

City of Temple Development Code



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DEVELOPMENT CODE*

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Section 1.01 Title and authority.

1.01.01 Title. This Development Code shall be known as and may be cited as “The Development Code of Temple, Georgia” or, for brevity, “The Development Code.”

1.01.02 Authority. This Development Code is adopted under authority of article 9, section 2, Paragraphs 3 and 4 of the Constitution of the State of Georgia, and other applicable laws enacted by the General Assembly.

Section 1.02 Purpose and intent

This Development Code regulates the construction of private land development projects, the subdivision of land, and the construction of public facilities and private improvements related to the development of the land.

1.02.01 Purpose. The purpose of this Development Code is to promote the health, safety, and general welfare of the public, and is intended:

- To encourage the development of economically sound and stable communities;
- To assure the provision of required streets, utilities, and other facilities and services to new land developments;
- To assure the adequate provision of safe and convenient traffic access and circulation, both vehicular and pedestrian, in new land developments
- To assure the provision of needed public open spaces and building sites in new land developments through the dedication or reservation of land for recreational, education and other public purposes
- To assure, in general, the wise development of new areas, in harmony with current land use of the community; and,
- To assure proper legal description and record action of land for recreational, education, and other public purposes;
- To assure in general the wise development of new areas, in harmony with the current land use of the community; and,
- To assure proper legal description and record action of all subdivided land.

1.02.02 Intent in interpretation. In the interpretation and application of this Development Code all provisions shall be:

- Considered as minimum requirements;
- Liberally construed in favor of the city; and,
- Deemed neither to limit nor repeal any other powers granted under state statutes.

1.02.03 Intent relative to private property agreements. This Development Code is not intended to repeal, abrogate, or impair any valid easement, covenant, or deed restriction duly recorded with the clerk of superior court, to the extent that such easement, covenant or deed restriction is more restrictive than the requirements imposed by this Development Code.

Section 1.03 General applicability.

1.03.01 Lands to which this Code applies. This development code applies to all lands within the city.

1.03.02 Acceptance of public streets.

- The city shall not accept a public street unless such street substantially corresponds in its location and lines with a street shown on preliminary subdivision plat approved under the provisions of this development code. A warranty deed for the street in question shall be provided after approval of the final plat for the street to become a public street.
- There shall not be any water mains, sewers, connection or other facilities or utilities in any street unless such street is shown on a final plat approved by the city or the street has attained the legal status of a public street, or a public utility easement has been dedicated coterminous with a private street in a gated community.

1.03.03 Recordation and transfer of property

- All plats that would result in the division of a property into two or more lots shall be approved by the City as required by this development code.
- No person, firm or corporation shall transfer, sell, or agree to sell any land by reference to, or exhibition of, or by other use of a plat of the subdivision of such land before such plat has been appropriately approved and recorded with the clerk of the superior court; provided further, that the description of metes and bounds in the instrument of transfer or other documents used in the process of selling or transferring such land shall not exempt the transaction from the requirements of this development code.

1.03.04 Exemptions.

- Previously Issued Permits and Variances. The provisions of this development code and any subsequent amendments shall not affect the validity of any permit or variance lawfully issued by the city if:
 - The development activity or building construction authorized by the permit or variance has been completed; or,
 - The development activity or building construction authorized by the permit or variance has been commenced prior to the effective date of this development code or the amendment, or will be commenced, after such effective date but within six months of issuance of the permit or grant of the variance; and
 - The development activity or building construction continues without interruption (except because of war or natural disaster) until the development or construction is complete. If the permit or variance expires, any further development or construction on that site shall occur only in conformance with the requirements of this development code in effect on the later of the date of such expiration or on the date when approval is given for a new permit or variance.
- No application to city. The city and its authorities are exempt from the regulations contained in this development code; the State of Georgia and all state agencies are exempt from the provisions of article V.
- Previously approved nonresidential subdivisions; Lots in subdivisions. For property zoned non residential and other than Design Concept Development (“DCD”), for which a final plat has been approved prior to the adoption of this Development Code, shall be developed in accordance with the dimensional standards of the zoning ordinance and other applicable development ordinances effective prior to the adoption hereof, provided that all necessary permits and development approvals are secured within six (6) months of the effective date of this Development Code and that development activity or building construction continues without interruption (except because of war or natural disaster) until the development or construction is complete.

Section 1.04 Interpretation

1.04.01 Responsibility for interpretation

- The Development Official shall be responsible for the interpretation of the requirements, standards, definitions or any other provisions of this development code.
- Interpretations of the development official may be appealed to the city council under the provisions of this development code relating to appeals. Upon any requests for an interpretation, the development official may decline to provide an interpretation and request a ruling by the city council within 30 days of the request, and such proceeding shall be considered an appeal.

1.04.02 Use of words and phrases. For the purpose of this development code, the following shall apply to the use of words and phrases:

- a) Words used in the present tense include the future tense. Words used in the singular tense include the plural tense, and words used in the plural tense include the singular tense. The masculine person “he” or “his” also means “her” or “hers”.
- b) Reference to the “city” and to the city council and any public officials or appointed bodies of the city not otherwise named by political jurisdiction, or defined in this development code shall always mean Temple, Georgia and its governing body, appointed or employed officials, and appointed bodies as named. These include:
 - 1. The city manager, appointed as such by the city council, or the city manager’s designee.
 - 2. The development official, appointed as such by the city council, or the development official’s designee.
 - 3. The planning and zoning commission, created as such and appointed by the council.
 - 4. The building official, appointed as such by the city council, or the building official’s designee.
 - 5. The zoning official, appointed as such by the city council, or the zoning official’s designee.
- c) References to an administrative department of Temple shall always mean the department created by the city council as such. These include:

1. Engineering department or development department. References to action by the “engineering department” or “development department” shall mean action by that administrative official to whom responsibility for that action has been assigned by the development official.
 2. Zoning department: References to action by the “zoning department” shall mean action by that administrative official to whom responsibility for that action has been assigned by the zoning official.
 3. Fire department: A reference to action by the “fire department” shall mean action by that administrative official of the Carroll County Fire Department to whom responsibility for that action has been assigned by the fire chief.
- d) References to public officials, departments, or appointed bodies of jurisdiction other than Temple shall always mean such persons or bodies having jurisdiction over or relative to Temple, Georgia. These include:
1. The clerk of the superior court of Carroll County, Georgia
 2. The Carroll County Health Department
 3. The West Georgia Soil and Water Conservation District
 4. Three Rivers Commission (RC)
 5. The Georgia Department of Natural Resources (DNR) and Transportation (DOT)
 6. The United States Army Corps of Engineers, the Federal Aviation Administration (FAA), the Federal Communications Commission (FCC), the Federal Emergency Management Agency (FEMA) and the Environmental Protection Agency (EPA)
 7. Georgia Regional Transportation Authority (GRTA)
 8. The Carroll County Water Authority
- e) The word “person” is intended to include any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, state agency, municipality or other political subdivision of this State, any interstate body or any other legal entity.

- f) The words “shall”, “will”, “is to” and “must” are always mandatory and non-discretionary, while the word “may” is permissive.
- g) The word “and” indicates that all of the conditions, requirements, or factors so connected must be met or fulfilled, while the word “or” indicates that at least one condition, requirement or factor so connected must be met.
- h) The term “such as” is intended to introduce one or more examples in illustration of a requirement or point, and is intended to mean “including but not limited to the following.”
- i) The word “day” means a calendar day unless otherwise specified as a work day, which means Monday through Friday.

1.04.03. Meaning of words and phrases

- a) All words and phrases are to be interpreted within the context of the sentences, paragraphs, subsections, section and article in which they occur.
- b) Words and phrases defined
 - 1. Words and phrases defined in this development code shall be interpreted as defined without regard to other meanings in common or ordinary use unless the context of the word or phrase indicates otherwise.
 - 2. Words and phrases not defined in this development code but defined in appendix A-Zoning or in any other city ordinance are to be used in the interpretation of this development code if the context is appropriate.
 - 3. Words and phrases not defined in this development code, appendix A-Zoning or in any other city ordinance shall be construed to have the meaning given by common and ordinary use as defined by Webster’s Third New International Dictionary
- c) In the event of conflict between this development code and the zoning code of the City of Temple, as set forth in Chapter 38 of the code of the City of Temple, the zoning code shall control.

ARTICLE II. PROJECT DESIGN STANDARDS

Section 2.01. Purpose of article II.

This article sets out the minimum requirements and standards for construction of land development projects, including general principals of design and layout and requirements for such public facilities as streets and utilities.

Section 2.02. Standards incorporated by reference.

2.02.01 DOT standard specifications. Unless otherwise specifically set forth herein, all of the materials, methods of construction, and workmanship for the work covered in reference to street construction and storm drainage construction shall conform to the latest standard specifications of the Georgia Department of Transportation.

2.02.02 AASHTO design standards. Design criteria and standards not specifically set forth herein shall conform to the latest edition of the AASHTO Policy on Geometric Design of Highways and Streets.

Section 2.03. General design standards.

2.03.01 Suitability of the land. Land physically unsuitable for subdivision or development because of the flooding, poor drainage, topographic, geologic or other such feature that may endanger health, life or property, aggravate erosion, increase flood hazard, or necessitate excessive expenditures of public fund for supply and maintenance of services shall not be approved for subdivision or development unless adequate methods are formulated by the developer for solving the problems. Such land shall be set aside for such uses as shall not involve such a danger.

2.03.02 Conformance to the comprehensive plan and other adopted plans.

- a. All proposed subdivisions shall conform to the comprehensive plan, transportation plan, zoning ordinance and development policies in effect at the time of submission to the Development Official.
- b. All highways, streets, and other features of the comprehensive plan and transportation plan shall be platted by the developer in the location and to the dimension indicated on the comprehensive plan.
- c. In subdivisions or developments related to or affecting any State or U.S. numbered highway, the Development Official shall require the approval of the Georgia Department of Transportation.
- d. When features of other plans adopted by the city council (such as schools or other public-building sites, parks or other land for public uses) are located in whole or in part in a subdivision, or when these features have not been anticipated by the plans, such features shall be either dedicated or reserved

by the subdivider for acquisition within a reasonable time by the appropriate public agency.

- e. Whenever such reserved land, or any portion thereof is not acquired, obtained or condemned by the appropriate public agency within one year period from the date of recording the subdivision, the subdivider may claim the original reservation, cause it to be subdivided in a manner suitable to the subdivider subject to the provisions of this development code.
- f. The Development Official may disapprove plats when such planned features, as specified by the current plan, are not incorporated into the plat.
- g. The development official may waive the reservation requirements whenever the public body responsible for land acquisition executes a written release stating that such a planned feature is not being acquired.
- h. Whenever a plat proposes the dedication of land to public uses that the development official finds not required or suitable for such public use, the development official may either refuse to approve the plat, or it may require the rearrangement of a lot so included in such land. The development official shall notify the land developer of the reasons for such action.

2.03.03. Name of subdivision or development project. The name of each subdivision or development project must have the approval of the City and Carroll County Map Room. The name shall not duplicate nor closely approximate the name of an existing subdivision or development project in the City of Temple or Carroll County.

2.03.04. *Blocks*. The length, width and shape of blocks shall be determined with due regard to:

Provision of adequate building sites suitable to the special needs of the type of use contemplated.

Zoning regulations as to lot sizes and dimension.

Need for convenient access, circulation, control and safety of street traffic.

Limitations and application of topography:

a. *Length*:

- 1) Blocks shall be at least 600 feet but not more than 1,800 feet in length, except as the Development Official considers necessary to secure efficient use of land or desired features of street pattern.
- 2) In blocks greater than 1,000 feet in length, one or more public easements of not less than 20 feet in width may be required to extend entirely across the block for pedestrian crosswalks, fire protection or utilities.

- b. *Width:* Blocks shall be wide enough to allow rows of lots, except where frontage lots on arterial streets are provided, or when prevented by topographic conditions or the size of the property, or for lots along the periphery of the subdivision, in which a single row of lots may be approved.

2.03.05. *Lots.*

- a Minimum lot dimensions and areas. All lots proposed in a subdivision shall meet or exceed the area and dimensional requirements of the Zoning Ordinance Code for the zoning district in which the lots are located. The size, shape and orientation of every lot shall be subject to approval for the type of development and use contemplated.
- b No lot shall be more than six times as deep as it is wide at the building setback line, unless accepted by the Development Official for reasons of topography or irregularity of the entire tract.
- c Authority of health department. Nothing contained in this article shall be construed as preventing the health department, after study of the conditions existing in a proposed subdivision, from requiring that all or any portion of the area of such subdivision shall not be built upon or that the minimum lot sizes set forth in this development code are inadequate and must be increased to ensure the protection of the public health.
- d Adequate building sites. Each lot shall contain a site large enough for a normal building that will meet all building setback requirements and not be subject to flood or periodic inundation. Lot remnants shall be added to adjacent lots, rather than remain as unusable parcels.
- e Arrangement. Insofar as practical, side lot lines shall be at right angles to straight street lines or radial to curved street lines.
- f Corner lots. Corner lots shall be sufficiently large as to permit the location of buildings so as to conform to the front building lines on both streets.
- g Frontage on highways restricted. Restricted lots shall not be platted to front directly on the right-of-way of an existing, major thoroughfare, including a State or U.S. (numbered) or existing City street unless specifically approved by the Planning Commission, unless the lots are served by a frontage road or a street contained within the proposed subdivision.
- h Double and reverse frontage lots. Double frontage and reverse lots are prohibited except where deemed to provide separation of residential development from a State or U.S. numbered highway (whether a collector or arterial street) or to overcome specific disadvantages of topography and orientation of property. **Ano access** easement of at least ten feet in width, improved with a landscaped planted

screen, across which shall be no right of access, shall be provided along the line of lots abutting any such highway or a disadvantaged use.

- i Properties adjacent to lakes. The subdividing of land adjacent to or surrounding an existing or proposed lake shall be such that lots abutting the lake shall be drawn to the centerline of the lake. Such requirements may be waived upon submittal to the Development Official of an acceptable method for the maintenance of the lake and any recreational operations, such as a common area with approved HOA documents recorded.

2.03.06. *Inter-parcel access requirements.*

- a *Internal Access Easements Required.* For any office or retail sales or services use, the property owner shall grant an access easement as described in this section to each adjoining property that is zoned or used for an office or retail sales or services use. The purpose of the easement is to facilitate movement of customers from business to business without generating additional turning movements on the public street.
- b *Access Easement Provisions.*
 - 1) The easement shall permit automobile access from the adjoining property to driveways and parking areas for customer or tenant use; but parking spaces may be restricted to use by the owner's customers and tenants only.
 - 2) The granting of such easement shall be effective upon the granting of a reciprocal easement by the adjoining property owner.
 - 3) Upon the availability of access to driveways and parking areas of the adjoining lot, the pavement or other surfacing of the owner's driveways and parking areas shall be extended to the point of access on the property line.
- c *Relief.* Where the proposed land use is such that adverse impact of the required easement on use of the property would outweigh the reduced impact on the public street provided by the reciprocal easements, the Development Official may waive the requirement for access easements, in whole or in part, administratively.

2.03.07. *Easements.* Easements shall be required in connection with subdivisions or developments for the following purposes, among others:

- a *Utility Easements.* Whenever it is necessary or desirable to locate a public utility line outside of the street right-of-way, the line shall be located in an easement dedicated to the city (or other appropriate public entity) for such purpose. Easements for water and sanitary sewers shall be a minimum of 20 feet wide, and may be required to be wider depending on the depth of cut.

b *Water Course and Drainage Easements.*

- 1) A publicly dedicated storm water easement or drainage easement is to be provided along any drainage channel, stream or water impoundment when a development located outside a street right-of-way is to be substantially centered on the watercourse or surround the high water line of the impoundment, and shall be of such width as the Development Official deems necessary for adequate access by maintenance equipment. All easements shall be no less than 20 feet wide.
- 2) Drainage easements off the street right-of-way shall be clearly defined on the plat and deed of the individual property owner, and such property owner shall keep the easement free of obstructions and maintain that part of the easement within the property owner's boundary line so that free and maximum flow is maintained at all times.

c. *Overlapping Easements.* Easements for water and sanitary sewers and drainage purposes shall not overlap unless approved by the Development Official. If allowed, as a minimum each utility must be at least separated by 10 feet and an extra 10 feet of easement shall be provided on the outside of proposed "as-built" and installed utilities.

Section 2.04. Required improvements.

2.04.01. *Minimum requirements.* The following improvements shall be provided by the developer or at the developer's expense in every subdivision or development in accordance with the standards contained in this article.

- a. Survey documentation of the public streets and lot lines in a subdivision.
- b. Public streets providing access to a development and to all lots in a subdivision, including the extension of streets required to provide access to adjoining properties.
 - 1) Public streets contained wholly within a subdivision shall be improved to the full standards contained in this article. Existing streets that adjoin a development shall be improved to the minimum standards from the centerline of the street along the development's frontage. (Half streets are not allowed).
 - 2) Public streets in nonresidential areas or serving a multi-family development shall be improved to "collector" street standards. In residential subdivisions, streets that serve 100 dwelling units or more shall be improved to "collector" street standards, while those serving fewer than 100 dwelling units shall be improved to "local" street standards.

- 3) Curb and gutter and sidewalk is required to be installed along all proposed roadways and existing roadways where the proposed development has street frontage.
- c. All drainage structures, including channels, shall be in place, inspected by the appropriate city appointed personnel (and funded by Developer prior to inspection) and functioning properly prior to the start of any building construction on any lot served or adjacent to the storm water sewer and easement.
 - d. Sidewalks shall be required as provided in section 2.06. The development official or the mayor and council may require additional sidewalks within a distance of up to one mile on streets leading to or going through commercial areas, school sites, places of public assembly, and other congested areas.
 - e. Street name signs, stop signs and traffic control signs shall be installed at the developer's expense.
 - f. Public water service, where in the written opinion of the Development Official, a public water supply is within a reasonable distance, shall be provided to every lot in a subdivision and to every development for both domestic use and fire protection. Water mains shall be connected to the existing public water system and extended past each lot. A licensed utility contractor shall install all elements of the water system, including mains, valves and hydrants at the developer's expense.
 - g. Where a public water supply is not available, each lot in subdivision shall be furnished with a water supply system approved by the Development Official and the Carroll County Health Department.
 - h. Fire hydrants shall be located along the streets in every subdivision by a public water system and within every development project, as approved by the development official & Fire Marshal.
 - i. Every lot in a subdivision and every development shall be connected to a public sanitary sewerage system, when public sanitary sewer is located within 500 feet of the subject property. When subject Property is located farther than 500 feet from public sanitary sewer, an on-site disposal system can be allowed by the health department. Sewer lines shall be connected to an existing sanitary sewerage system and extended past each lot, the adjoining property line and a 20 foot utility easement shall be provided along with a 40 feet wide temporary construction easement. Every element of the sanitary sewer system, including mains, lift stations, outfalls, and laterals, shall be installed at the developer's expense by a licensed utility contractor approved by the jurisdiction that owns the sanitary sewerage system.

2.04.02. *Gated communities.* Improvements in gated communities shall meet all requirements and standards that apply to public subdivisions.

2.04.03. *Guarantee in lieu of completed improvements.* No final subdivision plat shall be approved by the city or accepted for recordation by the clerk of superior court until one of the following conditions has been met:

- a. All required improvements have been constructed in a satisfactory manner and approved by the Development Official, or
- b. The city council has received in escrow 110 percent of the estimated cost of installation of the required improvements, and has approved an executed contract for installation of the improvements by a qualified contractor. Such improvements shall be limited to final topping course on the street, grassing of shoulders and deferred landscaping as depicted on the executed version of the final subdivision plat.

Section 2.05 Survey monuments

A half inch rebar 16 inches in length shall be placed at all corners of the exterior boundaries of the subdivision being developed and shall be set flush or up to six inches above the finished grade. Existing permanent monuments that, in the professional opinion of a registered land surveyor, are of sufficiently durable construction may be maintained in lieu of new monuments as described above. All other street or lot corners or angle points and points of curve in each street shall be marked with a half inch rebar and set two inches above the finished grade. All such monuments shall be properly set in the ground and shown on the final plat and shall be approved by a registered land surveyor prior to the time of final plat approval.

Section 2.06. Streets.

2.06.01. *Access.*

- a. A publicly approved street meeting the requirements of this article shall serve every development and every lot within a subdivision, except for gated communities.
- b. Every development and every subdivision shall have access to the public street system via a paved roadway.
- c. When land is subdivided into larger parcels than ordinary building lots, such parcels shall be arranged and designated so as to allow for the opening of future streets and to provide access to those areas not presently served by streets.
- d. No subdivision or development shall be designated in a way that would completely eliminate street access to adjoining parcels of land.

- e. Reserve strips controlling or attempting to limit access to streets, alleys or public grounds shall be prohibited.
- f. Development along State and U.S. numbered highways.
 - 1) Where a residential subdivision abuts or contains a State or U.S. numbered highway, the development official shall require the construction of a frontage road approximately parallel to and on each side of such right-of-way to provide access to the lots, deep lots with rear service drives or double frontage lots shall be provided (see "lots" above). Residential lots in a subdivision shall have no direct access to a State, U.S. numbered highway or City street without approval by the planning commission and all required federal and/or state approvals.
 - 2) Where a subdivision borders on or contains a railroad right-of-way or limited access highway right-of-way, the development official may require a street approximately parallel to and on each side of such right-of-way, at a distance suitable for the appropriate use of the intervening land, as for park purposes in residential districts, or industrial purposes in appropriate districts. Such distances shall be determined with due regard for the requirements of approach grades and future grade separations as determined by the Georgia Department of Transportation and Railroad.
 - 3) Subdivision streets that intersect a State or U.S. numbered highway shall do so at intervals of not less than 800 feet, or as required by the Georgia Department of Transportation, whichever is greater.

2.06.02. *Street classifications.* Streets are classified according to the function that they serve, the type, speed, and volume of traffic they will carry and the required standards of design. The classifications of streets and roads are shown in the comprehensive plan.

2.06.03. *Relation to present and future street system.*

- a. The street pattern character, extent, width, grade and location within a development or subdivision shall provide for the continuation or appropriate projection of the existing street pattern and planned minimum width, but in no case less than the required minimum width in the section of the community involved, unless the development official deems such extension undesirable. In a situation where topography or other conditions make continuous or conformance to existing streets impossible, conformance to a plan for a neighborhood approved by the development official shall be required.
- b. Existing streets that adjoin a development or subdivision boundary shall be deemed a part of the subdivision. The proposed street system within a subdivision shall have the right-of-way of existing streets extended no less than the required minimum width. Subdivisions that adjoin only one side of an existing street shall dedicate one-half of the additional right-of-way needed to meet the minimum

width requirement for the street. If any part of the subdivision includes both sides of an existing street, all of the required additional right-of-way shall be dedicated.

