* sizes shall not be less than required by the following regulations:

- 4-3.2.1 Residential *lots* not served by a public sewerage system shall have a minimum width of 90' at the building line and a minimum of 15,000 square feet in area regardless of the zoning district. Greater area may be required for private sewage disposal, if in the opinion of the *County Health Officer*, there are factors of drainage, soil condition, or other conditions to cause potential health problems. The *Planning Commission* shall require data from percolation tests be submitted as a basis for approval of

subdivisions dependent upon septic tanks as a means of sewage disposal.

4-3.2.2 The minimum size of residential *lots* to be served by a private source of water supply shall be determined by the *County Health Officer* after investigations of soil conditions, proposed sewerage system, and depth of ground water; provided that the *County Health Officer* shall not approve a *lot* with lesser area than is otherwise required by this section.

4-3.2.3 Size of properties reserved or laid out for commercial or industrial properties shall be adequate to provide for the off-street service and parking facilities required by the type of use and *development* contemplated. Platting of individual *lots* should be avoided in favor of an overall design of the land to be used for such purposes.

4-3.2.4 The size and widths of *lots* shall in no case be less than the minimum requirements of the *zoning ordinance* in effect.

4-3.2.5 Any *lot* less than 170' in width shall not have a depth more than 3 times its width.

4-3.3 Corner *Lots*

Corner *lots* shall be sufficiently wider and larger to permit the additional side yard requirements of the *zoning ordinance* in effect.

4-3.4 Building Site

Each *lot* shall have a buildable site located outside required yard areas and restrictive *easements*; such sites shall be completely free of the danger of flood waters as determined by the *Planning Commission* based on available flood level data.

4-4 Public Use and Utility Easements

4-4.1 Public Open Space

Where a school, neighborhood park, recreation area, or public access to water frontage, shown on an official map or on a plan made and adopted by the *Planning Commission*, is located in whole or in part in the applicant's *subdivision*, the *Planning Commission* may require the dedication or reservation of such open space within the *subdivision* up to a total of 10% of the gross area or water frontage of the *lot*, for park, school, or recreational purposes or of a greater amount if such is specified under the planned residential *development* provisions of the *zoning ordinance* in effect.

4-4.2 Community Assets

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

4-4.3 Utility Easements

Easements for underground and aboveground *utilities* shall be provided along all front, rear, and side property lines, and shall be a minimum of 7 ½' wide. *Easements* of the same or greater width may be required along property lines or across *lots* where necessary for the extension of existing or planned *utilities* or drainage ways.

4-4.4 Drainage *Easements*

Where a *subdivision* is traversed by a stream or drainage way, a stormwater *easement*, approved by the *City Engineer*, of sufficient width to protect, maintain, and improve the drainage way shall be provided.

4-4.5 Permanent Easements

Permanent Easements may be used for access within Subdivisions, Planned Developments, Condominium Projects, and Apartment Complexes. The easements shall be a minimum of twenty-four feet (24') in width; private streets within the permanent easement shall have the same design and construction standards as public streets, and be inspected by the City Engineering Division as appropriate.

Private Drives serving no more than one (1) lot or tract of land may be subject to more lenient design and construction standards, if acceptable and approved by the City Engineer.

All Permanent Easements shall meet the following standards:

- (1) The Planning Commission may approve permanent easements. A lot shall be considered to be served by a permanent easement if the lot abuts the permanent easement and has legal traversable access to the easement.
- (2) Subdivisions with permanent easements shall conform to the general purpose of the regulations as stated in Article 1. More specifically, the subdivision shall be considered in the context and pattern of neighboring developments and shall not be approved if it will create a connection between two (2) public roads.
- (3) A homeowners association or other legal entity shall be established that addresses maintenance of the easement. The applicant must demonstrate to the reasonable satisfaction of the Planning Commission that the easement will be properly maintained.
- (4) A note shall be placed on the Final Plat that the permanent easement is not a public street and will not be maintained by the City of Johnson City or the County.
- (5) Permanent easements shall also function as a utility easement and a note shall be placed on the Final Plat specifying their use as such.

4-5 Public Utilities

All *utilities* shall be placed in the general locations specified in Figures 3-15, unless specified below.

4-5.1 Electric Power, Telephone, and Cable

All *utility* services shall be placed underground in all new residential *subdivisions*. In new non-residential *subdivisions*, electric power service which exceeds 3 phase, 2500 KVA, may be placed above ground. Telephone, cable, and fiber services and other communication services shall be installed underground.

The *developer* shall be responsible for opening and closing a trench for these *utilities*. In providing this trench the *developer* shall comply with all applicable industry and local *utility* standards (including but not limited to depth, width, compaction, separation, and backfill material per National Electric Safety Code). The *developer* shall be responsible for underground street crossings for utilities at appropriate locations.

Electrical service connections to each building in a new non-residential *subdivision* which are 3 phase, 2500 KVA or less, as well as telephones, cable, fiber and other communications shall be placed underground. All transformers with the exception of transformers servicing streetlights shall be ground-mounted.

4-5.2 Sanitary Sewer Systems

Sanitary sewer systems shall be designed and constructed in accordance with the Johnson City Water and Sewer Services Department's standards of latest issue. Three phase power must be made available to all pumping stations unless waived by the Water and Sewer Service Department.

4-5.3 Domestic Water Systems

Domestic water systems shall be designed and constructed in accordance with the Johnson City Water and Sewer Services Department's standards of latest issue. Three phase power must be made available to all pumping stations unless waived by the Water and Sewer Service Department.

4-5.4 Storm Water Management

The construction of storm sewers and storm water management systems shall be in accordance with the lines and grades shown on the approved plans and the Johnson City Public Works Department's standards of latest issue.

4-5.5 Streets

All new *streets*, public or private, shall be designed and constructed in accordance with the requirements of Section 4-1 of these regulations and the Johnson City Public Works Department's standards of latest issue.

4-5.6 Erosion and Sediment Control

To prevent soil erosion and sedimentation pollution, the *subdivider* shall comply with all requirements of the Johnson City Public Works Department's standards of latest issue.

4-6 Land Suitability

4-6.1 The *Planning Commission* shall not approve the *subdivision* of land if, from adequate investigations conducted by all public agencies concerned, it is determined that platting and developing the site in the manner proposed is not in the best interest of the public.

4-6.2 Land subject to flooding and land deemed to be topographically unsuitable shall not be platted for residential occupancy nor for any other use that may increase erosion, flooding, or danger to health, life, or property. Such land shall be set aside on the *plat* for uses that will not be endangered or damaged by periodic flooding and will not produce unsatisfactory living conditions.

4-6.3 Fill material may only be used to raise the elevation of land in areas subject to flood when it has been determined that the fill proposed does not restrict the flow of water and unduly increase flood heights. Such determination shall be made by the *City Engineer* based on available known flood level data.

4-7 Large Tracts or Parcels

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

4-8 Planned Residential Developments

A comprehensive housing *development* or planned residential *development*, may be approved by the *Planning Commission* although the design of the project does not include standard *street*, *lot*, and *subdivision* arrangements, if departure from the foregoing standards can be made without destroying their intent.

ARTICLE 5

PRIVATE STREETS & GATED DEVELOPMENTS GENERAL REQUIREMENTS & STANDARDS OF DESIGN

5-1 Relation to Adjoining Street Systems

A subdivision of a parcel of land shall be undertaken in such a manner as to enhance the sound development of the neighborhood in which the subdivision lies. The proposed street system of a subdivision shall generally provide for the continuance of existing or dedicated streets in adjoining or nearby tracts. In addition, dedication of rights-of-way shall be provided to the satisfaction of the Planning Commission for the connection of the subdivision to any adjoining unsubdivided land, to accommodate an increase in traffic resulting from the subdivision, to provide for harmonious development of the subdivision in relation to the neighborhood in which it lies, and for the general safety and welfare of those benefiting from the subdivision. Any or all of these criteria may be considered in requiring dedication of right-of-way as a prerequisite for subdivision approval. Private streets will not be permitted if they defy the interconnectivity goals set forth by the Planning Commission and the Subdivision Regulations.

5-2 Permitted

- (a) Private streets may, upon application, be permitted subject to the requirements of this Article, and those requirements previously set forth in Article 4. Private streets may be permitted in the RP Zoning Districts; however, proposed private streets shall not be permitted if they do not include access to amenities or features which by design or agreement are intended for use by the general public.
- (b) Applications for approval of private streets shall be considered by and approved by the Planning Commission. Following a recommendation by the Planning Division, the Planning Commission shall consider the application and may impose conditions on the approval of private streets to ensure various public purposes and to mitigate potential problems with private streets.
- (c) No Final Plat involving a private street shall be approved unless said final plat conforms to the requirements of this Article.
- (d) This section shall not be construed to prevent the installation of streets and driveways within private developments not involving the subdivision of land, where those streets remain under private ownership but which are unrestricted in terms of public access.

5-3 Special Improvement Requirements

Whenever there is a proposal to have streets closed to through-traffic (i.e. private with access control), the Planning Commission shall require that the following improvements and provisions be reviewed, approved, and installed or erected in accordance with approved development plans:

- (a) A sign of appropriate size to identify the street or development as private.
- (b) Provisions to ensure that access at the entrance to the private street is not restricted to law enforcement officials and their vehicles, emergency response officials and their vehicles, public and private utility companies and their vehicles, postal delivery vehicles, and city of Johnson City or county personnel and vehicles while conducting business.

5-4 Engineering Plans Required

It shall be unlawful for any person, firm, or corporation to construct a new private street or alter an existing private street or to cause the same to be done without first obtaining approval of development plans in accordance with the requirements of the Subdivision Regulations.

5-5 Standards for Private Streets

All private streets located within single-family subdivisions shall have the same design and construction standards as public streets, and be inspected by the City Engineering Division as appropriate. Private streets located within one (1) lot multi-family subdivisions shall conform to Article 3.

5-6 Street Names and Signs

Private streets shall be named subject to the approval of the County E-911 Office. The subdivider of land involving a private street shall install street signs with content containing the street name as approved. The sign signifying the private street shall be required to be blue in color to distinguish maintenance responsibilities in the field. All traffic control and street name signs shall meet the minimum standards that are specified in the Manual on Uniform Traffic Control Devices (MUTCD).

5-7 Rights-of-ways / Permanent Easements

Permanent easements may be used for access within subdivisions. Right-of-ways for private streets shall be designated on final plats as "permanent easements" for general purpose public access and utility rights-of-ways, along with the name of said private street. Said private right-of-way shall at minimum be of the same width as that required for the right-of-way of a public street within the Planning Region. Right-of-ways for private streets shall not be included in any calculation of minimum lot size established by the Subdivision Regulations. In the cases of private streets, the right-of-way for the private street shall be drawn as its own discrete parcel to be dedicated to a private homeowners association or other legal entity (i.e. not shown to be a part of any lot).