- c. Where, in the opinion of the development official, it is necessary to provide for street access to adjoining property, proposed streets shall be extended by dedication of right-of-way to the boundary of such property through the development.

2.06.04. *Design standards for streets.*

- a. Arterial streets. All State or U.S. numbered highways, and other thoroughfares classified as arterials, shall meet all design requirements of the Georgia Department of Transportation.
- b. Collector streets. A collector street that is a State or U.S. numbered highway shall meet all design requirements of the Georgia Department of Transportation. All other collector streets shall comply with the design and construction requirements of this development code.
- c. Local streets and cul-de-sacs. All local streets and cul-de-sacs shall comply with the design and construction requirements of this development code.
- d. Minimum width of right-of-way. Minimum width of right-of-way measured from lot line to lot line shall be as follows:

Table 2-1. Minimum Right-of-way Width.

<i>Street Classification</i>	<i>Width of Right-of-way</i>
Arterial street	**
Collector Street	
A	80 feet
B	60 feet
Local street and Cul de Sacs	50 feet

** Per Georgia DOT for State and U.S. numbered highways.

- e. Additional Right-of-Way. Subdivisions, which include an existing platted street, or road that does not conform to the minimum right-of-way requirements of this ordinance shall provide additional width along one or both sides of such street or road so that the minimum right-of-way required by this article is established. Subdivisions abutting only one side of such a street or road shall provide a minimum of one-half measured from the center of the existing right-of-way, of the right-of-way required by these regulations.

f. Vertical alignment of streets.

- 1) Grades on Arterials shall not exceed four percent; grades on collectors shall not exceed 8; grades on local streets shall not exceed 12. The grade across a cul-de-sac in all directions shall not exceed 5 percent. All streets shall have a minimum grade of one and a half (1 ½) percent. Major and minor thoroughfare profile grades, unless specified by GDOT, shall be connected by vertical curves of minimum length in feet equal to 30 times the algebraic difference between rates of grades expressed in feet per 100; for all other streets, including local streets and alleys, not less than twenty times.
- 2) All changes in grade shall be connected by a vertical curve so constructed as to afford a minimum sight distance, said sight distance being measured from the driver's eyes, which are assumed to be 3.5 feet in height above the pavement surface, to an object 3.5 feet in height on the pavement. The minimum sight distance shall be as follows:

Table 2-2. Minimum Sight Distance.

<i>Design Speed</i>	<i>Distance in Feet</i>
25	150
30	200
35	250
40	275
45	400
50	475
55	550

g. Horizontal alignment of streets.

- 1) Where a deflection angle of more than ten degrees in the alignment of a street occurs, the radius of curvature of the center line of said street shall be not less than as follows:

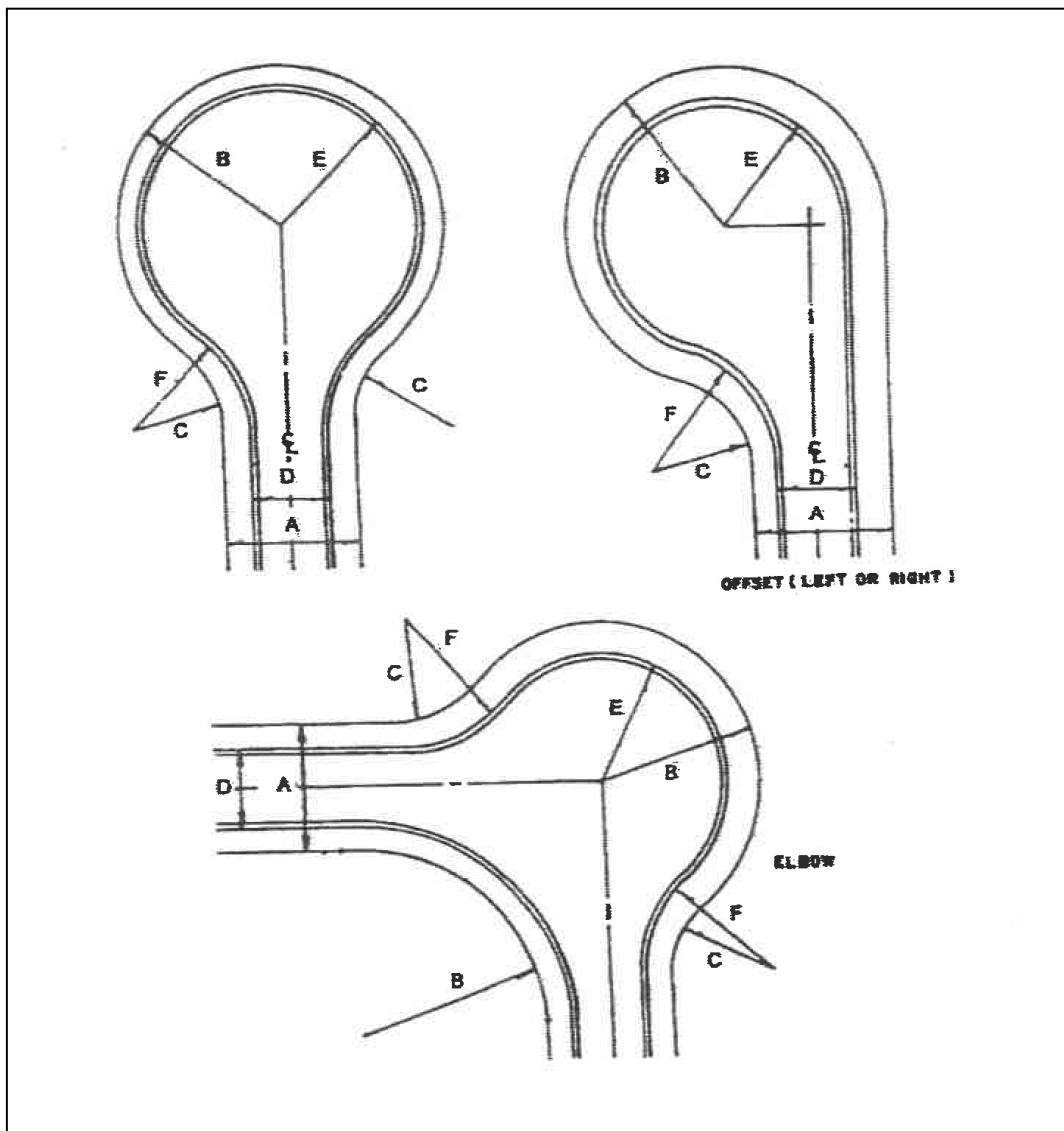
Table 2-3. Horizontal Alignment.

<i>Street Classification</i>	<i>Minimum Radius of Curvature of Center Line</i>
Arterial street	**
Collector street**	800 feet
Local street	300 feet
Cul-de-Sac & loops	200 feet

** Per Georgia Dot for State and U.S. numbered highways.

- h. The minimum horizontal midblock visibility measured on centerline shall be determined by the Georgia DOT or 500 feet for arterials; 300 feet for collectors and 200 feet for local streets.
 - 1) Curved streets shall have a minimum tangent of 100 feet at intersections as measured from the centerline of cross streets. A tangent of at least 250 feet in length shall be introduced between reverse curves on arterials, 100 feet on collector streets, and 50 feet on local streets.
 - 2) Adjoining street intersections shall be spaced at least 350 feet apart measured from edge of right-of-way.
 - 3) Street jogs with centerline offsets of less than 250 feet on local streets shall not be allowed.
 - 4) Intersections. The centerline of no more than two streets shall intersect at any one point. All streets shall intersect at no less than 80 degrees, and as near a right angle as possible. The angle of intersection is to be measured at the intersection of the street centerlines. Such intersecting streets shall provide an uninterrupted line of sight from the center point of the intersection for not less than the minimum sight distance required in accordance with this development code and/or as defined by GDOT, whichever is greater. Details of designs of intersections may be required.
 - i. In approaches to intersections, there shall be a suitable leveling of the street at a grade not exceeding three percent and for a distance of not less than 50 feet from the nearest line of the intersecting street.
 - ii. Curb line radius at street intersections shall be at least 30 feet and where the angle of street intersection is less than 90 degrees; the city council may require a greater radius.
 - iii. At an intersection where traffic is to be controlled by stop signs on the minor road, the minor road shall be designed to intersect the major road in accordance with the standards imposed by the Georgia Department of Transportation where applicable; and where not applicable, the minor road shall intersect at such location as will provide minimum sight distance in either direction along the major road as follows: 650 feet for an arterial, 600 feet for a minor thoroughfare, 400 feet for a collector street and 350 feet for a local street.
 - 5) Islands at intersections shall be subject to individual approval by the development official. In no case shall anything extend more than 24 inches above the back of the curb within the right-of-way of the intersecting street.

- 6) Intersecting street right-of-way lines shall parallel the back of curb or edge of pavement of the roadway at an offset of 11 feet, and shall be rounded with a radius of no less than four feet.
- i. Dead-end streets (cul-de-sacs).
- 1) A cul-de-sac shall be no more than 600 feet apart unless necessitated by topographic or other conditions and approved by the development official, but in no case exceed 800 feet in distance from another intersection or cul de sac. Cul-de-sacs shall terminate in a circular turnaround having a minimum right-of-way of at least 100 feet in diameter for residential and 150 feet for commercial and industrial, and a paved turnaround with a minimum outside diameter of 80 feet. Such a street shall be provided at the closed end with a turnaround having the following right-of-way and roadway dimensions:



Cul-De-Sacs

Table 2-5. Cul-de-Sacs dimensions go with diagram above

<u>Street Type</u>	A	B	C	D	E	F
Residential -	50	50	30	28	40	40
Commercial/Industrial	75	75	45	28	60	60

- 2) Where a subdivision contains a dead-end street, other than a cul-de-sac, the development official may require the subdivider to provide a temporary vehicular turnaround within the right-of-way, when the development official considers such to be necessary for effective traffic circulation.
- 3) A dead-end street other than a cul-de-sac shall not be allowed except as a temporary stage of construction of a street that is intended to be extended in a later stage of construction. Such a temporary dead-end street shall be provided with a temporary turnaround having a roadway radius of 40 feet if:
 - a) One or more lots front exclusively on the street; and,
 - b) Extension of the street is not under construction when the final plat is submitted for recording.
- 4) Temporary turnarounds shall consist of a tack coat and two inches of asphalt.
- 5) Alleys and service drives. Alleys or service drives may be required on any lot used for multifamily or industrial, but shall not be provided in residential blocks except where the subdivider produces evidence satisfactory to the development official of the need for alleys or service drives. Where an alley has been specifically authorized or required by the development official, it shall comply with the following minimum design standards:
 - a) The roadbed width shall be no less than 20 feet, containing a paved roadway of no less than 20 feet exclusive of gutters.
 - b) Dead-end alleys shall be provided with a turn-around having a radius of at least 40 feet.

6) Street names.

- a. Proposed streets that are obviously in alignment with others already existing and named shall bear the names of existing streets. In no case shall the name for a proposed street duplicate or too closely approximate, phonetically, existing street names in the city or Douglas County, irrespective of the use of the “suffix” street, avenue, boulevard, road, pike, drive, way, place, court or other derivatives.
- b. Property address numbers shall be provided by the engineering department.

7) Half streets prohibited. Half streets are prohibited. Whenever a street is planned adjacent to the proposed subdivision tract boundary, the entire street right-of-way shall be platted within the proposed subdivision.

8) Split Level Streets and One-way Streets. Streets which are constructed so as to have two traffic ways, each at a different level with the same right-of-way, shall provide a paved traffic surface of at least 20 feet on each level and a slope between the two traffic ways of not less than three to one. One-way streets and split streets will be allowed when:

- a. Topographic conditions are such that alternatives to the typical street construction would be more desirable.
- b. The shape and size of the parcel could be more efficiently developed by the use of such streets. In either case, approval must be obtained from the development official.

2.06.05. *Street Improvements.*

- a. *Minimum width of roadway.* The minimum roadway width, measured from back of curb to back of curb (or edge of pavement to edge of pavement for a swale section) shall be as follows:

Table 2-6. Minimum Roadway Width

<u>Street Classification</u>	<u>Width of Roadway</u>
Arterial	**
Collector**	40 feet
4-lane 12 foot median	60 feet
2-lane no median	28 feet
Local street	24 feet

** Per Georgia DOT for State and U.S. numbered highways.

- b. *Curb and gutter.*

- 1) Curb and gutter are required on all streets.
- 2) Local residential street curbs shall be six-inch x 24-inch vertical or roll back type 3,000 psi Portland cement concrete at 28 days in accordance with GDOT standards.
- 3) Curbs along collectors and local commercial or industrial street curbs shall be six-inch x 24-inch vertical type only, 3,000-psi Portland cement concrete at 28 days in accordance with GDOT standards.
- 4) Curbing along streets shall meet the following standards:
 - a) Developer's engineer or surveyor shall set line and grade.
 - b) One-half inch expansion joints of pre-molded bit mastic expansion joint material shall be provided at all radius points and at intervals not to exceed 50 feet in the remainder of the curb and gutter.
 - c) The development official shall individually approve special curbing design (center islands, etc.).
 - d) Curb and gutter shall be set true to line and grade and finished by skilled workers to the section shown on the plans.
 - e) Inferior workmanship or construction methods resulting in unsightly curb and gutter will be cause for rejection of the finished work.
 - f) All curbing shall be backfilled and grassed.
 - g) Adequate storm drainage structures shall be provided. The curb and gutter shall be constructed so as to present a smooth, even line both horizontally and vertically.
- 5) Valley gutters shall not be allowed across streets at street intersections.

c. *Slopes and Shoulder Improvements.*

- 1) On streets with curb and gutter, shoulders shall slope one-fourth inch to the foot toward the roadway for at least seven feet from back of curb, and no more than one-half inch to the foot for the remainder of the right-of-way width.
- 2) On streets with swale ditch drainage; the shoulders shall slope three-quarters inch to the foot away from the roadway for at least five feet to the drainage channel. The maximum slope for the drainage channel shall be ten feet of run for each one foot of fall, with a minimum 2-foot wide channel at the bottom of the swale.

- d. *Turning lanes.* Turning lanes may be required at all entrances to subdivisions and industrial, office and commercial developments that front on arterial and collector streets. Turning lanes shall be 12 feet in width (including curb and gutter if required) for a minimum distance of 200 feet measured from the intersection of the right-of-way lines or the edge of the driveway.
- e. *Street name and traffic control signs.* Street name signs of a type approved by the development official are to be placed at all intersections. Traffic control signs shall be placed by the developer at the developer's expense and conform to the U.S. *Manual on Uniform Traffic Control Devices*, latest edition.
- f. *Sidewalks.* Sidewalks shall be provided along all curb and gutter streets on both sides other than alleys and interstate highways, as follows:
 - 1) Sidewalks shall be located not less than one foot from the property line to prevent interference of encroachment by fencing, walls, hedges, or other planting or structures placed on the property line at a later date.
 - 2) Sidewalks shall be no less than five feet in width, constructed of concrete no less than four inches in depth.
 - 3) Sidewalks must be offset at least 18 inches from the back of curb, and the offset area shall be filled with stamped concrete or like material approved by the development official, except adjacent to residential property where the offset area may be backfilled and grassed. Areas adjacent to sidewalks and opposite the offset shall be backfilled and grassed.
 - 4) Sidewalks shall be constructed of concrete, except where alternative materials are approved by variance granted by the mayor and council. Concrete shall be 3,000 psi at 28 days strength.
 - 5) ADA Curb ramps shall be provided at all street intersections and street crosswalks.
 - 6) Sidewalk shall be constructed in compliance with the Federal Americans with Disabilities Act.

2.06.06. *Location of utilities in streets.*

- a. *Above-Ground Utilities.* Telephone poles, street light poles, telephone junction boxes and other public or private utility structures placed above ground within an existing street right-of-way must be at least eight feet back from the back of the street curb (or edge of pavement) and one foot back from the edge of any sidewalk, whichever is farthest from the roadway. In all new developments the proposed/new utilities shall be underground.

- b. *Underground Utilities.* Utilities placed underground shall be placed within the right-of-way as approved by the development official on construction drawings for the project.
 - 1) All utilities beneath pavement shall be installed and the ditch backfilled and thoroughly compacted before any pavement or base is installed, or the pipes shall be bored if installed after street construction.
 - 2) All utility manholes and valve boxes shall be brought to the finished grade within the roadway section.
 - 3) All private utilities that will cross under pavement shall be installed completely throughout the subdivision prior to any roadway base being applied. Installation of approved utility sleeves shall be considered as an alternate.

2.06.07. *Pavement Cuts.*

- a. Pavement cuts for the installation of utilities shall be avoided whenever possible. Utility crossings shall be bored across any arterial, subject to the approval of the Georgia DOT, and across any collector unless a pavement cut is approved by the development official.
- b. All utility street cuts within public right-of-way shall be reviewed and approved by the development official before construction begins.
- c. Pavement cuts across local streets shall be permitted, provided the road is repaired with at least six inches of 3,000 psi Portland cement and topped with at least two inches of E or F hot plant mix asphaltic cement. The top of the concrete pad shall not exceed the elevation of the aggregate base course of the original road construction.

Section 2.07. Driveways.

2.07.01. *Approval required.*

- a. No driveways shall be connected to a public street and no curbs or medians on public streets or right-of-way shall be cut or altered for access without a driveway permit issued by the development official.
- b. Requirements of the Georgia Department of Transportation shall apply whenever more restrictive than the standards in this development code.

2.07.02. Driveway connections

- a. Vehicular access from properties to streets shall comply with the following dimensional requirements, measured at the right-of-way line:

Table 2-9. Driveway Width Requirements (Feet)

	<u>Max*</u>	<u>Min. 2-way Width</u>	<u>Min. 1-way Width</u>
Single-Family Residence	25	20	12
Multi-Family Residential	36	26	20
Commercial & Industrial	36	30	20

* Includes divided entrances with center islands

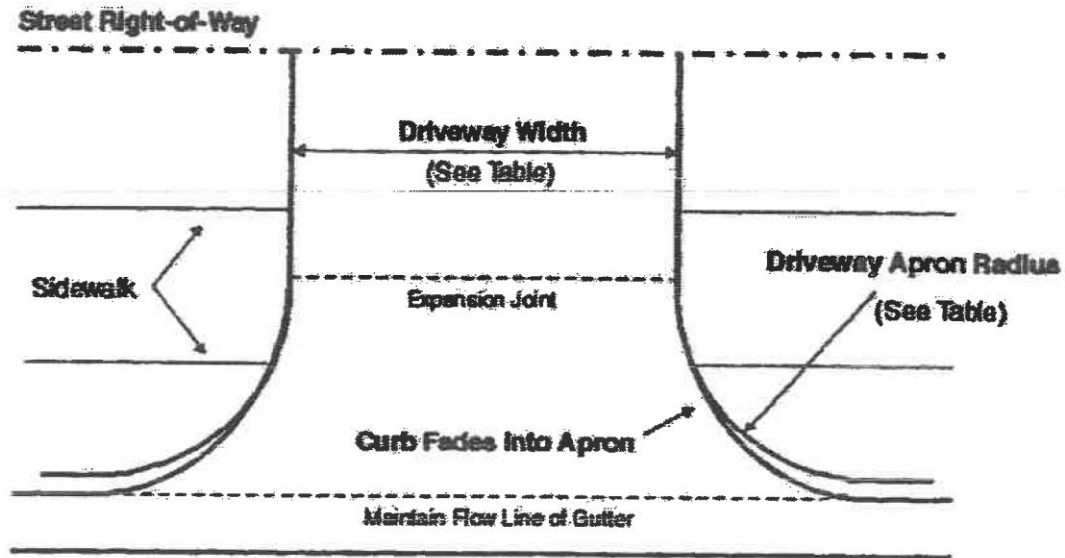
**At least one driveway for every lot shall be a minimum of 20 feet wide, unobstructed for fire apparatus accessibility.

Driveway aprons. Driveway connections shall be provided between the edge of pavement or back of curb to the right-of-way line. No property may be afforded access from a public street except as follows:

- 1) Curb and gutter streets shall be provided with a driveway apron constructed of 3000 psi concrete at least six inches thick. Sidewalks, where provided, shall be by construction joints or control joints.
- 2) All driveway aprons shall have a radius connecting the driveway to the curb line or pavement edge as follows:

Table 2-10. Driveway Apron Radii.

<i>Land Use</i>	<i>Minimum Driveway Radius</i>
Single-Family Residential	5 feet
Commercial or Multi-Family	30 feet
Industrial	30 feet



Example—Residential Driveway Apron w/sidewalk and curb and gutter:

- c. The distance from a driveway to the intersection of two streets, and the distance between driveways along a street, shall be based on the type of street the driveway connects to, in accordance with the following table. All measurements shall be taken along the right-of-way lines.

Table 2-11. Driveway Separations.

	<i>Type of Street</i>		
	Arterial	Collector	Local
Intersection: ROW to Edge of Driveway	150'	100'	20'
Between Driveways (edge to edge)	200'	50'	20'

- d. The driveway apron shall be constructed such that no water shall enter from the street.

2.07.03. *Number of driveways limited along major streets.*

- a. Along all arterial streets and any other State or U.S. numbered highway, no more than one point of vehicular access from a property shall be permitted for each 300 feet of lot frontage, or fraction thereof.
- b. Along collector streets that are not State or U.S. numbered highways, no more than two points of vehicular access from a property to each abutting public street shall be permitted for each 400 feet of lot frontage, or fraction thereof; provided however, that lots with less than 100 feet of frontage shall have no more than one point of access to any one public street. The development official shall determine whether the points of access may be unrestricted or will have to be designed for right-in, right-out traffic flow.

Section 2.08. Sight triangle at street and driveway intersections.

- a. A sight visibility triangle shall be located at every street intersection with another street or a private driveway.
 - 1) At public street intersections, the sight visibility triangle is delineated by the two intersecting street right-of-way lines and a line connecting the right-of-way lines at the points indicated in the Sight Triangle Table. The connecting points shall be measured from the right-of-way lines extended to their points of intersection.
 - 2) At private driveway intersections with public streets, the edge of the driveway's pavement or back of curb will be used for the sight triangle measurements along the driveway.

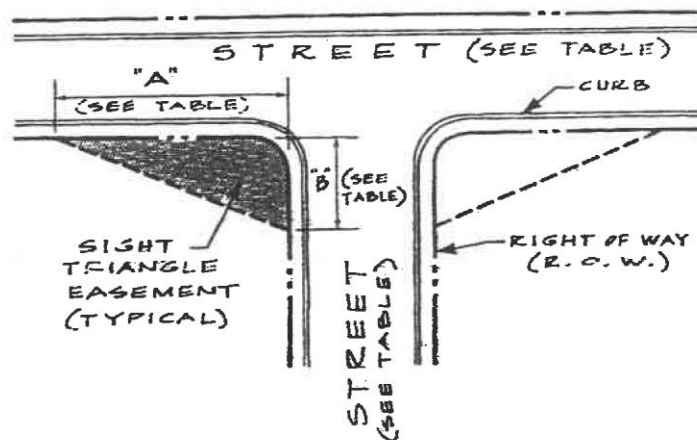


Table 2-12. Sight Visibility Triangle Table. (See Drawing)

	<u>“B” Feet</u>		<u>“A” Feet</u>	
		<u>Local Street (A)</u>	<u>Collector (A)</u>	<u>Arterial (A)</u>
Private Drive	25	25	50	100
Local Street	30	30	100	150
Collector	100	30	100	150
Arterial	150	30	100	150

- b. The planting of trees or other vegetation or the location of structures exceeding 30 inches in height that would obstruct the clear sight across the sight visibility triangle shall be prohibited.
- c. No commercial driveway shall be constructed within 250’ of the ROW corner of an intersection.

Section 2.09. Storm drainage - Reserved

Section 2.10. Public utilities – Reserved

2.11. Building and structure heights.

2.11.01. The rules and regulations regarding building and structure heights shall be as set forth in the City of Temple Zoning Code.

Section 2.12 Screening of utility units on nonresidential lots.

On nonresidential lots, all outdoor utility units, including but not limited to heating and cooling units, outdoor refrigeration units and power meters, shall be completely screened from view from the perspective of any point on a public street located within 50 feet of the subject lot; utility units in other locations on the lot shall be screened with the same façade/siding materials required for the nearest adjacent building wall on the lot.

ARTICLE III. LANDSCAPING, BUFFERS AND TREE CONSERVATION

Section 3.01. Purpose of article III.

The purpose of this article is to improve the aesthetic qualities of the city and to protect and preserve the appearance, character and value of its neighborhoods and business areas by:

- a. Providing for quality and consistency in the design of landscaping and screening.
- b. Providing for the separation of incompatible types of land use.
- c. Providing for the conservation of existing trees and the planting of new trees in pace with the land development process.
- d. For the improvement of air quality and water quality and a higher standard of environmental living.

Section 3.02. Landscaping; where required.

3.02.01. *Residential subdivisions, single-family or two-family lots.* Landscaping requirements imposed on any residential subdivision for single-family development, or on the lot when a single-family or two-family dwelling is to be constructed, only to the extent required under this article.

3.02.02. *Multi-family and nonresidential uses.* Landscaping shall be installed on the property of any multi-family or nonresidential use or development as a condition of site plan approval, or issuance of a development permit or building permit, whichever occurs first. Landscaping shall be provided in accordance with the requirements of this article, which includes the following:

- a. Within the yard areas of the property, in landscaping strips along the street frontages, and within the minimum side and rear principal building setbacks.
- b. Within parking lots containing ten or more parking spaces and between such lots and streets from which they are visible.
- c. As buffers between incompatible land uses and zoning districts.
- d. As replacement trees for those removed during construction, or as a supplement, in order to achieve the tree conservation requirements of this article.

Section 3.03. Calculation of “tree units.”

3.03.01. *Use of tree units.* The landscaping requirements of this article with regard to the preservation or planting of trees is expressed in terms of “tree units” rather than the number of trees. This approach provides the developer with wide latitude of choice as to the number and sizes of trees to be planted, and their distribution following aesthetic landscaping practices, while achieving a common standard on all properties.

3.03.02. *Establishment of tree unit values.* The diameter of a tree’s trunk establishes the “tree unit” value of an existing tree, as shown on table 3-1. The values assigned to trees of the same size are different for existing and new trees, as indicated in the table. One “unit” is not the same as one “tree.” Actual tree diameters or calipers are to be rounded to the nearest whole number for the calculation of tree unit values (e.g., 4.5 inches in diameter = 5 inches).

Table 3-1			
Tree Unit Values for Existing Trees			
Tree Diameter (DBH) in Inches	Tree Units	Tree Diameter (DBH) in Inches	Tree Units
Seedlings	0.0	19	4.4
1	0.0	20	4.6
2	0.0	21	4.8
3	0.0	22	5.0
4	0.6	23	5.2
5	0.8	24	5.4
6	1.0	26	5.6
7	1.2	26	5.5
8	1.4	27	6.0
9	1.6	28	6.3
10	1.8	29	6.4
11	2.3	34	6.6
12	2.3	31	7.2
13	2.5	32	7.8
14	3.0	33	8.4
15	3.3	34	9.0
16	3.6	35	10.0
17	4.0	36	11
18	4.2	37 or greater	12.0 + 1.0 for each inch in diameter greater than 37

Table 3-2			
Tree Units for New (Replacement) Trees			
Tree in Diameter (DBH) in Inches	Tree Units	Tree Diameter (DBH) in Inches	Tree Units
Seedlings	0.0	9	1.3
1	0.0	10	1.5
2	0.0	11	1.7
3	0.4	12	1.9
4	0.5	13	2.2
5	0.6	14	2.5
6	0.7	15	2.8
7	0.9	16	3.1
8	1.1	17 or greater	3.5 + .5 for each inch in diameter greater than 17”

3.03.03. Minimum standards. On each property for which a Tree Conservation Plan is required by this Development Code, existing trees may be retained and new trees shall be planted so that the property shall attain or exceed the required tree density standard for the proposed use, exclusive of any acreages within a zoning buffer area (as required under this article) or a stream buffer. Existing tree retention, as opposed to tree clearing and replanting, is encouraged by this Development Code. The minimum required tree density standard shall be as follows:

Residential- 15 tree units per acre

Office/ Commercial- 15 tree units per acre

Industrial- 10 tree units per acre

3.03.04. *Proposed project's tree density calculation.* The proposed project's tree density shall be calculated by summing the credits for trees to be retained and trees to be planted, and dividing that number by total acreage of the project (excluding zoning buffer and no – disturb areas as required by code and stream buffer acreage). Proposed tree planting plans must limit proposed evergreens to no more than a total of 35% of total replacement values for the development.

Example	
Calculation of Tree Units Required	
Example: 24.6 acre commercial project with 3.2 acres in zoning buffers and 2.6 acres in stream buffers on the site.	
Total Property	24.6
Area in Zoning Buffers	-3.2
Area in Stream Buffers	-2.6
Net Area Subject to Tree Conservation	18.8
Times minimum units per acre	x 15

3.03.05. *Achieving tree density required.* Every reasonable effort must be made to achieve the minimum required tree density standard on each development site. However, this Development Code contemplates that, due to topographic or other conditions, the exact number of tree units required by the proposed project's tree density calculation may not be able to be planted and still meet professional standards for spacing and survival. A method of alternative compliance, therefore, is provided.

3.03.06. *Alternative compliance to tree density requirements.*

- a. Overview. The intent of the tree conservation requirements is to insure that the required density of trees is maintained on all developed sites. Occasionally, this intent cannot be met because a project site will not bear the required density of trees. To provide a viable alternative for such cases, the developer may be allowed to contribute to the city of Temple Tree Replacement Fund when

compliance with established standards cannot be achieved due to site considerations. As many trees as can reasonably be expected to survive must be planted on the site in question. In no instances shall more than 50 percent of the required tree density be met through alternative compliance, without approval by the Planning Commission and Mayor and Council.

- b. The number of newly planted trees that can reasonably be expected to survive on a site shall be determined from the following criteria:

Overstory Trees- 200 square feet of previous root zone

Understory Trees- 75 square feet of previous root zone

- c. Developers are required to plan their projects in such a manner as to comply with the standards provided by this Development Code. Overdevelopment of a lot will not be recognized by the City as a criteria allowing use of the alternative compliance method. Site characteristics permitting use of alternative compliance are limited to those physical features outside the control of the owner and/or developer, such as the presence of rock, unusually steep grades, or ravines.
- d. The land disturbance permit will only be issued after the Development Official has verified entitlement to use alternative compliance under the standards of this section.
- e. Tree Replacement Fund. If, in the determination of the Development Official, conditions do not allow for the planting of the required tree units on site due to physical characteristics of the lot outside the owner/ developer's control, the permit holder may pay the City 125 percent of the total cost of purchase, delivery and installation (including a 2-year warranty) of trees at 3" (three inch) caliper, and the City will use this money to plant trees on public property. Actual fees shall be set by the City Council from time to time pursuant to the Administration and Enforcement Article of this Code regarding schedules and fees.
- f. Fund Administration. The City of Temple Tree Replacement Fund will be maintained by the Finance Director. A report for the City of Temple Tree Replacement Fund will be made available to the City Council no less often than annually. Use of the funds from the Tree Replacement Fund shall be approved by the City Council.

CITY TREE REPLACEMENT FUND Calculating Contribution Amounts

EXAMPLE: A 4.0 acre commercial development project site has the following:

- A required Tree Density Factor of 60.0 (15 units per acre x 4.0 acres).

- Existing trees that will remain, totaling 26.0 tree units
- Enough room on the property to accommodate some new trees, but only 22.0 tree units
- Substantiation that sufficient open acreage exists to meet the ordinance standards, but physical features of the site preclude installation of the remaining required tree units.

1. Determine the Tree Density Deficit as follows:

60.0 tree units required minus 26.0 existing tree units on site minus 22.0 new tree units = a deficit of 12.0 tree units

2. Determine the acceptable contribution as follows:

Deficit of 12.0 tree units / 3-inch tree units (0.4) x \$Fee*

In this example, (12.0 divided by 0.4) X \$FEE = 30 x \$FEE*

*FEE equals == *Estimated cost of purchase, delivery, installation and 2-year warranty of a 3-inch caliper tree, times 125 percent

3.03.07. *Specimen Trees*. The City of Temple strongly advocates the preservation of specimen trees. In order to encourage the preservation of specimen trees and the incorporation of these trees into the design of projects, the following shall apply:

- a. All specimen trees shall be located on the grading plan and the landscaping, buffers, tree conservation, and land disturbance plans, whether or not the trees are proposed to be retained.
- b. The tree unit values shown on Table 3-1 may be increased by 100 percent for an existing tree that meets the definition of a “specimen tree” or for a “specimen tree stand” as defined herein, provided that extraordinary measures as needed are taken to protect the trees and assure its survival. Such measures may include, but are not limited to, the provision of tree wells, restraining walls, aeration, or supplementary irrigation, as applicable to the site of the trees and as approved by the Development Official according to the provisions of this article.
- c. Removal of specimen trees. Specimen trees may not be removed from property other than single-family residential property for any reason not specifically enumerated as an exemption in section 3.14.18 without first obtaining a variance. Such variance must be granted by the City Council under the standards set forth in section 10.03 of this Development Code.

DIVISION 1. LANDSCAPING OF PROJECTS IN GENERAL

Section 3.04. Landscaping of yard areas.

3.04.01. Minimum requirements.

- a. Single-family and two-family lots must have a minimum of one hardwood canopy trees (i.e. oaks, hickories, yellow poplar, etc.) at least 3 inch caliper in diameter, newly planted in each front yard, as defined in the zoning ordinance.
- b. The minimum landscaping requirement for all uses, excluding single-family and two-family uses or developments, is four shrubs per 5,000 square feet of total lot area.

3.04.02. Open yard areas. All portions of the site not covered with paving or buildings shall be landscaped. Open areas not covered with paving or buildings shall have ground cover utilized on all slopes in excess of 25 percent (1 foot of rise in four feet of run) and which must be specifically selected to stabilize the slope.

3.04.03. Screening of trash receptacles, storage and loading docks for Commercial, Industrial and Office & Institutional. All storage areas, loading docks or areas, trash receptacles, equipment storage, and service vehicles which are visible from any public right-of-way shall be attractively screened from all streets or public rights-of-way by a combination of dense planting of evergreens and an attractive solid wall enclosure (constructed of concrete masonry units or poured in place concrete to a minimum of 12-inches thick).

Section 3.05. Landscape strips along front lot lines.

3.05.01. Landscape strips along front lines; where required. A minimum 10-foot wide landscape strip shall be provided along the full length of any street frontage of a multi-family or non-residential development.

3.05.02. Location of structures in frontage landscape strip. Frontage landscape strips shall contain no structures, parking areas, patios, storm-water detention facilities or any other accessory uses except for the following:

- a. Retaining walls or earthen berms constructed as part of an overall landscape design.
- b. Pedestrian-oriented facilities such as sidewalks.
- c. Underground utilities.
- d. Driveways required accessing the property.
- e. Signs otherwise permitted by this Code.

3.05.03. *Landscaping required in frontage landscape strips.*

- a. All portions of a frontage landscape strip shall be planted in trees, shrubs, flowers, grass or ground cover, except for those ground areas that are mulched or covered by permitted structures.
- b. Trees shall be provided within the frontage landscape strip at the rate of one tree unit for every 75 feet of length of street frontage, or portion thereof. Such trees may be deciduous or evergreen (but no more than 25% of required units in frontage strip may be evergreen), but must be of a type that is suitable to local growing conditions and that will normally reach a height of at least 15 feet upon maturity.
- c. Upon planting, new trees shall have a caliper of no less than three inches, and may be clustered for decorative effect following professional landscaping standards for spacing, location, and design.
- d. Trees and shrubs in the frontage landscape strip are not to extend into the street right-of-way, and must not obstruct vision for ingress and egress.

Section 3.06. Landscape strips alongside and rear lot lines.

3.06.01. *Landscape areas along side and rear lot lines; where required.* All portions of a lot containing a multi-family or non-residential use, between a side or rear lot line and the minimum required side or rear setback line for principal buildings shall be landscaped as required by this section. Buffers, where required under section 3.09, shall be installed in lieu of the landscaping required under this section.

3.06.02. *Location of structures in side or rear landscape areas.* Side and rear yard landscaping areas shall contain no structures, parking areas, patios, storm water detention facilities or any other uses except for the following:

- a. Retaining walls or earthen berms constructed as part of an overall landscape design.
- b. Underground utilities.
- c. Driveways required in order to access neighboring property.

3.06.03. *Landscaping required in side and rear landscaping areas.*

- a. All portions of a side or rear landscaping area shall be planted in trees, shrubs, grass or ground cover, except for those ground areas that are mulched or covered by permitted structures.

- b. Trees shall be provided within the side yard landscape strip at the rate of at least one tree unit for every 75 feet of length or portion thereof, or the side yard landscape strip may be planted in a continuous hedge or jumpers (except for approved access drives and utility easements).

DIVISION 2. PARKING LOT AND LOADING AREA LANDSCAPING

Section 3.07. Parking lot trees.

3.07.01. *Parking lot tree; where required.* Shade trees shall be provided within any parking lot designed or intended to accommodate ten cars or more, in accordance with the requirements of this section.

3.07.02. *Parking lot trees; minimum standards.*

- a. Shade trees shall be provided within the parking lot at a ratio of at least one tree unit for every 30 parking spaces, or portion thereof. Each tree shall be located within the parking lot in reasonable proximity to the spaces for which the tree was required. Trees provided to meet the minimum requirements of any landscape strip or buffer under this article may not be counted toward this requirement.
- b. New trees shall have a caliper of no less than three inches upon planting, and may be clustered for decorative effect following professional landscaping standards for spacing, location, and design.

3.07.03. *Parking lot islands and planting areas.*

- a. As a minimum, a landscaping island shall be located at the end of every parking bay between the last parking space and an adjacent travel aisle or driveway. The island shall be no less than eight feet wide for at least one-half the length of the adjacent parking space. The island shall be planted in trees, shrubs, grass, or ground cover except for those areas that are mulched.
- b. Tree planting areas shall be no less than eight feet in width and shall provide at least 100 square feet of planting area per tree. No tree shall be located less than two and one-half feet from the back curb. All parking lot landscape islands, strips or other planting areas shall be curbed with minimum six-inch high curbs.
- c. Landscaping islands and tree planting areas shall be well drained and contain suitable soil natural irrigation characteristics for the planting materials they contain.

Section 3.08. Street-side screening for parking and loading areas.

3.08.01. *Parking lot and loading area screening; when required.* Any parking lot designed or intended to accommodate ten or more cars, and any area set aside for loading or unloading of trucks or vans, that are visible from a street right-of-way, must provide a visual screen of the parking lot or loading area that meets the requirements of this subsection.

3.08.02. *Street-side screening; minimum standards.*

- a. Screening to a height of two and one-half feet must be provided along the edge of the parking lot or loading area closest to and parallel to the street, and along any edge closest to and within 30 degrees of being parallel to the street. A driveway to the parking lot or loading area may interdict the landscaping.
- b. The visual screening shall be decorative and opaque to a height of two and one-half feet above the elevation of the parking lot or loading area or the street, whichever is highest.

3.08.03. *Street-side screening; techniques.* Parking lot or loading area screening may be provided in any of the following ways:

- a. *Planted only.* A hedge consisting of at least 12 shrubs per every 40 linear feet that will spread into a continuous visual screen within two growing seasons. Shrubs must be at least 18 inches tall at the time of planting, and be certified by a registered Landscape Architect to be of a species that will normally exceed two and one-half feet in height at maturity and are suitable for the parking lot application.
- b. *Earthen berm.* An earthen berm constructed to a height of two and one-half feet above the adjacent elevation of the street or loading area, whichever is highest, shall not exceed a slope of one vertical in two horizontal (1:2) and shall have a crown of at least two feet. The berm shall be planted in ground covers or other plant materials to achieve a decorative effect.
- c. *Wall.* A wall of brick, stone or finished and textured concrete may be constructed to the required height and opacity, and landscaped with plant material to achieve a decorative effect.
- d. *Combination.* Any combination of hedge, berm or wall that effectively provides a visual screen of the parking lot or loading area to a height of two and one-half feet and achieves a decorative effect through appropriate use of landscaping and plant material.

3.08.04. *Street-side screening; location.* The loading area screening treatment may be located within the frontage landscape strip required under this article.

DIVISION 3. BUFFERS BETWEEN INCOMPATIBLE LAND USES.

Section 3.09. Land use buffers; where required.

A land use buffer shall be required in any multi-family or nonresidential development project along a side or rear lot line that abuts a less intense land use, as follows:

Provide a buffer on the lot of this use				
Along a side or rear lot line next to this use or zoning	Single Family Residential	Multifamily	Office or Commercial	Individual
Single Family Residential		X	X	X
Multifamily			X	X
Office or Commercial				X
Light or Heavy Industrial				

x= buffer required

Section 3.10. Buffer areas design standards.

3.10.01. *General.* Buffer areas shall contain no driveways, parking areas, patios, storm water detention facilities, or any other structures or accessory uses except for a fence, wall, or earthen berm constructed to provide the visual screening required to meet the standards of this development code. Utilities may be permitted to cross a buffer if the screening standards of this development code will be subsequently achieved. Vehicular access through a buffer may be allowed only as a condition of rezoning, special use or planned development approval by the city council.

3.10.02. *Minimum Required Screening.* Minimum required screening shall consist of a natural buffer utilizing existing vegetation or, if existing vegetation is inadequate to provide an opaque screen, a structural buffer, in order to achieve an opaque continuous visual screen to a height of six feet, or any combination of existing and replanted vegetation which can reasonably be expected to create an opaque visual screen six feet high within two growing seasons.

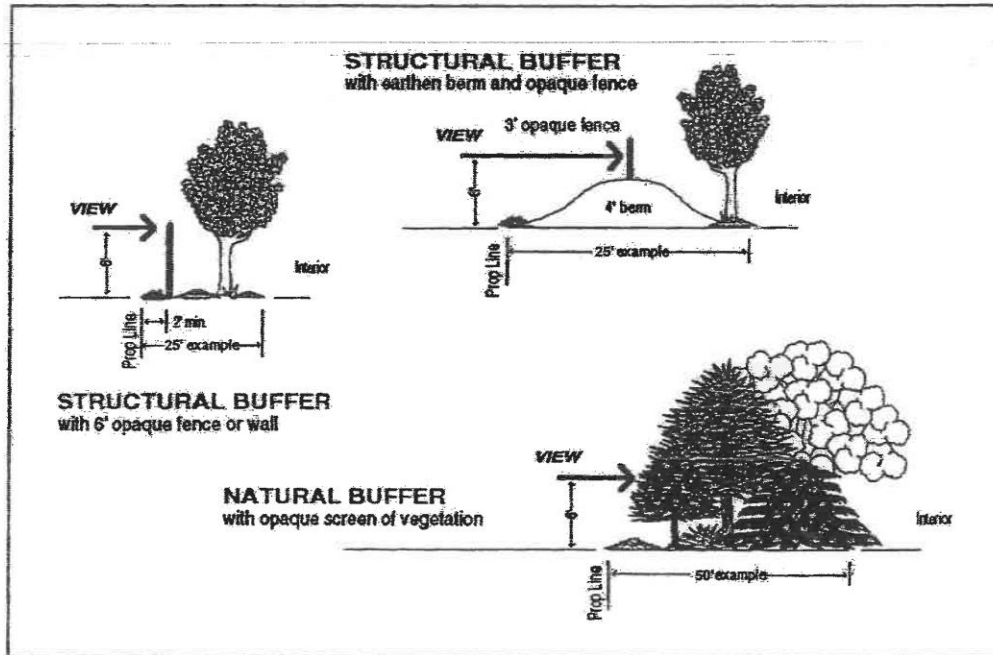
3.10.03. *Natural buffers.*

- a. Width. A natural buffer shall have a minimum width of 50 feet, or greater as required to achieve an opaque visual screen.
- b. Natural buffers may contain deciduous or perennial vegetation, but shall contain evergreen shrubs and trees suitable to local conditions that will provide an opaque visual screen during all seasons of the year.

3.10.04. *Structural buffers.* Structural buffers shall meet the following criteria:

- a. Width. A structural buffer shall have a minimum width of 30 feet, or greater as required to achieve an opaque visual screen.
 - b. Structural buffers shall be vegetated throughout the minimum area required for the buffer around any fences or walls and upon any earthen berms, which may include grass, ground covers, shrubs, and trees.
- 1) All earthen berms shall have a maximum side slope one vertical of rise to two horizontal (2:1). Earthen berms shall not be constructed within the drip line of any existing trees that will remain on the property.
 - 2) Trees shall be located or planted within any structural buffer at a density of no less than one tree unit for each 30 feet of buffer length or portion thereof. New trees shall have a caliper of no less than three inches upon planting, and may be clustered for decorative purposes following professional landscaping standards for spacing, location, and design.
 - 3) Fences and freestanding walls shall present a finished and decorative appearance to the abutting property, and shall be located no closer to the property line than two feet. Shrubs, ground covers, or other vegetation shall be provided between the professional landscaping standards for spacing, location and design.
 - 4) Fences used in buffers must be made of rot-resistant material or protected deterioration with waterproofing material.

3.10.05. *Examples of Buffers.* The accompanying illustration provides examples of natural and structural buffers. Other solutions meeting requirements of this section are also acceptable.



Section 3.11. Maintenance of buffers.

Every buffer required by this article shall be maintained by the owner of the property where the buffer is located, so as to provide an opaque continuous visual screen to a height of six feet on a continuous, year-round basis.

Section 3.12. Buffer modifications.