The Planning Commission may approve permanent easements. A lot shall be considered to be served by a permanent easement if the lot abuts the permanent easement and has legal traversable access to the easement. A subdivision that contains permanent easements shall be considered in the context and pattern of neighboring developments and shall not be approved if it will create a connection between two (2) public streets.

5-8 Specifications for Final Plats Involving Private Streets

No Final Plat involving a private street shall be approved for recording until it contains the following:

- (a) “WARNING, the city of Johnson City and the county have no responsibility to build, improve, maintain, or otherwise service the private streets, drainage improvements, and other appurtenances contained within the rights-of-ways for private streets shown on this plat.”
- (b) “Grant of Right-of-way. The right-of-way shown on this plat for private street(s) is hereby granted and said grant of rights shall be liberally construed to provide access to the city of Johnson City and the county, and to public or private utility companies serving the subdivision.

5-9 Security Gates

Any security gate design and installation shall conform to requirements set forth by The Official Tennessee Code and to the following requirements:

- (a) Gate designs shall incorporate vehicular access gate sections with a minimum gate width of twenty-four feet (24’). If the entrance incorporates a median, guard house, or similar structure that necessitates a divided gate arrangement, each respective gate width must be no less than eighteen feet (18’) each. A pedestrian access gate shall also be provided, having direct access to a public street or alley.
 - (1) Each security gate designed and installed shall be equipped so that access is by a radio operated controller, approved by and subject to a performance test by the Engineering Division.
 - (2) If a gate design incorporates an overhead feature or obstruction, the vertical clearance shall be a minimum of fourteen feet (14’) measured above the crown of the finished street surface.
- (b) *Approach and Departure Areas* on both sides of a gated entrance shall provide free and unimpeded passage of emergency vehicles through the entrance area as required by public safety departments.

- (c) *A second emergency access* to a public street or alley shall be provided for all gated subdivisions / developments containing forty (40) or more lots or dwelling units. Said gate access and related mechanical or manual security appurtenances shall be as approved by the Engineering Division.
- (d) *Maintenance and Operations.* All components of the gate system must be maintained in a normal operating condition, and serviced on a regular basis, as needed, to ensure proper gate operation. An appropriate power supply shall be provided and maintained to all electrical and electronic components at all times. Manual override provisions shall be incorporated therein, in the event of power failure or during repair and maintenance operations.
- (1) *Periodic Inspection.* The city shall have the right to enter the subdivision or development, to periodically inspect the installed security gate and related appurtenances and equipment at any and all reasonable times to assess their proper maintenance and working condition. When in the city's opinion such gate or related appurtenance and / or equipment is faulty or unduly impedes or adversely affects vehicular / pedestrian access, the city may cause and / or order the appropriate and prompt repair of the gate, or device in question.
- (2) *Responsibility for the Cost of Repairs / Removal.* The cost of such repairs or removal shall be borne by, and may be assessed to, the appropriate homeowners' association or developer / owner of the property in question. Such action taken by the city shall include, but not necessarily be limited to, entry features and related amenities such as gate, related devices, guardhouses, mechanical / electrical equipment, landscaping, and walls / fences / hedges in association therewith.
- (3) *Owner / Developer Responsibilities and Liabilities.* The appropriate subdivision owner, developer, or homeowners' association, including its officers and assigns, shall be held mutually responsible and liable for any violation of these regulations. Further, if the development is controlled and operated by a homeowners' association, provisions shall be contained in the respective deed restrictions and in the association's by-laws, referencing and incorporating these regulations therein. No homeowners' association thus incorporating these regulations, shall amend, change, or modify such without the written consent by the Planning Commission.
- (4) *Hold Harmless.* On the subdivision Final Plat, or site plan, shall be placed language whereby the owner, developer, or homeowners' association (as owner of the private streets, gates, and appurtenance)

agrees to release, indemnify, and hold harmless the city, or any other governmental entity or public utility, for damages, attorney's fees, court costs, or injury to property or person (including death) arising out of the use or operation by said entities, of any restricted security gate / entrance or related feature.

The indemnification applies regardless of whether or not such damages or injury (including death) are caused by the negligent act or omission of the city or governmental entity or public utility, including their officers, employees, agents, or assigns.

- (5) Special Waiver Considerations for Street Extensions in Gated Subdivisions. Gated subdivisions with private streets or drives, that are designed to provide internal circulation within the subdivision and that provide adequate drainage and emergency access and egress connections to existing adjacent perimeter public streets, may be granted a waiver from extending private streets to the perimeter of the subdivision for purposes of future connections with un-platted property.

5-10 Private Utilities

Water lines and sanitary sewer lines within the development are private and to be privately maintained, unless noted as a public utility in a public easement.

APPENDIX



PRELIMINARY PLAT REVIEW CHECK LIST

Subdivision Name: _____

Reviewed by: _____ Date: _____

Zoning District: _____ Acreage: _____

Preliminary Plat Plan Review Review: ____ 1 ____ 2 ____ 3 ____ 4

Cover Sheet containing the following

- Subdivision Name
- Preliminary Plat Plan
- Johnson City, TN
- Owner's Name and Address
- Engineer's Name or Company Name and address
- Surveyor's Name or Company Name and address
- Location or Vicinity Map
- Index of Sheets (Table of Contents)
- Engineers and / or Surveyor's Seal, Signed and Dated
- Date of Preliminary Plat
- Sheet Number (Optional)

Specifications for each sheet in the Preliminary Plat Plan

- Engineer's or Surveyor's Seal on each sheet, Signed and Dated (Preferred location near the lower right corner of the sheet)
- Provide a Sheet name, example: EXISTING CONDITIONS, LAYOUT OF PROPOSED STREETS AND LOTS, and PROFILE OF PORPOSED STREETS
- Provide a Sheet Number, example : Sheet ____ of ____
- Provide a north arrow on each plan view sheet
- Provide a graphic scale on each sheet
- Scaling to a scale no greater than 1" = 100' (1"=20', 30' 40' 50' 60', ..., 100' acceptable; 1"= 200, 300, 400, 500 etc. not acceptable)

Existing Conditions Layout Sheet

- Show existing topography at 2' contour intervals,
- Label contours at 10 foot intervals,
- Show and label locations and widths of all existing right-of-ways
- Show and label locations and widths of all existing easements
- Show existing property lines
- Provide the names of adjoining subdivisions and property owners

PRELIMINARY PLAT REVIEW CHECK LIST

Show location of all existing natural or manmade features or structures: including:

- Overhead utilities
- Streams
- Storm water swales and ditches
- Sink holes
- Driveways
- Streets
- Buildings
- Slabs
- and etc.

Show all existing underground items, such as:

- Gas lines
- Water lines
- Sanitary sewer lines
- Underground electric lines
- Cable TV lines
- And other existing underground items

Show the locations of existing storm water pipes, culverts and bridges, include:

- Pipe, culvert and bridge dimensions, such as diameter, rise and span
- Pipe, culvert and bridge type (RCP, CMP, HDPE, cast in place concrete or other)
- Direction of flow

Layout Plan for the Proposed Streets and Lots (Plan View)

- Show existing topography at 2' contour intervals
- Show lot lines and street right-of-way lines
- Indicate the acreage of land being subdivided
- Show the computed square footage of each lot
- Lots meet minimum area and width requirement of zoning district
- Lots do not exceed 3 to 1 lot depth to width ratio
- Show areas to be set aside for stormwater management facilities, detention & water quality
- Show the Flood Insurance Rate Map (FIRM) 100-yr floodplain and floodway boundaries
- Provide a typical cross section of each street, using the names given to each typical cross section by the Subdivision Regulations

Show the plan view of the proposed street(s) with the following information:

- Indicate the sight distances at each entrance and exit at existing roadways.
- Show the location of deceleration lanes for proposed streets connecting to collectors or arterials
- Provide street names for each street. If the developer has not decided on names, use some type of temporary naming system, for example: Street A, Street B, etc...
- Show edge of pavement
- Label width of pavement at intervals, minimum of once per block
- Show front and back of curbs

PRELIMINARY PLAT REVIEW CHECK LIST

- Show front and back of sidewalks
- Label width of sidewalk at intervals, minimum of once per block

Show the Project Centerline with the following information:

- Show the centerline of street(s), with station tic marks at 100 foot intervals
- Label centerline stations at a minimum of 500 foot intervals
- Label horizontal curves and provide the following:
 - Deflection angle (Δ)
 - Length (L)
 - Radius (R)
 - Tangent Length (T)
 - Degree of Curve (D)
 - Optional, provide the above in an optional curve data table.

Profiles of the Proposed Streets, referenced to sea level datum, including the following:

- Provide a title for each profile that will identify the street that it represents
- Show the existing and proposed grade at the street centerline
- Provide labeling showing the station number for the beginning of the profile
- Provide labeling that will indicate the name of the street that each end of the profile intersects with
- Provide labeling to indicate the station of the beginning and end of each vertical curve (TVC and VCT)
- Provide labeling to indicate the station number for the point of vertical tangent intersection (PVI).
- Provide labeling to indicate the elevations of the point of tangent to vertical curve (TVC) and the point of vertical curve to tangent (VCT) (both commonly known as point of vertical curve or PVC)
- Provide labeling to indicate the elevation of the point of vertical tangent intersection (PVI)
- Provide labeling to indicate the grade of each tangent, traveling from left to right, positive for uphill and negative for downhill.
- Provide labeling to indicate the values for the vertical curve length
- Provide labeling to show the K value for the vertical curve

Attach any additional comments:



CONSTRUCTION PLANS REVIEW CHECK LIST

Subdivision Name: _____

Reviewed by: _____ **Date:** _____

Zoning District: _____ **Acreage:** _____

Construction Plans Review **Review:** ___1 ___2 ___3 ___4

Cover Sheet

- Location Map
- Project Title and "Construction Plans"
- Engineer's Name – Engineer's Seal
- Owners Name and Address
- Index of Sheets
- Utility Company Identification List
- Date

Layout Plan for Street and Storm Water Collection System (Plan View)

- Show lot lines and street right-of-way lines.

Show the Plan view of the proposed street(s) with the following information:

- Provide street names for each street. If the developer has not decided on names, use some type of temporary naming system, for example: Street A, Street B, etc...
- Show edge of pavement
- Label width of pavement at intervals, minimum of once per block
- Show front and back of curbs
- Show front and back of sidewalks
- Label width of sidewalk at intervals, minimum of once per block

Show the Project Centerline with the following information:

- Show the centerline of street(s), with station tic marks at 100 foot intervals
- Label centerline stations at a minimum of 500 foot intervals
- Label horizontal curves and provide the following:
 - Deflection angle (delta)
 - Length (L)
 - Radius (R)
 - Tangent Length (T)
 - Degree of Curve (D)
 - Optional, provide the above in an optional curve data table.