3.12.01. *Automatic reduction in buffer width.* If a structural buffer is provided that creates an opaque screen to a height of no less than eight feet instead of six, the buffer may be reduced to a width of no less than 15 feet.

3.12.02. *Location of buffers*

- Buffers may be relocated on the site to best achieve the screening required.
- Buffers may be located on adjoining property upon written approval of property owner and approval of the mayor and council.

Section 3.13. Waiver for unnecessary buffers.

The mayor and council may waive a buffer requirement or reduce its extent to a temporarily appropriate level of screening if the comprehensive plan anticipates future development on the adjoining property in a land use category such that a buffer would not be required by this Code once the adjoining property is rezoned or developed.

DIVISION 4. TREE CONSERVATION

Section 3.14. Tree conservation; where required.

3.14.01. Application to new development or disturbed areas.

- a. The tree conservation requirements shall apply to the construction of any new residential or nonresidential subdivision, except as exempted in this section.
- b. The tree conservation requirements shall apply to the construction of any new multi-family or nonresidential use or development project.
- c. For existing multi-family or nonresidential development, these requirements shall only apply to new disturbed area.
- d. The tree conservation requirements shall apply to all new mixed-used developments and expansions of existing mixed use development into undisturbed areas.
- e. The tree conservation requirements shall apply to all new multi-family developments and expansions of existing multifamily developments into undisturbed areas.
- f. The tree conservation requirements shall apply to all new townhouse developments and expansion of existing townhouse developments into undisturbed areas.

3.14.02. Residential subdivisions. Residential subdivisions shall achieve the total tree density required under this article upon completion of infrastructure of this article prior to the approval of a final plat, or commit to such achievement through performance surety(cash only)for tree planting.

3.14.03 Nonresidential subdivisions. New commercial and industrial subdivisions are subject to a two-stage review process by the Development Official (for theinfrastructure and later for each individual lot). For this reason, these subdivisions may base density calculations on the net disturbed site area defined by the limits of clearance and construction. The phase 1 plan shall address the method of timing of ultimate compliance with this article.

3.14.04. Nonresidential out-lots. Out-lots and separate parcels of a phased development must collectively meet minimum requirements for site density; however, in no case may an individual out-lot have less than 10tree units per acre.

3.14.05. *Additions to existing projects.* For additions to existing projects, the density requirements may be met in either of the following two ways:

- a. Calculate the area of any new land disturbance and/or improvements and add replacement trees based on that area (existing trees elsewhere on the site may not be counted with this option); or,
- b. Base density requirements on the total site area and count any existing trees on the site, exclusive of zoning buffers and stream buffers.

3.14.06. *Phased projects and reduced net site areas.* Where development is going to occur in phases (by design or by implication), density calculations must be based on a site area defined by an established or estimated phase line.

Similarly, a reduced net site area may be achieved by using only the area of actual site disturbance (new projects only), provided that a limits of construction line is clearly shown on the plan (existing trees elsewhere on the site may not be counted with this option).

In both instances, the following criteria are applied regarding existing trees:

- a. Existing trees to be counted toward meeting the density requirements should be within the phase line or limits of construction
- b. If the trees save areas must be established outside these areas, they must be located where future development will not impact them.

The trees in areas outside the phase line or limits of construction may not be counted towards the density requirements of subsequent phases or new projects.

3.14.07 *Alternative calculations.* Calculations for alternative compliance to tree density requirements shall be made according to the guidelines set forth at section 3.03.06.

3.14.08. *Exemptions from tree conservation requirements.* The tree conservation requirements shall not apply to the following:

- a. Horticultural or agricultural operations, as follows.
 - 1) All plant or tree nurseries and botanical gardens shall be exempt in relation to those trees that are being grown for relocation and continued growth in the ordinary course of business, or for some public purpose.
 - 2) All orchards of trees in active commercial operation shall be exempt for bona fide agricultural purposes.

- 3) Land clearing and grubbing activities for clearly agricultural purposes. Clearing or grubbing conducted as part of the land development process may be authorized only in accordance with the issuance of a land disturbance permit under the requirements and provisions of this article. A development permit may not be issued on any property that has been cleared or grubbed as an exempt agricultural activity within the past two (2) years, unless approved by the mayor and council.
- 4) Timber harvesting (selective cutting or clearing cutting) for pulpwood or saw timber shall be exempt when conducted as a bona fide agricultural activity. Timber harvesting conducted as part of the land development process may be authorized only in accordance with the issuance of a land disturbance permit under the requirements and provisions of this article. A development permit may not be issued on any property that has had its timber harvested as an exempt agricultural activity within the past two (2) years.
- b. Removal disease or infestation. Removal of diseased or infested trees, upon the verification of the Development Official or other qualified forestry professional acceptable to the Development Official, is exempt.
- c. Roadway Construction. Land clearing for designated roadway projects of the Georgia Department of Transportation and the City of Temple is exempt.
- d. The removal of trees from detention pond and drainage easements is exempt.
- e. Companies and agencies. Public utility companies and government agencies conducting operations on public and utility rights-of-way and easements or on sites for electric power substations and similar facilities, which operations are for the purpose of assuring uninterrupted utility and governmental services and unobstructed passage on public streets, are exempt.

3.14.09 Summary of applicability and exemptions. Table 3-4 summarizes the circumstances under which tree conservation requirements apply to specific projects.

Table 3-3. Summary: Applicability and Exemptions (See Text for Further Details)		
Agricultural Operations	Land clearing for bona fide agricultural purposes, including timber harvesting, plant or tree nurseries, orchards, tree farms and botanical gardens.	Exempt 1
Diseased or infested trees	Removal upon verification of Development Official.	Exempt
Imminent hazards	Removal based upon danger to life or property upon verification of Development Official.	Exempt
Roadway construction	Land clearing for roadway projects.	Exempt
Detention ponds	Removal of trees from detention ponds and drainage easements.	Exempt
Public utilities	Removal conducted by public utilities or government agencies to assure uninterrupted services.	Exempt

Section 3.15. Trees to be provided or retained.

3.15.01. Number of tree units upon completion of development.

- a. *Minimum standard.* On each property for which a tree protection plan is required by this article, existing trees may be retained and new trees shall be planted such that the property shall attain or exceed a tree density standard as defined in the Development Code. The trees, both existing and new, where feasible shall be reasonably distributed throughout the site, with emphasis on tree groupings to achieve aesthetic results following professional landscaping standards. Trees may be retained or planted for credit within a public right-of-way if granted approval by the Development Official.
- b. *Tree density standard calculation.* The tree density standard shall be calculated by summing the following credits and dividing by the total acreage of the project included within the limits of the permit application.
 - 1) Credit for existing trees to be retained shall be calculated by multiplying the number of trees (by diameter) times the units assigned in table 3-1 for existing trees. Credit shall be given all trees retained on a property having a diameter at breast height (DBH) of three inches or more, except for those trees retained to create a land use buffer required under section 3.09.
 - 2) Credit for new trees proposed on the site shall be calculated by multiplying the number of trees (by diameter) times the units assigned in table 3-1 for new trees. Credit shall be given all new trees on a property, except for new trees of less than one inch in caliper and those trees provided to create a land use buffer required under section 3.09.
 - 3) Additional credits shall be granted under the following circumstances:
 - a) A total tree density credit not to exceed twice the units shown on table 3-1, may be granted by the Development Official for existing trees to be retained which have greater value as outstanding specimen trees or having historic value or being a rare or unique species.
 - b) Existing trees to be retained within a 100-year floodplain shall be granted bonus of 50 percent of the units assigned in table 3-1.

3.15.02. Retention of specimen trees. Existing specimen trees (as defined in this development code) shall be not be removed unless development would cause irreparable damage to the critical root zones.

Section 3.16. Protection of existing trees.

The following guidelines and standards shall apply to trees proposed to be retained for credit toward meeting the minimum required tree density standard on a property.

3.16.01. *Tree protection area.* The root system within the drip line is generally considered to be the critical root zone. To protect the critical root zone, a tree protection area shall be established around each tree to be retained.

- a. The tree protection area shall include no less than the total area beneath the tree canopy as defined by the drip line of the tree or group of trees collectively.
- b. Layout of the project site utility and grading plans shall avoid disturbance of the tree protection areas.
- c. Construction site activities such as parking, materials storage, concreted washout, burn-hole placement, etc., shall be arranged so as to prevent disturbances within the tree protection area.
- d. Once tree protection areas are established and approved, no changes shall be made without first obtaining approval from the development official of the change, subject to the standards set forth in this article.

3.16.02. *Protective barriers.*

- a. Tree protection devices are to be installed as shown on the plan or otherwise completely surrounding the tree protection area. The plan shall indicate whether the tree protection device is to be active or passive. Active protection is required where tree protection areas are located in proximity to construction activity. The locations of all tree protection devices will be verified by the Development Official prior to the issuance of the construction permit for clearing and/or grading. Active tree protection shall consist of chain-link, orange laminated plastic, wooden post and rail fencing or other equivalent restraining material.
- b. Signage. All tree protection areas shall be designated as such with “Tree Protection Area” signs. These signs are intended to inform subcontractors of the tree protection process. Such signs shall be a minimum of 16 square feet in sign face area and shall state with minimum three inch lettering “Attention Subcontractors. You must observe Tree Protection Area- No Construction or Equipment Encroachment. You are responsible for damages”, or similar wording. Signs requiring subcontractor cooperation and compliance with the tree protection standards shall be posted visibly at site entrances.
- c. Erosion and sedimentation control. All tree protection areas must be protected from soil erosion and sedimentation intrusion through the use of silt screens or

other acceptable measures placed up-slope from the tree protection area. All erosion and sedimentation control measures shall be installed in a manner that will not result in the accumulation of sediment in a tree protection area.

- d. All tree protection devices and erosion control barriers shall be installed prior to any clearing, grubbing, grading or any land disturbance activity. The Development Official must inspect the installation of tree protection and erosion and sedimentation control devices prior to the issuance of the development permit. Tree protection must remain in functioning condition throughout all phases of development, but it is to be removed prior to the issuance of a certificate of occupancy.

3.16.03. *Encroachment.* If encroachment into a tree protection area occurs that causes irreparable damage to the trees, the tree protection plan shall be revised to compensate for the loss. Under no circumstances shall the developer be relieved of responsibility for compliance with the provisions of this article, nor shall plan revision activities stop the department from instituting action for violation of this article.

3.16.04. *Damage prohibited to specimen trees.* No person shall:

- a. Cut, carve, or otherwise damage or remove any specimen tree on nonresidential property except in accordance with the provisions of this Developmental Code.
- b. Attach any wire, nails, advertising posters, or other contrivance harmful to any specimen tree on property other than the single-family residential property.
- c. Allow any gaseous, liquid, or solid substance that is harmful to trees (such as concrete washout, fuel, lubrications, herbicides, paint) to come in contact with specimen trees on property other than single-family residential property.
- d. Set a fire or permit any fire to burn when such fire or the heat thereof will injure any portion of any specimen tree on property other than a single-family residential property.

3.16.05. *Prohibited activities.*

- a. *Compaction prohibited.* All building materials, vehicles, construction equipment, dirt, debris, or other object likely to cause soil compaction or above ground damage shall be kept outside the tree protection area. Where a limited amount of encroachment is unavoidable, the tree protection area shall first be cut cleanly, then immediately mulched with a four-inch layer of processed bark or wood chips or in six-inch layer of straw.
- b. *Grade change prohibited.* There shall be no raising or lowering of the ground level within the tree protection area. Stripping of topsoil in the tree protection area shall not be permitted. Where necessary, the use of moderate fill is permitted only with prior installation of an aeration system. Deposition of sediment in the tree protection area shall be prevented by placement of sediment barrier, which shall be backed by two inch by four inch by four inch wire mesh in areas of steep slope.
- c. *Ditches prohibited.* No person shall excavate any ditch within the tree protection area. Where such encroachment is unavoidable, ditches or trenches shall be located as to minimize root damage. Any such excavation in a tree protection area shall require protective measures designed by a certified arborist and approved by the Development Official. If roots must be cut, they must be cut cleanly and immediately mulched.
- d. *Paving prohibited.* No person shall pave with concrete, asphalt, or other impervious material within the tree protection area.

3.16.06. *Purpose of tree protection devices.* Tree protection devices required by this article ameliorate the effects of activities detrimental to trees including, but not limited to:

- a. Soil compaction in the tree protection area resulting from heavy equipment, vehicular or excessive pedestrian traffic, or storage of equipment or materials;
- b. Root disturbance due to cuts, fills or trenching;
- c. Wounds to exposed roots, trunks or limbs by mechanical equipment;
- d. Other activities such as a chemical storage, cement truck cleaning, fire, or other activities that will damage the critical root zone.

3.16.07. *Other specifications.*

Clearing. Where clearing has been approved, trees shall be removed in a manner which does not adversely impact the trees to be preserved. Felling trees into tree protection

areas or distributing roots inside the protection areas is prohibited. Roots shall be cut cleanly before tree removal.

Section 3.17. New trees to be planted.

New trees proposed to be planted for credit toward meeting the minimum required tree density standard on a property shall comply with the following guidelines and standards.

3.17.01. Placement and quality.

- a. The spacing of new trees must be compatible with the spatial site limitations and with responsible consideration towards species size when mature.
- b. Species selected for planting must be ecologically compatible with the specifically intended growing site. Standards for transplanting shall be in compliance with those established by the International Society of Arboriculture, as included in the *Tree and Shrub Transplanting Manual*, latest edition or similar publication.
- c. Trees selected for planting must be free from injury, pests, disease, nutritional disorders or root defects, and must be of good vigor so as to assure a reasonable expectation of survivability.

Table 3-5: Approved Species List for Proposed New Trees

<i>Large Trees</i>	<i>Large Trees</i>	<i>Small to Medium Trees</i>
Silver Linden	Sycamore Red Oak	Trident Maple
Blackgum	Nuttall Oak	Virginia Pine
Chinese Pistache	White Oak	Redbud
Cryptomeria	Shumard oak	Sweetbay Magnolia
Southern Magnolia	Scarlet Oak	Claudia Wannamaker Magnolia
D.D. Blanchard Magnolia	Overcup Oak	Chaste Tree
Japanese Zelkova	Pin Oak	Chinese Evergreen Oak
Dawn Redwood	Willow Oak	Little Gem Magnolia
Bald Cypress	Water Oak	Saucer Magnolia
Florida Maple	Swamp Chestnut Oak	Crepe Myrtle
Red Maple	Lacebark Elm	Foster Holly
October Glory Maple	Athena Elm	American Holly
Red Sunset	Maple Hybrid Elm	Savannah Holly
Autumn Blaze Maple	Atlantic White Cedar	Emily Bruner Holly
Sugar Maple		Wax Myrtle
Autumn Flame Red Maple		Mary Nelle Holly
River Birch		Nelly Stevens Holly
American Beech Tulip Tree		Fringe tree
		American Yellowwood
		Dogwood
		Japanese Maple
		Flowering Cherry
		Deodar Cedar

3.17.02. *Deferred planting.* In the event that new trees proposed to be planted to achieve the tree density standard are not installed upon application for a certificate of occupancy or a final plat approval, then a cashbond in an amount equal to 110 percent of the value of the new trees and their installation shall be posted in accordance and provision of this development code.

3.17.03. *Warranty for new plant materials.* Upon final installation of new trees planted under the requirements of this article, and following acceptance by the Development Official, the owner shall warrant the new trees and provide for replacement of those which do not survive for a period of at least one year.

DIVISION 5. LANDSCAPING PLANS, INSTALLATION AND MAINTENANCE

Section 3.18. Site landscaping plans.

3.18.01. *Site landscaping plans; where required.*

- a. Landscaping, buffer and tree conservation plans are required upon application for a development permit or for a building permit for new construction of buildings in any development to which landscaping, screening, buffer or tree conservation requirements apply.
- b. In cases where approval of the landscaping, buffer and tree conservation plans would cause harmful delay to the start of construction, the Development Official may authorize footing and foundation permits for the project so that construction may proceed.
- c. Permits for construction beyond the footing and foundation shall not be issued until the landscaping, buffer and tree conservation plans have been submitted and approved.

3.18.02. *Site landscaping plans; criteria.* The technical specifications for landscaping, buffer tree conservation plans are found under the “plans and permits” article of this Code.

3.18.03. *Exemptions from site landscaping plan requirements.*

- a. The provisions of this section shall not apply to structures for which site landscaping plans have previously been submitted and approved.
- b. Site landscaping plans shall be required for only that phase of development for which the development permit or building permit is being requested.

Section 3.19. Plant materials; standards.

3.19.01. *Acceptable plant materials.* The following are the minimum plant sizes and conditions to be used in satisfying the requirements of this article. Acceptable plant materials for landscaping, buffers and tree replacement shall be as approved by a registered Landscape Architect.

- a. New plant materials
 - 1) Medium shrubs, 18-24 inch balled and bur lapped or 2-gallon container.
 - 2) Large shrubs, 24-30 inch balled and bur lapped or 5-gallon container.
 - 3) Ground cover, two and one-half inch peat pot.
 - 4) Trees as required to meet the requirements of the tree conservation plan.
- b. The “American Standard for Nursery Stock,” published by the American Association of Nurserymen, may be referred to for the determination of plant standards.
- c. Existing trees that are to be retained to satisfy the requirements of this Code shall meet the following standards:
 - 1) For evergreen trees, the height shall be at least six feet.
 - 2) Trees shall be free from mechanical injuries, insect infestations and disease.
 - 3) Trees shall be protected from injury to roots, trunks and branches during grading and construction. Protective fencing, tree wells, or retaining walls shall be utilized where necessary to insure tree vigor completion of construction.

3.19.02. *Approval of plant materials.* Approval of a proposal to use a specific landscaping or buffer material shall be subject to a determination by a registered Landscape Architect that the proposed material is the most appropriate for:

- a. The specific location, given surrounding land use and the type of screening used on nearby properties, and
- b. The specific topography, soil, existing vegetation, and other factors that may influence the effectiveness of a screen material.

Section 3.20. Installation and maintenance of plant materials.

3.20.01. *Installation of plant materials.* Plant materials, as required by the provisions of this article, shall be installed by the date specified on the approved site landscaping plan. The Development Official may allow one planting season in a 12-month period in which the installation of plant materials shall be completed. For the purposes of this development code, there shall be two planting seasons, which are from February 15 through May 31, and September 15 through November 30. Buffers, if required shall be installed before an occupancy permit is granted; except where the weather is not suitable for planting, and escrow provisions are made in accordance with guidelines of the city of Temple.

3.20.02. *Maintenance of required plant materials.*

- a. The owner, tenant and their agent, if any, shall be jointly responsible for the maintenance in good condition of the plant materials used to meet the minimum requirements of this article for landscaping, buffer or tree conservation. The plant materials shall be kept free from refuse and debris.
- b. Plants that are not in sound growing condition or are dead shall be removed and replaced with a plant of the same species, variety or cultivator, as acceptable to the Development Official.
- c. Other landscaping materials shall be maintained in proper repair and shall be kept clear of refuse and debris.

ARTICLE IV. VEHICLE PARKING AND LOADING

Section 4.01. Purpose of article IV.

This article sets out the requirements for the number of parking spaces that must be provided for development projects, the location of the spaces and the design of the parking lots. Restrictions on certain vehicles and requirements for loading areas are also included.

Section 4.02. Vehicle parking; when required.

- a. At the time of the establishment of any use, or erection of any building, or at the time any principal building is enlarged or increased in capacity by adding dwelling units, guest rooms, seats or floor area, there shall be provided permanent off- street parking spaces improved with an asphalt or concrete surface in accordance with the requirements of this article.
- b. Such parking spaces may be provided both in an off-street parking lot and as parallel parking along streets that are internal to and part of a development project.

Section 4.03. Number of parking spaces to be provided.

- a. The number of parking spaces to be provided for a particular use or development may be established through administrative approval of an alternate parking plan. Use of an alternate parking plan is encouraged in order to tailor the parking to the particular needs of the use or development and to allow introduction of operational solutions such as ride-sharing programs or remote employee parking lots.
- b. At the owner's option, parking spaces may be provided in accordance with the guidelines contained in this article. The guidelines establish the minimum number of spaces to be provided. An increase or decrease in the number of spaces can only be allowed through approval of an alternate parking plan.
- c. Downtown area exempt. Off-street parking is not required for any nonresidential use located in the CBD zoning district. At the owner's option, parking may be provided up to but not exceeding the number of spaces allowed by the guidelines for vehicle parking, below. Spaces exceeding the maximum number of spaces allowed requires approval of an alternate parking plan.

Section 4.04. Alternate parking plan

4.04.01 Alternate parking plan; contents. A request for approval of an alternate parking plan is to be submitted to the development official, and must be supported by the following information.

- a. A parking demand study or other data that establishes the number of spaces required for the specific use. Such a study or data may reflect parking for the same use existing at a similar location or for similar uses at other locations. References to published studies or to the guideline standards of this article are acceptable.
- b. If shared parking is proposed for a mixed use development, the sum of peak parking demands by use category shall be accommodated for day and night hours on weekdays and weekends. The guidelines for shared parking contained in this article may be used in lieu of a separate study.
- c. If a remote or off-site parking lot is proposed to meet any portion of the parking required, the site and its current zoning classification must be identified, along with the method of transporting parking patrons to the use.
- d. If more parking spaces are proposed than would be allowed under the guidelines for vehicle parking of this article, a landscaping plan shall be submitted that illustrates compliance with the parking lot landscaping requirements of the “landscaping, buffers and tree protection” article of this Code.

4.04.02. Reserved

4.04.03. Alternate parking plan; if approved

- a. Following approval by the Development Official, the requirements of the approved alternate parking plan shall be recorded by the owner in the office of the clerk to superior court prior to issuance of a certificate of occupancy for the development, and shall be included in any sale, lease, or other transfer of right of occupancy affecting any part of the development.
- b. All occupants of the property or development, whether an owner, lessee, tenant, subtenant, purchaser, or other occupant, shall comply with the approved alternate parking plan.

Section 4.05. Guidelines for vehicle parking

4.05.01. *Guidelines; vehicle parking by land use.* In lieu of establishment under alternate parking plan, the number of parking spaces to be provided to each type of land use shall be determined by the following, rounded to the nearest whole space. Developments containing two or more of the uses listed on the table shall provide the number of spaces required for each use (except as may be reduced under Shared Parking below).

Use	Maximum Number of Outdoor Parking Spaces	Allowed for Each:
a. Residential & Lodging		
1. Single-Family Detached Residence	4.0	Dwelling Unit (plus minimum 2-car garage)
2. Single-Family Attached: Duplex	4.0	Dwelling Unit
3. Single-Family Attached: Townhome	3.0	Dwelling Unit
4. Multi-Family Residences	2.0	Dwelling Unit
5. Fraternity & Sorority Houses	1.0	3 residents or beds
6. Rooming/ Boarding House	1.0	2 residents or beds
7. Nursing Care Facility	1.5	2 residents or beds
8. Retirement Community	1.0	Dwelling Unit
9. Personal Care Home	1.0	2 residents or beds
10. Bed and Breakfast Inn	1.0	Guest room, plus 2 spaces
11. Convention Hotel	1.5	Guest room
12. Nonconvention Hotel	1.2	Guest room
13. Motel w/ Restaurant/ Lounge	1.5	Guest room
14. Motel w/out Rest/ Lounge	1.2	Guest room
b. Commercial		
1. All Retail Sales or Commercial Services Establishments not listed below	5.0	1,000sf ¹ of gfa ²
2. Accessory Retail	5.0	1,000sf of gfa
3. Adult Entertainment	10.0	1,000sf of gfa
4. Amphitheaters	1.0	4 seats
5. Amusement Centers and game parlors	10.0	1,000sf of gfa
6. Animal Hospital	4.0	1,000sf of gfa
7. Auto paint and Body Shop	3.0	Service Bay, plus 1,000 sf of retail space
	5.0	
8. Auto Salvage and Wrecking	2.0	Acre
9. Auto Storage and Wrecker	3.0	1,000 sf of gfa
10. Auto Upholstery Shop	3.0	Service Bay, plus 1,000 sf of retail space
	5.0	
11. Auto, Truck, Manuf. Home & Utility Structure Sales	2.0	1,000 sf of sales area, plus 2,500 sf of outdoor display, plus Service Bay
	1.0	
	3.0	
12. Automotive Repairs	3.0	Service Bay, plus 1,000 sf of retail space
	5.0	
13. Banks	4.0	1,000 sf of gfa, plus walk up ATM
	3.0	
14. Billiard and Pool Hall	2.0	Pool table
15. Bio-Medical Waste	4.0	1,000 sf of gfa
16. Bowling Alley	4.5	Lane
17. Bus Station	3.3	1,000 sf of gfa
18. Car Wash	1.0	Car wash bay, plus 1,000 gross sf of retail place
	5.0	
19. Community Fair	1.0	2,000 of activity area
20. Day Car Facilities	2.5	1,000 sf of gfa
21. Discount Tire	4.0	1,000 sf of gfa
22. Driving Range	1.5	Tee, plus 1,000 sf of gfa (pro shop/club house)
	5.0	
23. Eating & Drinking Establishments	As Follows:	
(a) Quality Restaurant	16.0	1,000 sf of gfa
(b) Family Restaurant	9.5	1,000 sf of gfa
(c) Fast Food w/ drive in window	14.0	1,000 sf of gfa
(d) Fast Food w/out Window	14.0	1,000 sf of gfa
24. Emissions Inspections	1.0	Service bay
25. Exterminators	4.0	1,000 sf of gfa
26. Farm & Garden Supply incl. Farmer's Market	2.0	1,000 gross sf of gfa, plus acre of outside sales area
	2.0	
27. Flea Market	1.0	2,000 of sales area
28. Fuel & Ice Dealer	2.0	1,000 sf of gfa
29. Full Svc Gas Station	3.0	Service Bay, plus 1,000 sf of retail space
	5.0	
30. Funeral Home	35	Viewing Room
31. Furniture Repair	4.0	1,000 sf of gfa

32. Furniture/ Carpet Store	1.5	1,000 sf of gfa
33. Golf Course	5.0 5.0	Hope, plus 1, 000 sf of gfa (pro shop/ club house)
34. Greenhouse, Nursery	2.0 2.0	1,000 gross sf of gfa, plus acre of outside sales area
35. Hardware/ Paint/ Home Imp	4.0	1,000 sf of gfa
36. Heavy Vehicle Repair	3.0 5.0	Service Bay, plus 1,000 sf of retail space
37. Kennels	4.0	1,000 sf of gfa excluding animal pens
38. Medical/ Dental Labs	3.0	1,000 sf of gfa
39. Movie Theatre	1.0	4 Seats
40. Newspaper Publishing	4.0	1,000 sf of gfa
41. Nightclub	9.5	1,000 sf of gfa
42. Non-profit Riding Stable	1.5	Stable stall
43. Offices- General	4.0	1,000 sf of gfa
44. Offices – Medical & Dental	5.0	1,000 sf of gfa
45. Produce Stand	3.0	Stand
46. Radio/ TV Station	3.0	1,000 sf of gfa
47. Research & Development	3.0	1,000 sf of gfa
48. Self Storage	.5	1,000 sf of gfa
49. Service Stations, Gas Stations, Auto Repair Shop or Garage	3.0 5.0	Service Bay, plus 1,000 sf of retail space
50. Shopping Center	As follows:	
(a) Less than 100,000 square feet of gla	4.0 3.0 10.0	1,000 sf of total gla, plus 100 seats in a movie theatre, plus 1,000 sf of food service area
(b) 100,000 to 199,999 of gla	4.0 3.0 6.0	1,000 sf of total gla, plus 100 seats above the initial 450 seats in a movie theatre, plus 1,000 sf of food service area
(c) 200,000 to 399,999 of gla	4.0 3.0	1,000 sf of total gla, plus 100 seats above the initial 750 seats in a movie theatre
(d) 400,000 to 599,999 of gla	4.5 3.0	1,000 sf of total gla, plus 100 seats above the initial 750 seats in a theater
(e) 600,000 or more of gla	5.0 3.0	1,000 sf of total gla, plus 100 seats above the initial 750 seats in a movie theatre
51. Sports Club/ Health Spa	4.5	1,000 sf of gfa
52. Supermarket	4.0	1,000 sf of gfa
53. Vending Machine Sales and Service	2.0	1,000 sf of gfa
54. Wholesale Sales- with customers	3.0	1,000 sf of gfa
55. Wholesale Trade/ Dist.-without customers	2.0	1,000 sf gfa
c. Industrial- Including Storage, Wholesale and Manufacturing		
1. Asphalt Plant	1.0	Acre of developed site
2. Brick or lumber yard or similar area	2.0 1.0	1,000 sf of sales area, plus 2,500 sf of outdoor display
3. Chemical Plant	2.0	1,000 sf of gfa
4. Composting Plant	2.0	1,000 sf of gfa
5. Concrete Plant	1.0	Acre of developed site
6. Contractor with Equipment or storage	3.0 1.0	1,000 sf gfa, plus 2,500 sf of outdoor display
7. Contractor's office (no equipment or storage)	3.0	1,000 sf gfa
8. Dairy	2.0	1,000 sf of gfa
9. Dry Cleaning Plant	2.0	1,000 sf of gfa
10. Freight Terminal	1.0	1,000 sf of gfa
11. Machine Shop	2.5	1,000 sf of gfa
12. Manufacturing operations- multi-shift	3.0	1,000 sf of gfa
13. Manufacturing operations- single-shift	2.0	1,000 sf of gfa
14. Open storage of sand, gravel & petroleum	1.0	Acre of developed area
15. Recycling Center	1.0	1,000 sf of developed site area
16. Tire Retreading and Recapping	2.5	1,000 sf of gfa
17. Trans. Equip. Storage/ Maint.	1.0	1,000 sf of gfa

18. Truck Terminal	1.0	1,000 sf of gfa
19. Utility Facility	.5	1,000 sf of gfa
20. Warehouse & enclosed storage	.5	1,000 sf of gfa
21. Warehouse with commercial sales	5.0	1,000 sf sales or office, plus
	.5	1,000 sf storage area
d. Institutional and Other		
1. Auditorium, churches, theatres, stadiums, and other places of assembly	1.0 1.0 1.0	3 Seats, or 12 feet of pew, or 30 sf in largest assembly room
2. Cemetery, crematory or mausoleum	3.0 1.0 1.0	1,000 of office space, plus per 3 seats , plus acre of site area
3. Civic Clubs, Museums, Fraternal Lodges, etc.	4.0	1,000 sf of gfa
4. Community Center	3.0	1,000 sf of gfa
5. Cultural Facilities	2.5	1,000 sf of gfa
6. Hospitals	1.8	Bed
7. Private Park	1.0	3,000 sf of site area
8. Private Schools	As follows:	
(a) Pre-school or Kindergarten	2.5	1,000 sf of gfa
(b) Elementary & Middle Schools	2.0	Classroom
(c) Senior High School	6.0	Classroom
(d) General and Special Ed.	6.0	Classroom
(e) Technical College	20.0	Classroom
(f) Colleges	10.0	Classroom
9. Recreation Grounds (sports center)	6.0 1.0	1,000 sf of active sports area, plus acre of total site
10. Shelter (homeless)	1.0	3 residents or beds

The minimum number of outdoor parking spaces allowed on a property for residents, employees, customers and visitors shall not be less than 80% of the maximum number of the parking spaces allowed, as determined for the type of land use on table 4.1.

Developments containing two or more of the uses listed on Table 4.1 may provide no less than 80% of the number of spaces allowed for each use.

4.05.02. *Guidelines; shared parking.* The parking spaces provided for separate uses may be combined in one lot but the required spaces assigned to each use may not be assigned to another use, except as follows:

- a. *Shared parking between day and night users.* One-half of the parking spaces assigned to a church, theater or assembly hall whose peak attendance will be at night or on Sundays may be assigned to a use that will be closed at night or on Sundays.
- b. *Mixed use developments.* Parking spaces may be shared by more than one use if the development official finds that the total number of spaces will be adequate at the peak hours of the uses they serve. The following ratios may be used in determining the time of day and the day of the week at which the maximum number of spaces will be needed by the uses serviced by the shared parking facility.

Table 4-2. Percentage of Required Parking Spaces by Time Period.

	<i>Weekdays</i>		<i>Weekends</i>		<i>Nighttime</i>
	<i>6 a.m. to 5 p.m.</i>	<i>5 p.m. to 1 a.m.</i>	<i>6 a.m. to 5 p.m.</i>	<i>5 p.m. to 1 a.m.</i>	<i>1 a.m. to 6 a.m.</i>
Office	100%	10%	10%	5%	5%
Retail	60%	90%	100%	70%	5%
Hotel	75%	100%	75%	100%	75%
Restaurant	50%	100%	100%	100%	10%
Entertainment/Recreation	40%	100%	80%	100%	10%
Church	10%	25%	100%	100%	10%

- c. *Availability of shared spaces.* Parking spaces that are proposed to be shared among two or more uses must be clearly available to each use and not appear in any way to be serving a particular use, either through signage dedicating the spaces or through design techniques that would tend to orient use of the spaces to a particular business or building.
- d. *Recordation of shared parking arrangement.* Shared parking arrangements must be committed to writing in the form of a covenant or deed restriction running with the land for not less than 20 years, and approved by the owners of each of the affected properties. The approved instrument shall be recorded and a copy of the recorded document must be supplied to the development official.

Section 4.06. Handicap accessible parking spaces.

4.06.01. *Handicap accessible spaces; required.* Handicap accessible spaces shall be provided in each parking lot in the ratio and amounts as required by the federal Americans with Disabilities Act.

4.06.02. Method of Communication. Handicap accessible parking spaces shall be counted as part of the total number of parking spaces provided under this article.

4.06.03. Design criteria for handicap accessible spaces.

- a. Handicap accessible parking spaces shall have an adjacent aisle five feet wide, and one in every eight handicapped spaces shall be adjacent to an aisle eight feet wide and the space shall be signed “van accessible”. Handicapped parking space aisles shall be clearly demarcated by lines painted on or otherwise applied to the parking lot surfaces.
- b. Handicap accessible parking spaces shall be located on a surface with a slope not exceeding one vertical in 50 horizontal (1:50).

4.06.04. Compliance with federal requirements. In addition to the requirements of this section, all handicapped parking shall comply with the requirements of the federal Americans with Disabilities Act, which provisions shall control in the event of conflict with this Development Code.

Section 4.07. Dedication to parking use.

Parking spaces provided to meet the minimum requirements of this article, along with the aisles and driveways necessary to provide access to those spaces, shall not be used for any other purposes than the temporary parking of vehicles except as allowed by section 3.48 of Appendix A- Zoning. Specifically, no such parking area may be used for the sale, repair, dismantling or servicing of any vehicles or for the sale, display, or storage of equipment, goods, materials, or supplies.

Section 4.08. Proximity of off-street parking spaces to use.

4.08.01. *Location of parking spaces.* Unless otherwise provided under an approved alternate parking plan, all parking spaces required to meet the guideline standards of this article shall be located in proximity to the use the spaces serve, as follows:

Table 4-4. Location of Parking Spaces.

<i>Use</i>	<i>Parking Location</i>
Single-Family or Two-Family Residence	On the same lot of the residence the parking spaces are required to serve.
Townhouse Development	Each required parking space must be within 100 feet of an entrance to the dwelling unit that it serves, as measured along the most direct pedestrian route.
Other Multi-Family Developments	Each required parking space must be within 300 feet of an entrance to the building that it serves, as measured along the most direct pedestrian route.
Church, Hotel or Motel, Hospital, Nursing Home, Membership Dwellings and similar uses	Each required parking space must be within 300 feet of an entrance to the building that it serves, as measured along the most direct pedestrian route.
Retail Sales or Retail Services Establishment, other than a Shopping Center	Each required parking space must be within 400 feet of an entrance to the building or use that it serves, as measured along the most direct pedestrian route.
Shopping Center, Office or Industrial Use, or any other use not specified above.	Each required parking space must be within 500 feet of an entrance to the building or use that it serves, as measured along the most direct pedestrian route.

4.08.02. *Off-site parking.* If required parking spaces are not located on the same lot as the particular use, building or establishment they are intended to serve, the following shall apply:

- a. The parking spaces must be set aside solely for the particular use, the building or establishment, or be established as “shared parking” under the provisions for such under this article.
- b. The parking spaces must be located on a property that has the same zoning classification as the property that the spaces serve, or a less restrictive zoning classification.
- c. No required parking spaces may be located across any State or US highway from the use that are intended to serve.
- d. The parking spaces must meet the “location of parking spaces” requirements of this section, or adequate vehicular transportation must be provided that is acceptable to the Development Official.

Section 4.09. Design requirements for parking lots.

The provisions of this section apply to all off-street parking spaces and parking areas, whether the parking meets or exceeds the number of spaces required to serve a particular use or the parking lot is operated as a principal use on a property and not dedicated to serving a particular use.

4.09.01. *Orientation to street.* Except for parcels of land devoted to one-family, two-family, or townhouse residential use, all areas devoted to off-street parking shall be so designed and be of such size that no vehicle is required to back into a public street to obtain access.

4.09.02. *Off-street parking spaces.*

- a. No parking spaces shall be accessible from an access driveway within the first 20 feet of the driveway back from the street right-of-way line.
- b. Every parking space shall provide a useable rectangular area at least nine feet wide by a minimum of 18 feet long (when a 2 foot overhang is available, when overhang is adjacent to sidewalk the sidewalk must be 8 feet wide); exceptionally, where the requirement for parking exceeds 50 spaces on a single lot, not more than 20 percent of the required parking spaces may be designated for compact vehicles only, and each shall be a minimum size of eight feet by 16 feet and shall be clearly marked as “compact car only” by a sign adjacent to each space so as to be readable by approaching drivers.
- c. Access aisles shall not encroach into the rectangular parking space area. Every parking space shall be clearly demarcated by lines painted on or otherwise applied to the parking lot surfaces.

4.09.03. *Access and circulation.*

- a. Access aisles in parking lots must be at least 24 feet wide for two-way traffic, and 14 feet wide for one-way traffic. Minimum width of driveways, excluding parking, shall be 20 feet. Minimum turning radius shall be 32 feet. One-way traffic aisles must be clearly marked with directional arrows on the pavement at each intersection with another aisle.
- b. Ingress and egress to parking areas shall be by means of paved driveways from the adjoining street. Driveway width, for the purpose of this section, shall include only the pavement and not the curbs and gutters.
- c. The distance from a parking area access drive to the intersection of two streets, and the distance between driveways at the street, shall be based on the driveway requirements in the “project design standards” article of this Code.

4.09.04. *Setback requirements.*

- a. Off-street parking for single-family and two-family residential uses shall have no setback requirements.
- b. Off-street parking for all other uses, including multi-family residential, commercial, industrial, and institutional uses shall be set back from the front property line by at least ten feet, and shall be back from side and rear property lines as required for landscaping and/or screening by the “landscaping, buffers and tree conservation” article of this Code.
- c. The area between the front property line and the parking area shall be used for landscaping and/or screening as required in the “landscaping, buffers and tree conservation” article of this Code.

4.09.05. *Lighting of parking areas.* Any lights used to illuminate the parking area shall be arranged, located or screened to direct light away from any adjoining residential use.

4.09.06. *Improvement of parking areas.*

- a. *Surface and curbing.* All off-street parking areas and all access drives shall be improved with a permanent dust-free paved surface.
- b. *Maintenance.* Off-street parking areas shall be maintained in proper repair with a dust-free surface.
- c. *Drainage facilities.* For any use that will require a parking area to be newly constructed, added to, or altered in such a way as to affect drainage either on or off the site, storm water drainage plans, including grading plans, shall be submitted to and approved by the city of Temple, prior to the issuance of a building permit or occupational license.
- d. *Permit required.* Construction of new parking lot or expansion of an existing parking lot requires issuances of a development permit from the city of Temple. A permit is not required for resurfacing an existing parking area. A driveway permit is required for customary driveways for single-family and two-family residential dwellings. Permit requirements are found in the “procedures and permits” article of this code.
- e. *Time limit.* All required off-street parking areas shall be ready for use, including the above surfacing requirement, before the occupancy of the use (in the case of a new building or addition) or within 45 days after the issuance of an occupational license (in the case of a change of occupancy in an existing building.) An extension of time may be granted by the development official due to adverse weather conditions.

Section 4.10. Restrictions on vehicle parking.

4.10.01. Restrictions in residential zoning districts.

- a. In districts zoned for residential use, no person shall park or store any vehicle or trailer over 10,000 pounds gross weight or 24 feet in length, within the roadway except for the purpose of loading or unloading such vehicle or trailer. The loading or unloading of such vehicle shall be done within a reasonable time, but not to exceed 48 hours in any 15-day period.
- b. No truck body, trailer, or truck tractor, or part thereof may be parked or stored within the districts herein described unless specifically authorized by this ordinance or when a permit is issued by the building official of Temple. If such a permit is issued by the building official, it shall be for one year and specific to the vehicle and location specified in the permit. Application shall be made to the building official by the owner of the property where the vehicle is to be parked or stored. The application shall be accompanied by a nonrefundable application fee as set from time to time by the city council. Factors to be considered by the building official in issuing such a permit may include, but not be limited to the following: adequate screening from roadways, and adjacent property, availability of rear yard parking, hours of vehicle parking and operation, size and type of vehicle.
- c. Recreational vehicles, motor homes, campers, boat trailers, and similar vehicles used solely for commercial personal recreation use shall not come within this prohibition.

4.10.02. Inoperable vehicles. Inoperable vehicles must be removed, garaged or stored in accordance with applicable law. Abandoned vehicles shall be treated as set forth in Chapter 11 of Title 40 of the Official Code of Georgia Annotated.

4.10.03. Construction equipment and construction vehicles. In Districts other than the Industrial zoning district, construction equipment and construction vehicles may not be stored or repaired on the premises (other than in enclosed garages), except as follows:

- a. When being utilized for construction activities on the premises pursuant to a valid permit issued by the city for construction work necessitating use of such equipment, or when used for permitted work on the public right-of-way; or
- b. When the equipment is used as an accessory use customarily associated with an allowable primary business use, for example, forklifts used by some businesses to move merchandise; or
- c. When an intrinsic part of an allowable primary use, such as an equipment rental business.

ARTICLE V. Reserved.

ARTICLE VI. SOIL CONSERVATION AND TIMBER HARVESTING*

DIVISION 1. RESERVED

DIVISION 2. TIMBER HARVESTING OR CUTTING

Section 6.21. Notice of timber harvesting.

All persons or firms harvesting standing timber, whether for delivery as pulpwood, logs, poles or wood chips for delivery or any wood yard or processing plant, or for any “agriculture” purpose as defined by Official Code of Georgia Annotated subsection 1-3-3(4.1), shall provide notice to the development official prior to cutting any such timber.

Section 6.22. Requirements of notice.

Notice shall be provided for each separate tract to be harvested and shall include the following:

- 1) A map of the area which identifies the location of the tract to be harvested and, as to those trucks which will be traveling to and from such tract for purposes of picking up and hauling loads of cut forest products, the main point of ingress to such tracts from a public road, and if different, the main point of egress from such tract to a public road;
- 2) A statement as to whether the timber will be removed pursuant to a lump sum sale, per unit sale, or owner harvest for purpose of ad valorem taxation under Official Code of Georgia Annotated section 48-5-7.5;
- 3) The name, address, and daytime telephone number, and nighttime or emergency telephone number of the person or firm harvesting such timber.
- 4) The name, business address, business telephone number, and nighttime or emergency telephone number of the person or firm harvesting timber.

Section 6.23. Submissions of notice.

Notice may be submitted in person, by transmission of an electronic record or by mail.

Section 6.24. Bond or letter of credit.

Prior to cutting any such timber, the owner of such property or such persons or firms harvesting standing timber shall deliver to the development official a bond or cash deposit in the amount of \$5,000.00 protecting the city against any damage caused by such person or firm. If a bond is given for this purpose, it shall be a valid surety bond, executed by a surety corporation authorized to transact business in this state. If a letter of credit is given for this purpose, it shall be a valid irrevocable letter of credit issued by a bank or savings and loan association, as defined in Official Code of Georgia Annotated section 7-1-4. For purpose of this division, any such surety bond or letter of credit shall be valid only for the calendar year in which delivered. The notice required by this division shall not be or remain effective for such harvesting operations during any time period while the required bond or letter of credit is not valid and on file with the city.

Section 6.25. Effective period for notice.

Notice shall be effective for such harvesting operation on such tract within the city upon receipt of the same by the development official and upon compliance with the requirements of section 6.24 and until such time as the person or firm giving such notice has completed the harvesting operation for such tract; provided, however that any subsequent change in the facts required to be provided for purposes of such notice shall be reported to the development official within three business days after such change.

Section 6.26. Penalties

Violation of the notice requirements of any ordinance or resolution adopted pursuant to this Code shall be punishable by a fine not exceeding \$500.00.

Section 6.27. Reserved

Section 6.28. Driveway permit not required.

No driveway permit shall be required solely for purposes of timber harvesting.

ARTICLE VII. LAND DEVELOPMENT ACTIVITIES

Section 7.01. Purpose of article VII.

This article contains the requirements that apply to carrying out the land development process, including site grading and the installation of streets, drainage facilities and public utilities; and building construction.

Section 7.02. Overview—project construction.

7.02.01. *Development activity.*

- a. *Pre construction activity.* Following the approval of plans prior to issuance of any permit authorizing clearing and grading of a site, areas required to be undisturbed, such as natural buffers or stream greenways, must be designated by survey stakes, flags, ribbon, or other appropriate markings and shall be inspected and approved by the Development Official prior to the commencement of any clearing or grading activities.
- b. *Grading*
 - 1) Grading shall be done in accordance with the lines and grades drawn on the approved grading plan.
 - 2) Required erosion and sedimentation control measures and storm water drainage facilities are to be installed in accordance with the approval plans as development progresses.