Show storm water collection system with the following information:

- Optional Structure and Pipe table. As an option to providing some of the individual bits of information asked for below, a TDOT style Storm Water Structure and Storm

CONSTRUCTION PLANS REVIEW CHECK LIST

- Water Pipe table can be provided at a location in the plans that can be quickly and easily referenced from the layout sheets and the profile sheets. However, simplified labeling of the structures and pipes linking to the table are still required.
- Provide labeling that will identify each curb inlet, manhole, junction box, area drain and end wall with a structure identification number, example 1, 2, 3, etc...
- Provide labeling that will identify the type of storm water structure with a label, for example: 12 (as in TDOT type 12), CI, MH, JB, AD, EW or other recognizable industry standard structure type labeling system
- Provide labeling to identify each storm water pipe segment (a segment is the pipe between storm water structures) with a pipe identification number, for example: 1, 2, 3, etc..., or A1, A2, A3, etc...,
- Provide labeling at each pipe segment to identify the type of pipe material to be used, for example: RCP, HDPE, or CMP
- Provide labeling to show top of grate/lid elevation for each curb inlet, manhole, junction box, area drain, and end wall
- Provide labeling to show the invert elevations for each curb inlet, manhole, junction box, area drain and end wall

Show storm water detention basins with the following information:

- Show the location of the outlet flow control structure
- Provide labeling to identify the outlet flow control structure
- Show the location of the emergency over flow channel
- Provide labeling to identify the emergency over flow channel
- Show locations of features designed for the detention basin, such as end walls, paved channels, rip-rap lined channels, rock filled trenches, etc.
- Provide labeling for features designed for the detention basin
- Show the location of floodplain boundaries**
- Provide labeling to identify the floodplain boundaries**
- Provide labeling to indicate the elevation of the base flood at intervals**
- Show the location of floodway boundaries**
- Provide labeling to identify the floodway boundaries**
- Show the location of all sink holes**
- Provide labeling to identify sink holes**
- Provide labeling to indicate the 100 year and 25 year flood levels for Sink Holes**

Profile Sheet for Street & Storm Water Collection System

Show the profile of finished grade of the street centerline and include the following:

- Provide a title for each profile that will identify the street that it represents
- Provide labeling showing the station number for the beginning of the profile
- Provide labeling that will indicate the name of the street that each end of the profile intersects with
- Provide labeling to indicate the station of the beginning and end of each vertical curve (TVC and VCT)
- Provide labeling to indicate the station number for the point of vertical tangent intersection (PVI).

CONSTRUCTION PLANS REVIEW CHECK LIST

- Provide labeling to indicate the elevations of the point of tangent to vertical curve (TVC) and the point of vertical curve to tangent (VCT) (both commonly known as point of vertical curve or PVC)
- Provide labeling to indicate the elevation of the point of vertical tangent intersection (PVI)
- Provide labeling to indicate the grade of each tangent, traveling from left to right, positive for uphill and negative for downhill.
- Provide labeling to indicate the values for the vertical curve length and K value

Show the profile to the storm water collection system and include the following (the pipe profiles can be shown on the street profile or as separate profiles):

- If the pipe profiles are shown separately from the street profiles, provide titles for each profile to identify it with the pipe segment that it represents
- Provide standard symbols on the profile that will represent each curb inlet, manhole, junction box, area drain and end wall.
- Provide labeling to indicate the elevation for the top of grate/lid of each curb inlet, manhole, junction box, area drain and end wall
- Provide labeling to indicate the invert of each curb inlet, manhole, junction box, area drain, and end wall
- Provide identification labeling (corresponding with the labeling used on the plan view sheet and/or the SW Structure and SW Pipe Table) for each curb inlet, manhole, junction box, and end wall
- Provide labeling (corresponding with the labeling used on the plan view sheet and/or the SW Structure and SW Pipe Table) indicating the structure type for each curb inlet, manhole, junction box, area drain and end wall.
- Show the storm water pipes between the structures and provide labeling to indicate:
 - the pipe slope (can be given in the SW Pipe table if used)
 - the pipe length (can be given in the SW Pipe table if used)
 - the pipe diameter (can be given in the SW Pipe table if used)
 - the type of pipe material (can be given in the SW Pipe table if used)
 - Provide labeling to reference the pipe profile information to the SW Structure and SW Pipe table if it is used

Grading Plan Sheet

- Show existing ground contours at 2 foot intervals and in a lighter gray or dashed line type.**
- Provide contour labeling at 10 foot intervals for the existing contours**
- Show proposed ground contours at 2 foot intervals in a bold and continuous line type.**
- Provide contour labeling at 10 foot intervals for the proposed contours**
- Show the existing and proposed ground contours at 2 foot intervals for detention basins**
- Show lot lines and street right-of-way lines.**
- Show edges of pavement**
- Show front and back of curbs**
- Show front and back of sidewalks**

CONSTRUCTION PLANS REVIEW CHECK LIST

Erosion Prevention and Sediment Control

- All items shown on the separate EP & SC check list have been met
- Show proposed ground contours at 2 foot intervals in a bold and continuous line type.
- Provide labeling at 10 foot intervals for existing and proposed contours
- Show the boundary for limits of disturbance
- Provide labeling for the boundary of the limits of disturbance
- Show lot lines and street right-of-way lines.
- Show edges of pavement, front and back of curbs, and front and back of sidewalks
- Show the location of all BMP's that are proposed
- Provide labeling to identify the BMP's
- Provide references to the EP & SC detail drawings
- Provide EP & SC notes as required by TDEC, giving the contractor specific instructions for:
 - BMP installation
 - BMP maintenance
 - Phased excavation of the site
 - Temporary ground coverings other than seeding
 - Temporary seeding schedule
 - Permanent seeding schedule
 - Reference the SWPPP, reminding the contractor that it exists and must be kept on the site
- Provide Spills and Non-Storm Water notes as required by the City of Johnson City
- Provide detail drawings for each BMP, giving more instructions for installation or maintenance of the BMP

Water / Sanitary Sewer Layout Plan Sheet

Refer to the Water and Sewer Department Design Standards.