7.02.02. *Development phase inspections.* Requests for inspections shall be made by the owner or contractor to the Development Official at least 72 hours prior to when the inspection is needed. **(Inspection Option)** Inspections can be provided by the Developer but all inspections must be certified by a professional engineer. The responsible professional engineer performing the inspection shall provide a written inspection report along with photos that document his or her findings and acceptance. All inspection reports shall be sealed and signed by a professional engineer. The City may require that Developer utilizes a third party professional engineer as the inspector. Inspections shall be made and passed prior to continuation of further activity or proceeding into new phases. Inspections are required of each of the following phases, as applicable to the actual work to be performed under the development permit:

- a. Prior to clearing or clearing and grubbing of the property or any portion included under the development permit, inspection of erosion and sedimentation control measures and protective devices for undisturbed areas. Inspection of erosion and sedimentation control measures will be conducted on a continuing basis.

- b. Upon completion of street grading, inspection and approval, inspection shall be required prior to trenching or continuation with sub grade preparation.
- c. Upon installation of storm drainage pipe, detention, or other storm water facilities.
- d. Street curbing and gutter (if provided). Inspection shall be requested after the forms or stringline has been set. Street width and vertical and horizontal alignment may be spot checked.
- e. Sub-grade of streets. After compaction and receipt of test reports provided by contractor and/or owner to City for review. The sub-grade shall be roll tested with an 18-ton tandem dump truck and shall pass to the satisfaction of the developer provided professional engineer (see inspection options above). See testing requirements as defined in Section 7.05 Installation of Streets and more specifically discussed in Table 7-2.
- f. Street base. After receipt of test reports by the Development Official, the base may be string-lined for depth and crown. The street base shall be roll-tested with an 18-ton tandem dump truck and shall pass to the satisfaction of the developer provided professional engineer (see inspection options above). See testing requirements as defined in Section 7.05 Installation of Streets and more specifically discussed in Table 7-2.
- g. Paving. A Professional Engineer provided by the Developer or Development Official shall be on site during the paving process to check consistency, depth, and workmanship, as applicable. For asphalt paving, the temperature of the material will be monitored and the street may be cored after completion to check thickness and density. Satisfactory test results of the cores shall be delivered to the Development Official prior to approval of a final subdivision plat or certificate of occupancy. See testing requirements as defined in Section 7.05 Installation of Streets and more specifically discussed in Table 7-2.

7.02.03. (Reserved) For record survey requirements see section 8.

7.02.04. *Final development inspection.*

- a. Following submission and review of the record surveys, the Development Official shall conduct a final development inspection along with the developer provided professional engineer that provided inspections and sign-off for the project.
- b. The owner shall be responsible for correcting any deficiencies identified in the final development inspection prior to approval of a final subdivision plat.

7.02.05. *Performance and maintenance bonds.*

- a. Prior to approval of a final subdivision plat or issuance of a certificate of occupancy, performance and maintenance bonds are required for all improvements shown on the record surveys. The owner remains responsible for maintenance of all such public improvements for two years from the date of issuance of the certificate of occupancy or final subdivision plat approval, as applicable.
- b. The amount of the bonds are based on the actual cost of construction of the public improvements shown on the record surveys, as more fully described in other sections of this development code. Copies of contractor agreements or actual invoices paid, or as otherwise determined by the Development Official, shall evidence the cost of construction.
- c. Where the performance bond or maintenance bond for any platted subdivision has expired without replacement prior to completion of all construction or development, the development official may withhold issuance of any permits or certifications of occupancy until such time as new bonds are posted, or until the mayor and council enter into a development agreement waiving the posting of such bond or bonds.

Section 7.03. Site clearing and grading.

7.03.01. Development permit required.

- a. Clearing and grading shall not proceed until issuance of an approved development permit by the Development Official. See the “plans and permits” article of this development code for details.
- b. Grading shall be done in accordance with the lines and grades drawn on the approved grading plan.
- c. Reserved

7.03.02. Erosion and sedimentation control measures. Required erosion and sedimentation control measures must be installed in accordance with the approved soil erosion and sedimentation control plan prior to any major development activity and as development progresses.

7.03.03. Demarcation of areas to remain undisturbed. Any area that is required to remain undisturbed, such as a natural buffer or tree protection area (as provided under the “landscaping, buffers and tree conservation” article of this development code) or greenway (see “greenways” under the “land development activities” article of this development code) shall be identified with protective fencing, staking or ribbon surrounding such area.

7.03.04. *Storm water drainage facilities.* Required storm water drainage facilities are to be installed in accordance with the approved storm water management plan as development progresses.

7.03.05. *Earthen embankments.* Earthen embankments shall be placed in uniform layers not to exceed a compacted thickness of six inches per layer and shall be compacted to a density of 95 percent of the maximum laboratory dry weight per cubic foot as determined by AASHTO Method T-99 in all areas where structures, parking lots and drives, streets, and utilities are to be placed. All other embankments are to be compacted to at least 90 percent. Flood proofing shall be accomplished prior to placement of embankments to detect soft spots.

7.03.06. *Reserved*

Section 7.04. Reserved

7.04.01. *Reserved*

7.04.02. *Reserved*

7.04.03. *Reserved*

Section 7.05. Installation of streets and utilities.

7.05.01. *Grading.*

- a. All streets shall be graded to their full width by the developer so that pavement extensions or sidewalks, where required or if installed in the future, can be constructed on the same level plane.
- b. Preparation of roadway: Before grading is started the entire area to be paved shall be first cleared of all stumps, roots, brush and other objectionable materials. In all areas to be graded or filled, the developer shall stockpile the topsoil later to be spread in all disturbed areas not paved.
- c. Grading shall be done in accordance with the Site Clearing and Grading Section of this article.
- d. If any sections of the sub grade are composed of unsuitable material, such material shall be removed to the depth directed by the Development Official, but no less than 3' into suitable ground and replaced with suitable, thoroughly compacted material.
- e. When the street is to be used for construction traffic before the paving work is completed, a layer of No. 5 stone can be laid as a traffic surface if the developer so desires.

- 1) This material shall not be used as part of the base material.
 - 2) It may be worked into the sub grade; or it shall be removed before the base course is set up for paving.
 - 3) Provision shall be made to drain low points in road construction when the final paving surface is delayed.
- f. Abutting property shall be suitably sloped to the right-of-way line.

7.05.02. *Installation of utilities.*

- a. After grading is completed and approved, the curb lines shall be staked by the developer's Registered Land Surveyor. Before any base is applied, all of the underground utilities— water mains, sewer mains, gas mains, or any other underground utilities, and all service connections related thereto—shall be installed completed and provided throughout the length of the street and across the flat section. Service connections for sanitary sewer (if required) and water shall be extended to the right-of-way lines.
- b. No private improvements, such as private lawn sprinkler systems, yard lighting, and the like, shall be installed within a public right-of-way except by authorization of the Development Official. Such authorization, if issued, shall require the owner to assume all repair costs of the owner's facilities should they become damaged.

7.05.03. *Street installation.*

- a. Preparation of sub grade. Prior to placement of the street base, the sub grade shall be compacted to 95 percent density.
- b. *Street base, curbing and paving.* Street base, curbing and paving shall be installed by the developer in accordance with the requirements and standards of this development code.

7.05.04. *Testing requirements.* It is the responsibility of the developer to insure that all required tests are made and reported to the Development Official. The cost of all testing and quality control shall be performed at the expense of the developer by qualified testing laboratories.

Table 7-2. Testing Requirements.

<i>Type of Test to be Performed</i>	<i>Minimum Number of Tests</i>	<i>Testing Standards</i>
Sub-grade Compaction	Each 500 linear feet of roadway	95% Max Density SPM-1557 Field Tests ASTM D- 1556 F-2922 and D-2167
Base Compaction	Each 500 linear feet of roadway	100% Max Density SPM-1557 Field Tests ASTM D-1556 F-2922 and D-2167
Asphalt Density	Each 1000 linear feet of roadway	92% Laboratory Density
Asphalt Thickness	Each 500 linear feet of roadway	Deficient in thickness not more than ¼"

7.05.05. *Protection of shoulders.*

- a. Immediately after grading and filling and re-spreading of topsoil, all areas of disturbed soil shall be fertilized, limed, seeded (or in steep areas sodded or otherwise appropriately treated) and have straw applied with suitable vegetative cover to retard erosion.
- b. When all construction is completed, all slopes and shoulders shall be cleared of all rubbish and shall have a stand of grass to prevent undue erosion, either by sprigging or seeding.

7.05.06 *Traffic control devices and street lights.*

- a. Street signs, traffic control signs, and devices such as stripping and signalization, shall be provided by the Developer. The developer may also install control devices only after receiving written approval from the Development Official.
- b. The installation of all street lighting fixtures within the right-of-way must be approved by the Development Official prior to such installation.

Section 7.06. Building construction.

7.06.01. Building permit required.

- a. Building permits for all structures of interior finishes are issued in accordance with the requirements of the Temple City Code of Ordinances. A building permit is also required for the movement of any house, structure or building.
- b. For any structure served by an on-site sewage disposal system, a permit issued by the county health department shall be required prior to issuance of a building permit.
- c. Building permits shall only be on lots of record, as defined in this development code.

7.06.02. Building inspection.

- a. *Scheduling a building inspection.* Inspections shall be scheduled routinely 48 hours before the inspection is needed. Expedited inspections may be performed upon request, for an expedited fee.
- b. *Required inspections, at a minimum:*
 - 1) Foundation. Verify minimum required building setbacks, footing, trenches dug and reinforcing steel in place.
 - 2) Plumbing Connections. Water supply line and sewer lateral in slab foundation.
 - 3) Framing. Completion of all rough-ins and after insulation is installed.
 - 4) Interior walls may not be covered until the following inspections are completed:
 - a) Mechanical. Rough-ins complete with pressure test on gas line.
 - b) Electrical. Rough-ins with neutral, ground, and service cable wired.
 - c) Plumbing. Rough-ins complete and all fixtures installed.
 - 5) Final Inspections. Building is complete and ready to occupy.

7.06.03. Construction in flood hazard area. Construction of a structure for which a flood area permit was issued shall be governed by the following:

- a. Upon placement of the lowest floor, or flood proofing by whatever construction means, or upon placement of the horizontal structural members of the lowest floor, whichever is applicable, it shall be the duty of the permit holder to submit

to the building official a certification of the elevation of the lowest floor, flood proofed elevation, or the elevation of the lowest portion of the horizontal structural members of the lowest floor, whichever is applicable, as built, in relation to mean sea level.

- b. Certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by such registered land surveyor or professional engineer. When flood proofing is utilized for a particular building, the certification shall be prepared by or under the direct supervision of a professional engineer or architect by the professional engineer or architect.
- c. Any work undertaken prior to submission shall be at the development permit holder's risk.
- d. The building official shall review the floor elevation survey data submitted. Deficiencies detected by such review shall be corrected by the development permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make the corrections shall be cause to issue a stop-work order for the project.

7.06.04. *Certificate of occupancy required.* A certificate must be issued prior to the occupancy or use of any new or newly renovated building or structure, in accordance with the "plan and permits" article of this development code.

ARTICLE VIII. Water, Sanitary Sewer and Storm Water Management

Section 8.1. Administrative Procedures.

The following procedures are established to provide a standard process for the approval of plans and subsequent project construction. Additional information may be required, if deemed necessary, by the City.

- A. The construction drawings approved by the City indicate the extent and general arrangement of the water distribution, sanitary sewer collection and stormwater management systems. If any departures from the approved construction drawings are deemed necessary by the contractor, details of such departures and the reasons therefor shall be submitted to the City as soon as practicable for approval.
- B. All approved construction drawings which may include site plans, water distribution system plans, sewer system plans, stormwater management plans, erosion control plans, pollution prevention plans, hydrology studies and other materials submitted to and reviewed by the City, along with these specifications, shall be considered as supplementary, one to the other, so that materials and labor indicated, called for, or implied by these specifications and not on the plans, shall be supplied and installed as though specifically called for in the plans.
- C. All contractors and designers should be aware of the City's construction specification requirements prior to construction. As such, all contractors and designers are required to possess a copy of the City's Construction Standards Latest Edition. The contractor's copy of these specifications shall be available for consultation at the construction site.
- D. The City will not be held responsible for any water, sewer, or storm water distribution system installation, which cannot be accepted into its system because of the contractor's lack of knowledge of the existence of the City's specifications. If it appears that the plans were prepared without regard to these specifications, they will be returned unapproved without comment.

8.1.02. *Land Disturbance Permit.*

- A. As required by the Georgia Erosion and Sedimentation Control Act, development and redevelopment projects that involve the disturbance of one or more acres or any soil disturbance within 200 feet of the bank of a perennial stream, must obtain a Land Disturbance Permit (LDP). All documents associated with LDPs shall be submitted to the City. Projects undertaken by private owners for their personal residence that involve less than one acre can be within 200 feet of a stream bank and not require an LDP.
- B. A Notice of Intent (NOI) shall be submitted to both the Authority and the State of Georgia Environmental Protection Division (EPD) prior to issuing an LDP.

The NOI shall include the construction exit location latitude and longitude in degrees, minutes and seconds.

- C. Reserved
- D. The City will submit two copies of the erosion and sedimentation control plan to the local soil and water conservation district or Georgia EPD for review and approval as required. District or Georgia EPD approval must be obtained prior to issuance of an LDP.
- E. The LDP will be issued once all local governing authority requirements have been met. The City will release the LDP to the owner/developer at the pre-construction meeting.

8.1.03. Project Approval Procedure

- A. All project design and construction shall be in accordance with all federal, state, and local standards and regulations, including but not limited to the latest editions of the following documents:
 - 1. City of Temple Construction Standards, latest edition
 - 2. Georgia Storm Water Management Manual
 - 3. Manual for Erosion and Sediment Control in Georgia
 - 4. Recommended Standards for Wastewater Facilities
 - 5. Minimum Standards for Public Water Systems
 - 6. American Water Works Association (AWWA) Standards
- B. A project Concept Meeting should be held with the Development Official prior to the approval of any preliminary plat or very early in the design process if no preliminary plat is required. The purpose of the Concept Meeting is to ensure the following:
 - 1. The Developer and the Developer's Engineer are familiar with all aspects of Temple's Design & Construction Standards relative to Erosion & Sediment Control, Water, Sewer, and Storm Water
 - 2. Review and discuss the general characteristics of the project relative to any unusual aspects of Erosion & Sediment Control, Water, Sewer, and Storm Water

3. The Developer and the Developer's Engineer are aware of the process of submitting plans for review and approval by the City and Georgia EPD
 4. The Developer and the Developer's Engineer understand any special requirements relative to any local, state, or federal regulations which have to be included with plan submittals
 5. The Developer and the Developer's Engineer understand the City's expectations relative to Erosion & Sediment Control and the use of BMPs, especially those BMPs relating to cut and fill slopes
- C. A water and sewer availability letter may be issued by the Authority upon request. NOTE: The issuance of an availability letter does not constitute a guarantee of water or sewer plant or infrastructure capacity. Capacity is not allocated or guaranteed until it is purchased through the sale of a water meter. Water and/or sewer service may require infrastructure upgrade at the developer's expense. Under no circumstances is an availability letter valid for more than one year.
- D. Developers are required to purchase a flow test for each project involving water infrastructure or fire protection construction. The flow test must be performed by a private contractor and funded by the developer to determine the quantity of water available to the proposed development. The private contractor must gain prior approval for testing from the City. Upon completion of the said flow test, the Private Contractor shall provide a copy of the flow test results to the Carroll County Fire Department, Carroll County Fire Marshal and the City.
- E. Developers wishing to obtain City approval shall submit six (6) copies of the site design and construction drawings and three (3) copies of the Stormwater Management Plan (if applicable) for review.
- F. The cover sheet on all drawing submittals shall contain the following information:
1. Total acreage for the site
 2. Disturbed acreage
 3. For commercial projects, total impervious surface in square feet including but not limited to buildings, paving, and curb and gutter.
- G. The cover sheet on all drawing submittals shall contain the following notes:

1. Storm Water management structures on private property must be maintained by the property owner. All subsequent owners must be informed of operations and maintenance requirements. Failure to maintain stormwater infrastructure may result in enforcement action. Changes and modifications to stormwater infrastructure (public and private) must be approved by the City.
2. Downstream impacts of development are the responsibility of the Owner. Development may not cause downstream impacts such as increased flood hazard, erosion of off-site soils and stream channels, or impairment of water quality of receiving waters.
3. Approval is based on information supplied on these drawings. If unknown conditions are encountered, or site conditions change, or these plans are otherwise found to be not representative of site conditions, the City shall be contacted and informed about such conditions. Design revision and re-submittal may be required, in the City's sole and complete discretion.
4. Construction, which impacts streams, wetlands, or other environmentally sensitive areas, shall comply with applicable local, state, and federal laws. Plan approval by the City does not relieve the Owner, Developer, and Contractor of the obligation to apply for and obtain required permits and comply with current regulations.
5. Development may not occur in flood prone areas as defined by FEMA, State of Georgia, Carroll County, or the City of Temple. Unauthorized development will be ordered removed and restoration of the site required, both at the expense of the Developer.
6. Approval of these plans is based on submitted information regarding extents of soil disturbance, schedule of activities, and proposed measures to control erosion and sediment control. Significant changes to project design or schedule elements must be approved by the City.
7. Plan approval does not release any party from duty to comply with local, state, and federal law. It is unlawful to increase turbidity in receiving waters more than 25 NTU.
8. The City requires that every service connection be equipped with a backflow prevention device. Facilities that, in the opinion of the City, may potentially introduce hazardous or toxic substances into the water supply will be required to install a reduced pressure assembly that vents to the atmosphere.

9. City approval of these plans does not constitute a guarantee of water or sewerage capacity. Capacity is not allocated until it is purchased through the sale of a water meter.
 10. Any modifications/changes to an existing or additions to a portion of the water, sewer, or stormwater systems is required to be inspected and or reviewed by the City.
 11. Plan approval does not release the Owner, Developer, or Contractor from responsibility for environmental damage, property damage, or endangerment of public health. Responsible parties shall mitigate impacts, repair damage, and compensate affected parties as required by local and state law.
 12. All construction and materials shall be in full accordance with current Rules and Regulations and Design Standards and Specifications. It is the responsibility of each Developer and Contractor to familiarize himself with all current Cityrules and standards.
 13. The City will obtain road bore permits and road cut permits at the County and State levels for all approved projects. Road bore/cut work shall not begin until permits are obtained.
 14. TheCitymust be notified at least 72 Hours before Construction at 770.562.3369.
- H. The City will review the site design and construction drawings and the Storm Water Management Plan and identify required changes. Review comments will be returned to the project engineer. Plan review fees shall be applied as stipulated in the City's Rules and Regulations, latest edition. When the drawings and plans are corrected to reflect allCity comments, five (5) sets of design and construction drawings shall be stamped approved as well as two (2) sets of the Storm Water Management Plan. The City shall retain two (2) sets of approved design drawings and one (1) set of the Storm Water Management Plan. Three (3) sets of approved plans will be returned to the project engineer. One set of approved drawings shall be on site throughout development construction.
- I. Plans will not be approved until all state and federal permits and all variances are received.
- J. Two additional drawing sets shall be submitted to the Cityfor approval and Citysubmittal to the Georgia Environmental Protection Division for all projects that include any of the following:
- A. 8 inch diameter sewer lines or larger for a length of 500 feet.

B. All sewer lift stations.

- K. Plan approval does not relieve the developer from the responsibility of downstream impacts caused by the quality or the quantity of stormwater runoff, nor does plan approval constitute a guarantee of plant or infrastructure capacity.
- L. Plan approval shall be valid for a period of one year. If construction is not substantially underway within one year after the approval date, a re-submittal of the plans may be required. City review and approval does not relieve the owner, developer, and/or contractor from any responsibility or liability.
- M. Plan approval shall not relieve any party from the duty to comply with all applicable construction specifications established by the City. The owner, developer, and/or contractor must comply with applicable federal, state, and local regulations including but not limited to, pollutant discharge limits, wetland protection, stream buffer protection and flood protection.
- N. Upon project acceptance, the City will accept dedication of and own all water mains, sewer mains and lift stations that serve more than one property owner, as well as all stormwater collection and conveyance structures located in the public right-of-way or stormwater structures outside of the public right-of-way that have been accepted by the City, including inlets, catch basins, pipes, ditches, and channels. Regardless of dedication by plat or otherwise, project acceptance by the City shall not be deemed an acceptance, either express or implied, of any stormwater facilities and structures located outside of the public right-of-way or on private property. All stormwater facilities and structures located on private property shall be owned and maintained by the property owner(s). The City shall not accept, own, or be responsible for any storm water facilities or City structures located outside of the public right-of-way or on private property unless the City specifically agrees to take ownership and responsibility for said facilities or structures in a separate document approved in writing by the City.
- O. All submittals to this City pertaining to the design or construction of water, sewer and stormwater infrastructure, including record drawings, shall be sealed and signed by a Professional Engineer licensed in the State of Georgia. The City reserves the right to return documents not meeting this criterion without review or comment.

8.1.03. *Reserved*

Section 8.1.04. *Project Construction.*

- A. Prior to the release of the Land Disturbance Permit, a copy of the recorded permanent easements naming the Developer as the grantee for all required off-site public water and sanitary sewer structures shall have been received by the City. Also, a copy of the recorded off-site permanent drainage easements naming the Developer as the grantee shall have been received by the City prior to the release of the Land Disturbance Permit. The Developer shall be responsible for recording the off-site easement(s) in the Records of the Clerk of the Superior Court of Carroll County, Georgia. Upon completion of construction and prior to project acceptance, easements for public water and sanitary sewer structures shall be transferred to name the City as grantee.
- B. Construction may begin after City approval and applicable permits are obtained. At least a 72-hour notice shall be given to the City to allow sufficient time for the developer to schedule a pre-construction meeting with the City and for an inspector to be assigned to the project.
- C. The first activities that shall occur on site shall be installation of the access pad (construction exit), sediment barriers, and sediment storage. Once these are properly installed, the developer shall contact the City for an inspection. Construction activities, including but not limited to clearing, grading and demolition may not commence until the initial erosion control measures are inspected and approved by the City's inspector.
- D. Infrastructure that has not been inspected and has been backfilled is subject to being excavated for the purposes of a full and complete inspection at the City's sole discretion.
- E. If construction of infrastructure with a hydraulic component must vary from approved plans, the design engineer shall submit revised plans for approval prior to the installation of the infrastructure.
- F. Contractors shall provide the City inspector with a construction schedule and shall make every effort to perform infrastructure construction during the City's regular business hours, typically Monday – Friday, 7:30 a.m. – 6:30 p.m. Contractors performing infrastructure work at times other than the City's regular business hours are subject to reimbursing the City for inspection services. Under no circumstances shall contractors perform infrastructure construction prior to dawn or after dusk without prior authorization.
- G. City inspectors are required to be present during infrastructure tie-ins to City owned and operated systems.
- H. The City will inspect erosion and sediment control measures during the first week of the project and at least once a week thereafter. Inspections may also be performed before, during, or after rainfall events. In the event that problems are observed, the inspector shall issue a written Notice of Violation to comply and notify the 24-hour contact listed on the erosion control plan.