Water / Sanitary Sewer Profile Sheet

Refer to the Water and Sewer Department Design Standards.

Detail Drawings Sheets

- Show a typical cross section for each type of street. Label each typical cross section with the name used for the cross section in the Subdivision Regulations. If the Planning Commission has allowed a modification to the typical cross section, add the word modified to the label. Provide a range of station numbering indicating where the typical cross section will be applied.
- Show the depths of the mineral aggregate base, the asphalt binder and the asphalt surface.
- Provide a detail of the type of curb to be used in the project.
- Provide a detail of curb offset at existing streets that have no curb.
Provide details for the sidewalk as follows:
 - Plan view and cross section of typical sidewalk
 - Contraction joint detail

CONSTRUCTION PLANS REVIEW CHECK LIST

- Construction (Expansion) joint detail
- Driveway apron detail
- Provide a detail of handicap ramps with truncated domes included.**
- Provide a detail of the truncated dome portion of the ramp.**
- Provide a detail of traffic calming devices.**
 - Show details of the detention basins as follows:**
 - Provide a cross section parallel with the flow through the basin.
 - Provide a cross section perpendicular to the flow through the basin.
 - Provide a detail of each outlet control structure providing dimensions
 - Emergency overflow device and specify location
 - Anti-seep collar
 - Berm and reinforced concrete outlet pipe
 - Concrete end wall for outlet pipe
 - Outlet pipe energy dissipation
 - Rock filled trench
- Provide a detail of each type of concrete end wall used for the storm water collection system.**
- Provide a detail of curb inlets, grates, and lids (with environmental message).**
- Pre-cast concrete structures for the curb inlets, grates and lids.**
- Provide a detail of any special manhole or junction box.**
- Provide a detail of a storm pipe trench showing pipe bedding and trench backfill material and method. Specify that the pipe will be installed as specified by the manufacturer.**
- Provide a detail of open channels (swales and ditches) (grass lined, rip-rap lined concrete lined).**
- Provide detail drawings and construction notes for Class V Injection Wells, includes sink holes that will be closed**
- See the Water / Sewer Department Standards for information on required detail drawings for water and sanitary sewer items.**

These items are the minimum required information that shall be included in a Construction Plan for a Subdivision.

Attach any additional comments:

FINAL PLAT REVIEW CHECK LIST

- Provide a note to state the existence or absence of an unstudied floodplain related to an unstudied or un-mapped stream
- Indicate the location of formally filled sink holes , show the foot print of the former highest closed contour within the sink hole (consult old city topo and USGS maps to discover former sink holes)
- For open channels, swales and ditches, show the boundary of the path that storm water will occupy during a 100 year/24 hour storm
- Show special drainage easements that may be needed in addition to the usual 7.5 feet each side of a lot line (for above and below ground utilities, stormwater ditches, swales & detention basins, etc.)
- Show Easements provided for water quality facilities (See Water Quality BMP Manual)
- Provide clear indication of who will be responsible for maintenance of detention basins and water quality facilities in the subdivision (See Maintenance Covenant section of Water Quality BMP Manual)

RIGHT-OF-WAY:

- Is the dedication of additional ROW along an existing street needed?
- Label the Right-of-Way widths at least once per street and at any location where the width changes
- Do the Right-of-Ways shown meet minimums established by Subdivision Regulations?
- Is the cul-de-sac radius at least the minimum length?
- Is the right-of-way around “T” and “Y” turn arounds adequate?
- Provide right-of-way radii at street intersections that are large enough to keep sidewalks on the right-of-way
- Show bearing and distance for center line tangent sections?
- Show horizontal curve information for curved center line (may be provided in a curve data table)

Additional Comments: _____



AS-BUILT PLANS REVIEW CHECK LIST

Project Name: _____

Location: _____

Reviewed by: _____ Date: _____

Review: 1st _____ 2nd _____ 3rd _____ 4th _____

COVER SHEET:

- Provide the Subdivision Name
- Provide the words "As-Built Plans" in the title
- Provide the Date
- Provide the name and address of the Owner and/or Developer
- Provide the name and address of the Engineer or Surveyor responsible for the As-Built Plans
- Provide the Engineer's or Surveyor's professional seal, properly validated
- Provide the Name of the Designer of the Subdivision
- Provide the Name of the Contractor that built the Subdivision
- Provide an index of Sheet Numbers (a table of contents)
- Provide a Location Map (at a scale presenting street names that are readable)

PLAN VIEW OF THE HORIZONTAL LAYOUT OF THE COMPLETED STREET:

- Compare the as-built conditions to the approved construction plans and provide information that indicates the difference between the as-built and proposed construction
- Provide Street Names for each street
- Provide Centerline Curve data (Radii, Delta, Length)
- Provide Centerline Tangent Bearings
- Provide Stationing along the Center line
- Show lines representing the edge of pavement
- Provide for each street dimensioning for width of pavement
- Show lines representing the back of curb
- Provide labeling to indicate the type of curb and gutter that was constructed
- Provide for each street dimensioning for width as measured from Back of curb to Back of curb
- Provide dimensioning for the width of each grass strip
- Show lines representing the front and back of sidewalk for each street
- Provide dimensioning for the width of sidewalk on each street

AS-BUILT PLANS REVIEW CHECK LIST

- Show the right-of-way lines for each side of the street, if different from the back of sidewalk
- If the back of sidewalk is not at the right-of-way line, provide dimensioning for distance between the back of sidewalk and the right-of-way line
- Provide the location of each handicap ramp, and indicate if truncated domes are present

Utility information may be placed on a separate layout sheet or included with the street layout information.

- Show storm water inlet locations and use identification labeling to help the plan user locate the same inlet on the profile of the storm water pipe
- Provide labeling that will indicate the type of inlet found (for standard combined curb and gutter or combined mountable curb and gutter)
- Provide labeling for the type of construction used for the box or manhole below the inlet (for example: precast or constructed in place out of _____)
- Show storm manholes that are not associated with storm water inlets, and use identification labeling common with the corresponding storm pipe profile
- Provide labeling to indicate the type of lid used on these manholes (grate with frame, or solid lid with frame)
- Provide labeling that will provide the type of construction used for the manholes
- Show storm water pipe routes and provide identification labeling common with the corresponding storm pipe profile
- Provide labeling to show the diameter and the type of material used for the storm water pipe (RCP, HDPE, CMP, etc.)
- Show locations of all end walls and provide identification labeling common with the corresponding storm pipe profile
- Show location of open channels constructed for storm water transport, providing labeling showing the width of the channel bottom and top, and the type of lining used (rip-rap, grass, etc)
- Show locations of other storm water structures associated with the Subdivision construction and provide dimensioning and identification labeling
- Provide labeling to indicate the type of material and construction used for these other storm water structures (precast concrete, concrete cast in place, corrugated metal, etc.)
- Show the location of the street light poles and other utility poles within the subdivision, provide labeling identifying the pole
- Show the location of electric company boxes, telephone company and cable television boxes and equipment located in the subdivision, provide labeling identifying the company (Power, Telephone, CTV, etc)
- Show any special drainage easements, providing labeling to indicate width, and the lengths and bearings of its centerline
- Show water and sanitary sewer facilities as-built information as specified by the Water and Sewer Department

PROFILE OF THE VERTICAL ALIGNMENT OF THE COMPLETED STREET AND STORM WATER PIPES:

- Compare the as-built conditions to the approved construction plans and provide information that indicates the difference between the as-built and proposed construction
- Show profile of final street tangents with labeling providing tangent grades

AS-BUILT PLANS REVIEW CHECK LIST

- Show vertical curves with labeling providing vertical curve lengths and elevation of high and low points

Utility information may be placed on a separate layout sheet or included with the street layout information.

- Show location of storm water inlets and associated boxes or manholes, provide identification labeling, indicate the top and invert elevations, the type of inlet used and the type of construction used for the box or manhole below the inlet
- Show the profile of all storm water pipes, provide identification labeling, indicate the slope of each storm water pipe, the diameter of each pipe and the type of pipe material used in the installation
- Show the profiles of all storm water channels that were constructed for the Subdivision, providing slope and channel lining material (rip-rap, grass, etc.)
- Show profiles of the water and sanitary sewer facilities as-built information as specified by the Water and Sewer Department

TYPICAL STREET CROSS SECTION:

- Compare the as-built conditions to the approved construction plans and provide information that indicates the difference between the as-built and proposed construction
- Provide a typical street cross section for each different street used in the subdivision:
 - Provide Street Name labeling
 - Provide identification of type of curb and gutter used
 - Provide dimensioning of the street components (pavement width, curb and gutter, grass strip, sidewalk, and side slopes)
 - Show average position within the right-of-way.

TYPICAL DETAIL DRAWINGS OF STORM WATER STRUCTURES AND BRIDGES:

- Compare the as-built conditions to the approved construction plans and provide information that indicates the difference between the as-built and proposed construction
- Provide a detail drawing for each different type of storm water inlet, box, manhole, culvert, bridge, or open channels constructed in the development. Research the approved construction plans and use those details if they apply, if not create a detail to fit what was observed in the as-built survey

STORM WATER DETENTION AND STORM WATER QUALITY BASINS, ETC.:

Compare the as-built conditions to the approved construction plans and provide information that indicates the difference between the as-built and proposed construction

STORMWATER MANAGEMENT AND WATER QUALITY FACILITIES:

- As-built content for Water Quality Facilities: see the Record Drawing section of the Water Quality BMP Manual and the Record Drawing Check List in the Manual's Appendix.

Show the completed detention basin:

- Provide location within the subdivision
- Provide foot print at top of berm elevation
- Provide the as-built storage volume
- Provide slope rate for its sides (such as 3:1 or 2:1)

AS-BUILT PLANS REVIEW CHECK LIST

- Provide the location and size of the emergency overflow channel, provide labeling to indicate width, length, and depth of the channel
 - Provide location of any permanent erosion control used around inlets and outlets to the basin
- Show a detail of the outlet flow control structure:
- Show the outlet flow control structure's location within the basin
 - Provide labeling that will identify the size, shape, type of material used for constructing the structure
 - Provide the elevations of the various outlet openings in the structure of the structure, including the top elevation

FLOODPLAIN AND FLOODWAY BOUNDARIES

- Show any streams existing within the subdivision, its corresponding floodplain boundary, elevations of the 100 year flood at intervals, and floodway boundaries as required by the City of Johnson City Zoning Ordinance. Utilize FEMA, State, City, and developer's engineering studies to obtain the data
- Show any sink holes existing within the development, providing the corresponding 100 year floodplain boundary and elevation, and the 25-year no-build boundary and elevation as indicated by the City of Johnson City Zoning Ordinance. Utilize FEMA, State, City, and developer's engineering studies to obtain the data
- If any sink holes were approved by the Tennessee Department of Environment and Conservation to act as injection wells, provide the as-built conditions of the injection well, and include any detail drawings from the construction plans that accurately reflect the way the injection well was constructed
- If any sink holes were approved by the Tennessee Department of Environment and Conservation to be closed by filling or other type of construction, provide as-built tope of the former sink hole and include and detail drawings from the construction plans that will reflect the way the sink hole was closed.