In the event the remedial measures described in the Notice of Violation have not been completed by the date set forth for such completion in the Notice of Violation, a Stop Work Order may be issued. If the violation presents an immediate threat to public health or waters of the state or if land-disturbing activities are conducted without obtaining a Land Disturbance Permit, the City may issue an immediate Stop Work Order. All stop orders shall be effective immediately upon issuance and shall remain in effect until the necessary corrective action is taken to the satisfaction of the City. If proper corrective action is not taken within 10 days of issuance of a Stop Work Order, the City may call the Performance Bond or any part thereof to be forfeited and may use the proceeds to hire a contractor or use the City's own forces to stabilize the site.

- I. Utility permits are required prior to commencing infrastructure work in the Carroll County Right-of-Way and in the Georgia Department of Transportation (GDOT) Right-of-Way. Utility permits are in addition to permits for road bores and road cuts. The City will obtain these permits and issue them to private development contractors at the pre-construction meeting or prior to construction within the Right-of Way.
- J. Warranty - Pipes, structures, and devices that convey, detain, or treat potable water, sanitary sewage or stormwater which are accepted by the City for ownership, operation and maintenance shall be warranted and guaranteed for a period in accordance with the provisions in Section 1(H)(1) from the date of final acceptance. The warranty shall provide for completed utility systems free from any and all defects due to faulty products or workmanship. The contractor shall make such corrections as may be necessary by reason of such defects upon notice by the City. This provision includes but is not limited to repairing and/or replacing infrastructure components that have been damaged by the developer's contractors and other utility contractors. The City may make a claim against the developer's road bond with the local governing authority for infrastructure that is damaged as a result of paving operations.

In addition to the one-year warranty required of the contractor, the developer and the owner agree that they shall forever warrant the design, installation, and function of all structures constructed pursuant to the approved plans for the project with respect to any latent defect, improper workmanship below the standard of care established by these Design and Construction Standards, or any other impropriety, whether a result of negligence or intentional misconduct. The developer and the owner shall be responsible for the correction of any problems arising from a defect pursuant to this paragraph.

8.1.05. *Project Acceptance.*

- A. The City will issue an acceptance letter for all projects when the following requirements are met:

1. All quality assurance tests are conducted by the contractors, observed by City personnel and are found to meet or exceed established requirements.
2. All water, sewer, and stormwater conveyance structures, detention facilities, and best management practices are completed for the development.
3. All record drawings in accordance with Section 8.1, Item G have been approved.
4. Maintenance bonding for water, sewer, and storm water infrastructure in accordance with Section 8.1, Item H has been received.
5. All fees, such as impact fees and lift station maintenance fees, are paid.
6. The original permanent easements naming the City as the grantee for all required off-site public water and sanitary sewer structures have been received by the City. The owner/developer is responsible for obtaining all required off-site easements. The City attorney is responsible for preparing all easements to be dedicated to the City upon receipt of the proper plat information. Five (5) copies of a plat of survey in legally recordable form, showing the off-site easement(s) and all related bearings, courses, and distances should be submitted to the City for preparation of the required documents. The City will not accept any easements or other grants of property unless the easement, deed, or other document of conveyance has been reviewed by the City's attorney and approved by the Executive Director or his designee in writing on the face of the original document. Upon approval, the City shall be responsible for recording the off-site easement(s) and plats of survey in the Records of the Clerk of the Superior Court of Carroll County, Georgia.
7. Reserved
8. Nine months after the letter of acceptance is issued, the project will be re-inspected to ensure system acceptability. A representative of the developer must be present for this inspection. If any corrective measures are necessary, a letter delineating the items to be corrected will be sent to the developer.
9. After the project is accepted, after the bonding period as specified in Section 8.1(H)1 has been fulfilled, and after all final punch-list items have been resolved, the maintenance bond will be released.

8.1.06. "Record Drawings"

- A. The City will not release the project for field-testing (as described in other sections of these specifications) until paper and electronic copies of the record drawings that meet the requirements of this section have been submitted and approved.

- B. Paper copies shall be original drawings. Blue line drawings will not be accepted.
- C. Electronic Record drawings shall be compatible with the City's version of AutoCAD or like software. Each object type shall have its own layer. For example, each of the following shall have its own layer: topographical lines, water mains, fire hydrants, sewer lines, manholes, stormwater lines, catchbasins, etc.
- D. All Record drawings shall use the state plane coordinate system, USA, GA, Nad 83, West Foot. Both electronic and paper Record drawings shall include all information contained on the approved construction drawings in the "As-Built" state.
- E. The Storm Water Management Report shall be submitted electronically in a PDF format.
- F. The developer must provide printed name, signature and certification that the project has been constructed in accordance with City Design and Construction Standards and Rules and Regulations and that the project has been built as shown on the Record drawings. The following standard certification language shall appear on each sheet of the Record drawings, accompanied by the signature of the owner/developer, prior to approval of the drawings by the City:

"I certify that this project has been constructed in accordance with City of Temple Design and Construction Standards and Rules and Regulations, Latest Editions. I also certify that this project has been built as shown on the Record drawings."

- G. The professional engineer must provide printed name, signature, seal and certification that the plans and specifications were designed in accordance with all acceptable standards. The following standard certification language shall appear on each sheet of the Record drawings, accompanied by the signature of the engineer, prior to approval of the drawings by the City:

"I certify that the plans and specifications of this project were designed in accordance with all applicable standards. I have reviewed the Record survey for this project and have found the facilities, structures, and utilities as shown on that survey to be in conformance with the design drawings for this project."

- H. A registered land surveyor or Professional Engineer, licensed in the State of Georgia, is required to field verify the Record drawings (location and invert elevation of pipes, basins, drains, ponds, BMPs, etc.). Record drawings shall reflect actual field conditions. Unmodified construction drawings are not acceptable.

- I. The following standard certification language shall appear on each sheet of the Record drawings, accompanied by the signature of the registered engineer or land surveyor, prior to approval of the drawings by the City:

"I certify that this project has been built as depicted on the Record drawings. I further certify that I have field verified all elevations, volumes, and locations as appropriate for the potable water, sanitary sewer and stormwater management structures depicted on these drawings."

- J. Each certification statement, as listed in this section, shall be accompanied by the appropriate signature. The signatory's name shall be either type written or legibly printed below each signature. Record drawings containing illegibly printed or typed names will be considered unacceptable and the drawings will be returned unapproved. Projects with unacceptable Record drawings will not be released for field-testing. The developer may be required at his or her cost to construct, reconstruct, remove or modify utility infrastructure to comply with the Record drawings when and if field conditions do not match the Record drawings.

8.1.07. *Maintenance Requests.*

- A. The owner must maintain all water, sewer, and stormwater infrastructure accepted by the City for a period of 12 months after acceptance. After 12 months, accepted infrastructure belongs to the Authority and the Authority shall provide all maintenance in perpetuity.
- B. Private water, sewer, and stormwater infrastructure shall be maintained by the owner in perpetuity. Even though these structures maybe regulated by the City, the City does not claim ownership and shall not provide maintenance therefor.
- C. Examples of private infrastructure may include, but are not limited to:
 - 1. Water – domestic service lines, fire protection lines, hydrants on private lines, post indicator valves, and backflow prevention devices along with associated boxes, vaults, and covers.
 - 2. Sewer – service lines, clean outs, manholes, grease traps, and other pretreatment devices with associated covers, rims, and lids.
 - 3. Stormwater – detention facilities, water quality structures, drainage ditches, pipes, inlets, and other structures not located within the right-of-way of public streets. This includes structures and facilities in common space and those on private lots with designated drainage easements.
- D. Maintenance of accepted infrastructure during the 12-month warranty period shall be guaranteed by a maintenance bond provided by the owner as a condition of

acceptance. The Owner shall provide bonding for a minimum period of one year after acceptance unless specified otherwise by the City.

- E. The City, in its sole discretion, reserves the right to consider proof of actual cost in lieu of the above-listed standard costs for construction.
- F. The maintenance bond must remain in full force and effect for a minimum of 12 months from the date of issuance of an acceptance letter by the City or the contractor's warranty period established by Paragraph E.9 above, whichever is longer.
- G. All stormwater management facilities, including detention ponds and water quality facilities, on common space must be maintained by the owner.
- H. All permanent stormwater detention ponds and/or water quality ponds must be in the condition of final stabilization and in working order prior to conveyance to a homeowners association (HOA). If construction has not been completed at the time of conveyance, the developer must establish a maintenance account in the name of the HOA with sufficient funds to achieve final stabilization once all construction is complete.
- I. When all construction is complete, the owner of the pond(s) shall immediately remove sediment as needed to comply with design criteria and shall establish permanent vegetation to achieve final stabilization. All sediment barriers and retrofits must be removed.
- J. All ponds will be inspected annually by the City. In the event maintenance problems are observed by City inspectors, the pond owner will be notified in writing regarding the problem. Failure of the owner to take action as required to restore the pond to good condition may result in other enforcement action.
- K. All bonds as discussed in these specifications must meet the approval of the City. The City, in its sole discretion, may accept an irrevocable letter of credit in lieu of a bond.
- L. Failures to the system while under warranty are the responsibility of the developer, including but not limited to damage caused by the developer's contractors and other utility contractors. The City will make a reasonable effort to contact the developer to repair failed infrastructure. Should the developer fail to respond in a timely manner (immediately in the case of emergencies) or should the repair be unsatisfactory to the City in any way, the City will make the repair and bill the developer at the rates specified in the City's Rules and Regulations.
- M. The City reserves the right to notify the developer's surety and/or financial institution(s) regarding defective and/or damaged infrastructure. Such notifications may consist of, but not necessarily be limited to, copying the surety

and/or financial institution(s) on punch-list letters and other such correspondence pertaining to the construction project.

8.1.09. *Performance Bonding Requirements.*

- A. Performance bonds are due in full prior to issuance of a Land Disturbance Permit.
- B. Construction activity involving the disturbance of public or third party private property may require additional performance bonding at the sole discretion of the City.
- C. Developers that fail to comply with these specifications risk performance bond forfeiture.
- D. Road bores, pavement cuts, driveway cuts, and other items as determined by the City may require additional bonding prior to the start of construction activity.
- E. The City may require, at its sole discretion, a cash bond for the price of the repair to the yards, driveways, landscaping, and other features associated with proposed utility lines that cross property owned by others. The purpose of the cash bond is to assure that prompt and satisfactory repair of the damaged property is performed.
- F. Erosion Control Performance bonding will be released when final stabilization is achieved and the Authority receives a copy of the Notice of Termination (NOT).

Section 8.1.10. *Certificates of Occupancy.*

The City will sign-off on certificates of occupancy after inspecting each residential lot for drainage and final stabilization.

Section 8.02. Design Standards- Water

A. Minimum water line size

Main	8 inches
Service	3/4 inch

B. Minimum flow per residential service

2 gpm

C. Minimum fire flow

Residential	750 gpm*
Commercial	1,000 gpm*

*Or other value as determined by the Carroll County Fire Marshal's Office.

D. Maximum distance between hydrants as follows or as determined by the Fire Marshall:

Residential:	500 feet
Commercial and Industrial:	400 feet

NOTE: The City and the Carroll County Fire Marshal's Office, respectively, require fire hydrants to be located in all cul-de-sacs and in all public right-of-way intersections. Consequently, the number of hydrants required for a project may exceed the spacing requirements cited above. Reduced distances between hydrants may also be required by other governmental regulations.

E. Pressure on residential service

Minimum	20 psi
Maximum	150 psi

F. Maximum spacing between valves shall be 1000 feet.

G. Minimum ground cover 4 feet

H. Design period 50 years

I. Water lines are to be located five feet behind the existing or proposed curb or as specified by the City.

J. PVC casing shall be required for all water service lines beneath paved surfaces in new residential and commercial subdivisions. The minimum casing size for residential service lines is 2-inch. The minimum casing size for commercial service lines is 4-inch.

K. Service lines shall be installed to each subdivision lot at the time infrastructure is installed. In subdivisions where the minimum lot size is 5 acres or greater, the developer will not be required to install service lines prior to acceptance, provided there is adequate room on the right-of-way for the City to install the meters. Meters will be installed by the City upon payment of the appropriate fees by the owner / builder.

L. Leak detectors shall be permanently installed in each new residential development in accordance with the manufacturer's recommendations. Leak detectors shall be MLOG type or equal.

- M. District meters may be required on large developments (100 or more houses) on a case by case basis.
- N. Construction material and installation shall be in accordance with the current City specifications.
- O. When a proposed development will abut an existing development, the developer will be required to interconnect the existing line with the proposed development. Every effort will be made to avoid "dead end" line configurations. For future loops in the system, the City may, at its sole discretion, require the developer to extend the water main to the edge of its property or pay a fee to the City for this extension in the future. The fee will be based on a reasonable and customary estimate by the City and shall also be accompanied by all necessary easements.
- P. The City, in its sole discretion, may require the owner/developer to lay water lines outside the public right-of-way in its efforts to loop the water distribution system and minimize "dead end" line configurations (e.g., cul-de-sacs) within the bounds of the development.
- Q. Reserved
- R. The City may at its discretion reduce the minimum ground cover of a water line from 4.0 ft. to 2.5 ft. on a case-by-case basis depending on the quantity of rock encountered.
- S. The minimum water meter size for all shell buildings shall be a 2-inch compound meter. The City, in its sole discretion, may downsize the minimum water meter size requirement if the owner/developer submits detailed architectural plans showing all proposed fixtures and the total fixture count justifies a smaller sized water meter.
- T. For all multi-family residential developments approved on or after January 1, 2006, the developer / owner shall install individual sub-unit meters for the metering of water use by each individual unit.
- U. The developer is responsible for ensuring that the Automatic Meter Reading (AMR) signal for all meters in new development and redevelopment is of sufficient strength to be read by the City's AMR system:
 - 1. The developer may be required to install any and all equipment, including but not limited to, repeaters or towers, as necessary to boost signal strength.
 - 2. The installation of such equipment shall be in accordance with the current or proposed water meter system within the City. It is the

responsibility of the Developer and Contractor to confirm in writing which type of system the City requires the developer/contractor to install.

V. To protect the integrity of the potable water system, an air gap must exist between all well water supplies and the potable water distribution system. The City expressly prohibits all cross connections between well water supplies and treated drinking water on the customer side of the meter.

W. The City, in its sole discretion, may require the plans to include details of all elements of the design not covered by these specifications. A Professional Engineer registered in the State of Georgia shall certify all such details.

X. To facilitate future extension of the potable water distribution system, the City, in its sole discretion, may require the owner/developer to provide an easement through the property or extend an easement to the edge of the project property line.

Y. To limit highway water line crossings, the City reserves the right to prohibit longside bore water service for roadways that are 3 lanes (36 feet) or wider. If longside bores are prohibited, water service must be obtained by extending the water line on the development's side of the roadway.

Z. When water lines cross or are in close proximity to a hazardous location (i.e. gas lines), the City may require additional protective measures.

AA. For projects that utilize fire pumps, the following information shall be submitted prior to plan approval:

1. Minimum water system pressure and minimum water system flow required to operate fire pumps. Design shall include reasonable reductions of system pressure and flow to account for normal fluctuations of the water system and to account for reductions in overall system pressures.
2. Flow and pressure data on all fire pumps.
3. A low pressure cut off shall be installed to maintain a minimum pressure on the suction side of each pump at a pressure to be determined by the City.
4. The process on how fire pump alarms will be monitored.

8.2.01. Information to be shown on Plans- Water.

- A. Project name and valid registration stamp of the Professional Engineer registered in the State of Georgia. The stamp and signature of registered land surveyors or

landscape architects are not acceptable. The registered Professional Engineer must also stamp any plan redesign. The registered Professional Engineer must sign across the stamp.

- B. All construction drawings submitted to the City for review shall be professionally printed (AutoCAD format or approved equal). Hand written notes are not acceptable and will not be reviewed.
- C. Site plans should include street, street names, lot layout (if subdivision) or building locations (if multi-family, commercial or industrial), land lots and district, north arrow, water layout only.
- D. Detailed plans of the location and the construction of water mains, valves, fire hydrants, and appurtenances.
- E. Limits of the 100-year flood plain.
- F. Location and size of water meters. For commercial subdivisions where lot use is unknown, meter size and location are not required.
- G. Thrust blocks at all bends and tees. Thrust blocks shall be designed by a registered Professional Engineer licensed in the State of Georgia.
- H. Type of material to be used.
- I. Location and size of existing water lines surrounding the project.
- J. Nearest existing line valves on the main.
- K. Other utilities in area of potential conflict.
- L. Existing ground elevation.
- M. Proposed tie-in with existing lines.
- N. Pressure-flow test results, development water demand and fire flow requirements.
- O. Twenty-foot permanent easements are required where the water line crosses private property. More easement area may be required as deemed necessary by the City.
- P. Plan and profile scales shall be:

Vertical: 1 inch = 5 feet or 1 inch = 10 feet
Horizontal: 1 inch = 20 feet or 1 inch = 50 feet

- Q. Sheet size is 24 inches x 36 inches. "Half-size" drawing sets will not be reviewed and will be returned to the owner/developer.
- R. A general site location map shall be shown on the title sheet or first page.
- S. All flood related information shown on the plans shall be as determined by a step-backwater analysis performed by a Professional Engineer licensed in the State of Georgia.
- T. The following notes shall be required on all drawings submitted to the City:
1. All water mains and sanitary sewer construction shall conform to the City's Design and Construction Standards, latest edition.
 2. Notify the City at least 72 hours prior to beginning of construction on water and sewer. An inspector will be assigned and a pre-construction meeting scheduled at this time.
 3. Record drawings shall be field verified and stamped by a registered Professional Engineer or land surveyor, licensed in the State of Georgia.
 4. Reserved
 5. Contractors have the responsibility to assure erosion control of all City easements, particularly when these easements are in close proximity to drainage easements. See the assigned City inspector for details.
 6. The contractor shall comply with all Utilities Protection Center requirements.
- U. Additional items may be requested if deemed necessary by the City.

Section 8.3. Design Standards- Sewer

8.3.01. Design Standards.

- | | |
|----------------------------------|--------------------|
| A. Minimum sewer size | |
| Collector | 8 inches |
| Service | 6 inches |
| Force Main | 4 inches DIP |
| B. Design period | 50 years (per EPA) |
| C. Minimum drop inside a manhole | 0.2 feet |
| D. Maximum drop inside a manhole | 2.0 feet |

E. Maximum drop outside a manhole	20.0 feet
F. Minimum sewer line slope (8-inch pipe):	0.40%

Minimum sewer line slope for all other pipe sizes shall be in accordance with the Recommended Standards for Wastewater Facilities, latest edition.

A. Maximum sewer line slope:

Ductile Iron Pipe Requirements

< 10%	No special requirements.
10% - 15%	Concrete collar required at the downstream manhole.
>15% - 25%	Concrete collar at every joint Or Concrete collar at the downstream manhole and a certified compaction test.*

PVC Pipe Requirements

< 10%	No special requirements.
10% - 20%	Concrete collar required at every joint Or Concrete collar at the downstream manhole and a certified compaction test.*
>20%	Unacceptable

* All compaction tests must be performed and certified by a soil scientist or Professional Engineer registered in the State of Georgia and shall be to 95% standard Proctor compaction test (ASTM D 698). The number of tests required shall be based on field conditions as determined by the Cityinspector.

B. Flow Calculations

Detached Single Family Residence	400 gpd per lot
Multi-Family Residence	250 gpd per unit
Peak Factor	2.5

Note: At peak flow, pipes shall flow no more than 25% depth with respect to pipe diameter. For example, an 8-inch gravity sewer line shall be designed such that depth at peak flow conditions does not exceed 2-inches.

C. Minimum Manning's "n" Factor .013

D. A sewer flow calculation table similar to the following shall be included with the plans:

Sewer Line I.D.	Number of Lots Falling to Line	Average Daily Flow (ADF) @ 400 GPD per Lot	Peak Flow @ 2.5 x ADF	Minimum Slope Needed to Meet Maximum Flow at 25% of Diameter Depth	Minimum Proposed Sewer Line Slope	Velocity (fps)
A	75	30,000	75,000	0.5%	0.7%	fps
B	90	36,000	90,000	0.8%	1.0%	fps
C	165	66,000	165,000	2.5%	2.6%	fps

E. Velocity requirements

a. Force Main		
Minimum	2.0 fps	
Maximum	10.0 fps	
b. Gravity Sewer		
Minimum	2.0 fps	
Maximum	15.0 fps	

Where velocities in gravity sewer lines are greater than 15 fps, the City may require special provisions to protect against displacement by erosion and impact. Drop manholes and/or steel erosion plates can be constructed to reduce high flow velocities.

F. Infiltration Allowance 50 gpd/in. Dia./Mile

G. Maximum distance between manholes 400 feet

H. Sewer lines shall be located in the centerline of road rights-of-way, if possible.

I. Minimum ground cover shall not be less than 6 feet when possible.

J. When a smaller sewer pipe joins a larger one, the pipe shall be installed to match the elevation of the crown of the two pipes, not the invert. The City, on a case-by-case basis, will review special situations.

K. Service line stub-outs shall be plugged or capped with leak proof plugs or caps as manufactured by ETCO, Inc. or equal and the locations of each service shall be identified by station on the Record drawings.

L. Service line stub-outs shall be wrapped with underground detection / tracer tape.

M. Construction material and installation shall be in accordance with the current City construction specifications.

N. A horizontal separation of at least 10 feet must be maintained between the water main and the existing or proposed sewer. Explicit approval is required to reduce horizontal separation to less than the minimum standard referenced above. When water mains cross sewers, a minimum vertical separation of 18 inches must be provided between the two pipes (measured edge to edge). At crossings, one full length of water pipe must be located so that both joints are as far from the sewer as possible. All sewers shall be designed to prevent damage from superimposed live, dead and frost-induced loads. Proper allowances for loads on the sewer shall be made because of soil and potential ground water conditions, as well as the

width and depth of the trench. The weight of soil above the sewer and the weight and buoyancy forces associated with the water must be taken into account.