ADDITIONAL COMMENTS:

Recommended Trees for Planting near Sewer Lines

Botanical Name	Common Name	Comments
<i>Acer ginnala</i>	Amur Maple	Matures at 20-25 feet tall with a rounded to spreading shape. Usually a multi-stemmed tree with excellent tolerance to urban conditions. Fall foliage color can be yellow, purple and red.
<i>Acer griseum</i>	Paperbark Maple	Slow growing with heights to 25 feet. Cinnamon-brown exfoliating bark is attractive all year. Fall colors are orange, yellow and red.
<i>Acer palmatum</i>	Japanese Maple	Many selections are available with red or green foliage and various leaf forms. Needs good drainage and some protection from western sun. Slow growing.
<i>Amelanchier spp.</i>	Serviceberry	Flowers in spring prior to leafing out. Bark is smooth gray and is attractive in winter. Slow growing. <i>Amelanchier x grandiflora</i> 'Autumn Brilliance', 'Princess Diana' and 'Cole's Select' are good selections.
<i>Carpinus betulus</i>	European Hornbeam	'Pyramidalis' or 'Fastigiata' grows to 35 feet in height with a triangular canopy form. Foliage is dark green in summer and has yellowish cast in the fall. The bark is steel gray and is attractive during the winter.
<i>Cercis canadensis</i>	Eastern Redbud	Small, vase-shaped tree. Many cultivars exist with variations of flower color. Legume.
<i>Chionanthus spp.</i>	Fringetree	Grown mostly for the showy flower display in spring. Adapts readily to most sites from dry to somewhat moist.
<i>Cornus florida</i>	Flowering Dogwood	Tree can be quite particular to growing conditions. Blooms in early spring before leafing out. Showy flower bracts. Many cultivars are available.
<i>Cotinus spp.</i>	Smoke Tree	Species include <i>C. coggygria</i> and <i>C. obovatus</i> . Small multi-trunk tree that grows 15-20 feet tall. Blooms in June-July with seed structure looking like a puff of smoke. Tolerant of drought. Several cultivars available.
<i>Crataegus viridis</i>	Winter King Hawthorn	One of the best hawthorns. Vase-shaped canopy. White flowers in spring with showy red fruit in late summer and fall. Foliage turns scarlet to purple in fall. Avoid hawthorn species with thorns.
<i>Fagus sylvatica</i>	European Beech	'Dawyck Purple' and 'Fastigiata' are two excellent selections upright canopy form. Smooth, steel gray bark with shimmering green leaves during summer and a bronze color in the fall.

Recommended Trees for Planting near Sewer Lines

Botanical Name	Common Name	Comments
<i>Ginkgo biloba</i>	Ginkgo	'Fastigiata', 'Lakeview' and 'Princeton Sentry' are recommended for their upright, columnar forms. Tolerant of urban conditions, unique foliage and branch form, and bright yellow fall color. Free of pests.
<i>Gleditsia triacanthos</i>	Thornless Honeylocust	Unique & delicate foliage tree with smooth bark when young and more scaly as it matures. Brilliant yellow leaf color in fall. Susceptible to many diseases and insects when older; replace trees after 10-12 years.
<i>Ilex x attenuata</i>	Foster Holly	Grows well in sun and shade. Branching habit is conical and dense. Foster #2 is a female that produces bright red berries. Foster #4 is a male holly. Slow-growing. <i>Ilex opaca</i> 'Croonenburg' is also recommended.
<i>Koelreuteria paniculata</i>	Golden Raintree	Heights to 30 feet. One of the few yellow-flowering trees. Flowers are showy in may and June. Tolerant to urban conditions.
<i>Lagerstroemia spp.</i>	Crapemyrtle	<i>L. fauriei</i> , <i>L. indica</i> and <i>L. fauriei</i> x <i>L. indica</i> are available with an array of flower colors (white, red, pink, lavender). Usually grown as a multi-stem shrub or tree with an upright appearance. Can be susceptible to winter injury.
<i>Magnolia grandiflora</i>	'Little Gem' Magnolia	'Little Gem' is a slow-growing evergreen magnolia that can withstand urban conditions of extreme heat and drought.
<i>Magnolia x soulangiana</i>	Saucer Magnolia	Many seedling selections bloom early and are often damaged by spring frosts. The Greshman hybrids, the Little Girl hybrids and the Lily Magnolia selections bloom later and often avoid frost damage.
<i>Malus spp.</i>	Crabapple	A small tree with showy flowers and fruits. Many flower, color and canopy forms available, but many are also susceptible to diseases. Fruits may be undesirable. Recommended varieties include Adirondack, Prairifire, Red Jewel, Sargent, Springsnow and White Cascade.
<i>Oxydendron arboreum</i>	Sourwood	Excellent small tree that flowers in the summer with bright red leaf color in the fall. Heights to 35 feet when mature, but slow growing.
<i>Prunus caroliniana</i>	Carolina Cherry Laurel	Small evergreen tree with a pyramidal to rounded canopy form. White flowers bloom in March-April. Likes full sun to partial shade and well-drained soils.