- O. DIP will be used on sewer lines with less than four feet of cover, greater than 13 feet of cover and all exposed sewer lines.
- P. DIP or steel casing shall be used whenever stormwater pipe overlays the sewer line. The casing, at a minimum, shall extend 10 feet on either side of the centerline of the stormwater pipe and cover the upstream joint of the sewer line.
- Q. DIP shall be used on sewer lines that cross streams and drainage ditches. Buried sewer lines beneath streams shall be encased in concrete a minimum of five feet beyond each stream bank.
- R. Buoyancy of sewers shall be considered in sewer design. The City, in its sole discretion, reserves the right to require additional soil cover and/or concrete anchor blocks to prevent floatation of the pipe where high ground water conditions are anticipated.
- S. Force mains shall be DIP.
- T. All sanitary sewer service laterals at the easement line or right-of-way line shall be a minimum of 2 feet below any related finished floor elevation.
- U. The developers of new subdivisions shall be required to install sewer laterals to all lots in sewerred subdivisions.
- V. Individual service laterals must serve only one dwelling. Under no circumstances shall two dwellings share the same public or private lateral.
- W. Drainage from structures that could potentially cause infiltration or inflow (e.g., downspouts, uncovered garbage and trash receptacles, uncovered dumpsters, etc.) shall not connect to the sanitary sewer collection system.
- X. Restaurants are encouraged to connect their dumpster pads to the sanitary sewer system. Dumpster pads that connect to the sanitary sewer system shall connect through an approved grease trap and be covered to prevent surface water from entering the drain.
- Y. All dumpster pads that discharge pollutants or water containing pollutants and are not connected to the sanitary sewer shall be in violation of illicit stormwater discharge regulations. Illicit stormwater discharges are subject to the policies and penalties of the City's Rules and Regulations, latest edition, and/or such penalties as may be found in the Temple City Code.

Z. The City, in its sole discretion, may require the plans to include details of any and all elements of the design not covered by these specifications. A Professional Engineer registered in the State of Georgia shall certify all such details.

AA. In order to facilitate future extension of the sewer collection system, the City, in its sole discretion, may require the owner/developer to provide an easement through the property or extend the sewer line to the edge of the project property line.

BB. All private lift stations, excluding single-family residences, shall be designed in accordance with City Design and Construction Standards. Upon review, the City, at its discretion, may waive some of the requirements based on the specific conditions of each private lift station.

CC. All flood related information shown on the plans shall be as determined by a step-backwater analysis performed by a Professional Engineer licensed in the State of Georgia.

DD. When sewer lines cross or are in close proximity to a hazardous location (i.e. gas lines), the Authority may require additional measures.

EE. Wastewater generated from swimming pool facilities shall be discharged into the City's sanitary sewer system. If the pool facility is not served by the City's sanitary sewer system, the pool discharge shall drain to a system approved by the Department of Environmental Health.

FF. All force mains and reclaimed water lines shall be marked with locator / tracer tape located a minimum of 2 feet above the pipe. Tape colors shall conform to the APWA Uniform Color Code as listed below:

a. Force mains – Green

b. Reclaimed water lines – Purple

GG. All force mains and reclaimed water lines shall be painted 270° starting on the top of the pipe, according to the specifications below or as approved by the City:

a. Surface Preparation: SSPC-SP3 Power Tool Clean

b. Field Prime: Tnemec Paint Series 135 @ 3.0 to 5.0 mils, dry film thickness

c. Field Second: Tnemec Paint Series N 69 @ 3.0 to 5.0 mils, dry film thickness (2 coats)

d. Paint colors shall conform to the APWA Uniform Color Code as listed below:

i. Force mains – Green

ii. Reclaimed water lines – Purple

8.2. *Lift Station Requirements.*

A. Lift Station Policy

It is the goal of the City of Temple to provide for the conveyance of wastewater by natural gravity flow wherever and whenever possible. In order to facilitate the City's goal, the City has policies that allow the reimbursement of certain costs of off-site trunk sewer extensions and over sizing lines.

The installation of a lift station increases the cost of providing sewer service and transfers the burden of extending trunk sewers and/or repairing, improving, and replacing the lift station to the City and its sewer customers. Lift stations, if deemed necessary, must be carefully integrated into the City's overall plan for providing wastewater service to its customers.

B. Detailed Plans and Specifications

Design drawings and specifications for the lift station shall be reviewed by the City concurrently with the overall development plans. This submittal shall contain: 1) design and operational information, 2) detailed design drawings, and 3) technical specifications.

C. Lift Station Requirements

Lift stations must be designed by a Professional Engineer licensed in the State of Georgia, and shall be designed and constructed in accordance with the City's standards in affect at the time. These standards, in conjunction with the standard details in the Appendix of Section 8.6, shall include, but not be limited to, the following:

Site Location and Layout

1. The lift station shall be located, whether inside or outside of the proposed development, to service ten-times the developed area. The maximum required service area shall be 1,000-acres or no more than 5,000 feet of gravity sewer outside the development, whichever is less. The service area can include area served by any existing public sewer system; however, any area served by an existing lift station that will not be eliminated according to the below requirements must be excluded from the service area for the

proposed lift station. Note that this requirement affects the location of the lift station only, not the sizing.

2. The lift station must be located at or beyond the nearest downstream confluence outside the development. The maximum required amount of gravity sewer outside the development to meet this requirement shall be 100 linear feet per developed acre or 5,000-feet, whichever is less. This requirement may be waived if the lift station located within the proposed development area will serve more than two-times the service area requirement.
3. The lift station cannot be located upstream of an existing lift station. If the proposed lift station is upstream of an existing lift station, the developer shall install a gravity sewer line from the proposed development to convey flows to the existing lift station and upgrade the existing lift station as necessary. The maximum amount of gravity sewer line required outside the development shall be 100 linear feet per developed acre or 10,000-feet, whichever is less.
4. The lift station cannot be located downstream of an existing lift station. If the proposed lift station is downstream of an existing lift station, the developer shall install a gravity sewer line to convey the flow from the existing lift station to the proposed lift station, thus eliminating the existing lift station. The maximum amount of gravity sewer line required outside the development shall be 100 linear feet per developed acre or 10,000-feet, whichever is less.
5. A waiver of any or all of the above requirements, Items 1-4, may be considered in the sole discretion of the City in any of the following cases:
 - a. The proposed lift station will eliminate two or more existing lift stations.
 - b. The proposed lift station will be eliminated by a future project or projects known to the City.
 - c. The total amount of gravity sewer required outside of the development (both upstream and downstream together) to satisfy all of the applicable requirements above, Items 1-4, is greater than 100 linear feet per developed acre or 10,000-feet. In this case, the City, on a case-by-case basis and at its discretion, will determine the best combination of requirements to locate the proposed lift station. In no case will the developer be required to install more than one 100 linear feet per developed acre or 10,000-feet, whichever is less, outside the development.

- d. The City is compensated for the difference in cost to locate the lift station at a site that satisfies the applicable requirements above, Items 1-4, versus locating the lift station on the project site or another site proposed by the developer. The cost difference shall be determined by the City.
6. If the proposed developed area covers more than one drainage area (e.g. parts of the development naturally drain to more than one location), the area shall be divided by its respective drainage pattern(s) and treated as separate developments where each lift station must meet these requirements separately.
7. No lift station will be permitted for a proposed development of less than forty (40) Equivalent Residential Units (E.R.U.) or a watershed having an estimated ultimate development of less than 80 E.R.U.
8. The lift station and incoming manholes shall be outside the 100-year flood zone wherever possible. If not reasonable and/or the City determines installation within the 100-year flood zone is acceptable, the lift station and incoming manholes shall be designed and constructed according to all applicable FEMA, NFIP, EPA, EPD, State, and local ordinances.
9. The deeded lot size shall be minimum 40-feet by 40-feet. The lift station shall be fenced minimum 30-feet by 30-feet with 6-inches of crushed stone extending 6-inches outside fence.
10. The lift station layout shall be such that a driveway will access the pump loading point. The lift station access drive shall be paved with either concrete or asphalt. The pump station driveway slope shall not exceed 10%. Drives shall be minimum fifteen-feet wide and in accordance with Georgia D.O.T. standards and Carroll County standards for industrial roads. The sub-base shall be compacted to 95% standard proctor per ASTM D698 standards. For driveways over fifty feet in length, a turnaround will be required and shall be twenty-feet off the fence, 16-feet deep with a 15-foot radius to the driveway.
11. The pump station layout shall be configured so the station can be expanded to the ultimate size to pump the ultimate upstream flow. Initial and future land requirements including access for the pump station shall be obtained by the developer and donated to the City in fee simple.
12. A debris manhole is required inside the fence.
13. An odor control system, designed by a licensed, professional engineer, shall be provided on all lift stations. The odor control system shall meet the following minimum requirements:

- a. Air shall be removed via applicable fan and induced through carbon media canister unit or other treatment device / method approved by the City.
 - b. Ductwork shall be plastic material and shall be UV rated or painted with UV rated paint.
 - c. Treatment unit (i.e. carbon canister) and fan shall be sized to treat air volume, at a minimum, as follows:
 - d. Fan shall be sized to create negative pressure within wetwell to prevent air escaping.
 - e. Air volume treated shall be considered the volume displaced by the peak sewerage flows served by the lift station.
 - f. Assume area for potential air seepage into and out of the wetwell (i.e. around pump hatch openings, vents, cracks, etc.). Assume 1/8" thick.
 - g. At a minimum, air velocity shall be assumed at 100 feet / minute.
 - h. For Safety Factor, assume one (1) of the largest hatches remains open at all times.
14. Lift stations shall have a 6-foot high security fence topped with standard 3-strand barbed wire on angled extension arms. Fences shall be installed using 9-gauge fabric with 1-1/2-inch top rails and bottom tension wires; 2-inch line posts and 3-inch corner posts set in concrete 10-feet apart; 16-foot gate with 9 gauge cross-tension wires installed on 4-inch gate posts.
- A vegetative screen shall be installed outside of the security fence such that the lift station will not be visible from off the lift station property except for penetrations required for access. The base of the vegetative screen shall be mulched.
15. A potable water supply line and backflow preventer is required on all lift stations. The water supply line must be capable of delivering a minimum of 20 gpm through a yard hydrant located within the lift station fence.
16. The backflow preventer shall be installed above grade, piped with brass or hard copper, inside a freeze protection cover certified to ASSE Standard 1060 Classes I, II, III with drain flap to allow a minimum discharge of 60 gpm. Cover shall be anchored to suitably sized concrete pad as specified by the manufacturer.
17. The yard hydrant shall be Simmons 800 Series freeze-proof with 3/4" hose connection, or approved equal. The base of the yard hydrant shall be

installed in an adequately sized bed of #57 stone with a 2-foot by 2-foot splash pad at grade.

B. Wet Well Requirements

1. Design calculations, signed by a Professional Engineer, must be submitted to the Authority for review and shall contain the following computations:
2. Capacity at peak flow
3. System head – tabulated and plotted on pump performance curve
4. Cycle time – including starts per hour for peak flow and average flow conditions
5. Buoyancy calculations
6. Storage volume – volume available in the event of a power outage

C. Drainage basin flow shall be calculated for the natural drainage basin area flowing into the proposed lift station. Flow calculations shall be based upon acreage, usage per established zoning, anticipated densities and development type if there is evidence of potentially greater wastewater flow being generated in excess of established zoning.

D. The lift station shall be sized based upon the anticipated upstream flow that will be realized in a seven-year period of basin development. The amount of development in a basin is judgmental and shall be determined by the City based on land use and zoning maps or other appropriate information.

E. Generally, the following minimum average daily flow rates and peaking factors are used for calculating estimated usage in the basin:

1. Residential Areas: 400 gpd per equivalent residential unit, with a peaking factor of 2.5
2. Commercial and Industrial Areas: 2,000 gpd per acre of developed land, with a peaking factor of 3.0
3. These values may increase depending on the actual development in the basin, as determined by the City on a case-by-case basis.

F. The lift station influent line invert shall be set so that all upstream gravity flow into the lift station can be achieved. The influent pipe shall be sized at a minimum slope per "10 State standard" for basin flow with a peaking factor of 2.5 (or greater as specified by the City).

- G. The wet well shall be sized for peak flow conditions using a peaking factor of 2.5 (or greater as specified by the City). The allowable number of pump cycles per hour shall be determined by dividing the pump manufacturer recommended pump starts per hour by 1.3. The wet well shall have a plugged stub so that the gravity sewer system may be extended when future expansion allows, or an additional wet well can be installed and interconnected should future flows dictate additional wet well storage. The stub out shall be at least as large as the influent pipe, sized for the ultimate basin flow.
- H. All sewer lift stations shall have additional wet well storage for a total capacity of at least three hours at the design flow rate. Storage volume shall be calculated between the high-level alarm and the lowest point of overflow (including basement elevations regardless of backflow valves in service lines). Storage may consist of any combination of line capacity, manhole capacity, and wet well volume. No corrugated metal pipe may be utilized for storage.
- I. Wet wells shall be a minimum of 6-feet in diameter, or a minimum of 6-feet on each side, if not cylindrical. Wet wells shall be constructed of reinforced concrete; precast concrete may be used on wet wells for smaller pump stations.
- J. The interior of the wet well shall be protected against leakage and corrosion. If precast concrete is used, the joints shall be sealed to prevent infiltration and inflow. All exposed concrete and piping shall be epoxy coated. Epoxy coating shall conform to the specifications below. All guide rails, brackets, connectors, pump pull chains, etc. shall be stainless steel to resist corrosion.

Standard Epoxy Coating shall be a 100% solids, solvent-less two-component epoxy resin-coating system with increased bond strength and broad range chemical resistance. Apply a maximum of 40 mils in two applications over a smooth horizontal, vertical or overhead surface. The coverage will vary from 30 to 60 mils depending on the application.

In lieu of an epoxy coating, the wet well may be constructed of steel reinforced polymer concrete. Construction, installation, and testing shall be in accordance with the following standards, including but not limited to ASTM D 6783, ASTM C 478, ASTM C 443, ASTM C 923, ASTM C 33, and ASTM C 497.

- K. The top of the wet well shall contain a lockable aluminum hatch cast into the top. The pump manufacturer shall specify the size of the wet well hatch. The top of the wet well shall extend 6" above finished grade.
- L. Wet wells shall be provided with a positive ventilation capacity of 30 air changes per hour based on the wet well volume below grade and above the minimum wastewater level.
- M. Pumps must be submersible pumps as manufactured by FLYGT, unless otherwise specified by the City. FLYGT N-series pumps shall be used when available.

FLYGT C-series pumps shall be used when the N-series is not available. Pumps shall be constant speed and self-sealing with stainless steel guide rail systems. All pump motors shall be three phase.

- N. Pumps and motors shall be sized to handle twice the design peak flow of the proposed development (but not less than the total of the proposed development plus any existing development tributary to the lift station) or the total upstream watershed, whichever is less. Pumps shall be sized when possible so that ultimate basin flow conditions can be achieved by increasing impeller size. In any case, a minimum of two pumps shall be located in the wet well, each sized such that if one pump fails, the remaining pump(s) can handle peak flow.
- O. Provide factory test, startup by a supplier authorized by the manufacturer, and on-site testing of the system.
- P. Provide spare parts as recommended by the manufacturer and required by the City.
- Q. All lift station site lights shall be LED type lighting fixtures.
 - i. Valve Vault and Force Main Requirements
 - a. The discharge piping from each pump shall be routed through the valve vault with check valves and shutoff valves on horizontal stretches of pipe. Check valves shall be placed upstream of shutoff valves. Connection of the discharge pipes should be accomplished outside and downstream of the valve vault.
 - b. Valve vaults, including walls and floor and top slab, shall be constructed of reinforced concrete; precast concrete may be used on valve vaults for smaller pump stations.
 - c. Either a round or square vault can be used to contain the check valves and shutoff valves. The vault shall be bedded on a minimum 12" of #57 stone. The top of the vault shall contain a minimum 30" by 30" aluminum lockable lid cast into the top, which shall extend 6" above finished grade.
 - d. The floor of the valve vault shall be sloped to a sump to collect water. A drain shall be provided in the sump, routed to the wet well with a backwater valve to prevent hazardous gases from entering the vault and flooding of the vault, respectively. The backwater valve shall be accessible for cleaning.

- e. All force mains and fittings shall be ductile iron pipe per AWWA standard C151. All force main pipe and fittings shall have ceramic epoxy lining such as Protecto 431™ or approved equal. Force main and fittings shall be installed per AWWA standards. All bends, tees and crosses shall be blocked or restrained. All fittings outside the wet well and valve vault shall be mechanical joints. All fittings inside the wet well and valve vault shall be flange-to-flange joints. Air release valve locations and sizes shall be as required by the City. Air release valves shall be installed in all high points and other areas as required by the City.
- f. The force main shall be sized for a minimum of two feet per second flow with the pump station operating at minimum flow. Force main piping shall be at least 4-inches in diameter. Class of pipe shall be as required for working pressure plus surge pressure and as directed by the City. Sewer force mains shall have a minimum of 4 feet of cover.
- g. A connection for a quick-connect bypass pump shall be provided in case of complete station failure. The bypass connection shall be located in the single force main, downstream of where the pump discharges tie together. Plug valves shall be provided immediately upstream of the bypass connection to isolate the station during bypass and on the bypass branch to isolate the bypass connection during normal station operation.
- h. Surge valves shall be utilized when force main surges are in excess of 150 psi. Surge valves shall be mechanical and shall be field adjustable from 0 to 100% of the rated pressure capacity.
- i. Weighted arm, cushion swing check valves shall be used on the pump discharge as directed by the Authority. Pump check valves shall have adjustable rapid closure in the event of power failure.
- j. Shutoff valves shall be either ball valves or plug valves, as determined by the City.
- k. Air release valves shall be manufactured by Crispin, A.R.I., H-TEC, or approved equal. Air release valves shall be stainless steel or plastic, or have an epoxy coating both inside and outside.
- l. Air release valves shall be installed in minimum 4-foot diameter manhole on 6-inches of #57 stone with an additional 6-inches of #57 stone inside manhole; bolt-down frame and cover cast into flat manhole top, flush with finished grade. Install a 2-inch wheel or ball valve between force main and air release valve.

- m. All fittings, such as valves, nipples, unions, and tapping saddles, for air release valves shall be stainless steel.
- n. An odor control unit shall be installed with the air release valve on all force mains 8-inches or larger. The unit shall connect directly to the air release valve and contain carbon or other suitable media for scrubbing of hydrogen sulfide gas. The unit shall be constructed of stainless steel or plastic, or have an epoxy coating both inside and outside.
- o. Check valves shall be GA Industries or Val-Matic, or approved equal.

ii. Electrical Requirements

- a. Electrical service to lift stations shall be three phase.
- b. Dual electric feeds are preferred at wastewater lift stations. If dual feeds are available, they shall be provided from the utility grid. If dual feeds are unavailable, a letter of exception must be obtained from City.
- c. The electrical service pole with meter shall be located outside the fence with underground feeder to electrical distribution.
- d. The lift station shall have a fused disconnect.
- e. The security light shall be directional style and wired to a switch or breaker inside the pump control panel. The light shall be a sodium vapor light with 150-watt high-pressure luminaire with 120-volt ballast, photoelectric control, and heat and impact resistant lens.
- f. For pump stations with pumps in excess of 88 hp, motor starters, motor control centers, and miscellaneous electric controls shall be housed in a building. Building architecture shall be per the requirements of the City. Pump control panels for stations below 88 hp shall be in accordance with the Control Panel section below.
- g. Pump controls shall be Multitrode with Square D components. Power for the pump controls, alarms, and telemetry shall be provided by a minimum 5 KVA uninterruptible power supply. Electrical equipment and controls shall be furnished with surge arresters for protection against surges caused by lightning or

switching. Reference the Control Panel section below for additional information.

- h. Pump power cables shall enter the wet well above the force main and behind the pump guide rails.
- i. Lift stations shall have telemetry installed to monitor power failure, high wet well pump failure and other sensing points as required by the City. Reference the Control Panel section below for additional information.
- j. All wet wells with a water depth of 15 feet or less shall have a 2-meter probe. All wet wells with a water depth greater than 15 feet shall have a 3-meter probe.
- k. The level control systems, telemetry and generator, and all associated equipment shall be of a brand, type, and configuration acceptable to the City and compatible with the City's existing sewer lift stations.
- l. Provide spare parts as recommended by the manufacturer and required by the City.
- m. An arc flash analysis shall be performed on all electrical equipment greater than 50 volts in accordance with NFPA 70E, latest edition. Said equipment shall be labeled per the results of the analysis. A written report with the analysis results shall be provided to the City.

iii. General Control Panel Requirements

- a. These control panel specifications shall be applicable for all lift stations up to and including 88 horsepower. Lift stations greater than 88 horsepower are considered a special circumstance by the City, and the requirements thereof shall be determined by the City on a case-by-case basis and addressed in the Project Concept Meeting.
- b. The pump station shall be operated by an on-site pump control panel / motor control center (MCC) which shall initiate and terminate pump operations based on the liquid levels within the wet well while providing the station with electrical protection and information and status displays. The control system shall operate the required number of pumps as specified on the drawing with power and performance characteristics as described in full, in the associated plans. The MCC shall provide for both

manual and automatic control of the pumps to maintain a pumped down condition in the wet well. The control shall function as described below.

- c. The automatic mode shall have a primary controller, redundant high and low floats to run and shutdown the pump(s) in the event of primary controller failure, and a tertiary function provided to shut down all pumps at a low liquid level to protect the pumps from operating in a dry condition.
- d. The primary controller shall sense the liquid wet well levels through a conductance actuated probe set at a pre-determined level to initiate the lead pump on, lag pump(s) on, high-level alarm and all pumps off. The normal operation is caused by the rising and falling levels of the liquid in the wet well meeting the designated pre-determined points. The lead pump will start followed by the subsequent or lag pumps if the wet well level rises sufficiently with all pumps stopping when the wet well level falls to a low point ceasing the demand for pump operation. Upon the pumps being turned off, the controller will reset and alternate the lead pump, the former lead pump to become the new lag pump. This shall equalize the run times for all pumps.
- e. If the station inflow continues rise to the set point of the high-level, an alarm will be activated and sound continuously. A high-level alarm light will simultaneously flash. The audible and visual alarms will continue until the wet well liquid level falls below the alarm point. Note that the audible alarm may be silenced manually, but the high-level alarm light shall continue to flash until the level falls sufficiently. If the wet well level continues to rise and reaches the Hi-Hi Level float, the redundant system shall assume control of the station and shall initiate a call for the lead pump to come on, followed by an additional call for the lag pump to come on after a specified brief time delay. Both pumps shall continue to operate until deactivated by either the primary controller reassuming control or the low-level float set at a comparable low point.
- f. The control system shall be designed, approved, fabricated to either UL 508A or UL 698A standards as applicable with appropriate addenda and be assigned its individual UL certification serial number by a UL Certified panel builder for Industrial Control Panels for Hazardous Locations.
- g. The equipment and component descriptions listed below are provided as a guide and does not relieve the supplier from

providing a system that will operate as intended by the designer and required by the application. It is the supplier's responsibility to seek timely clarification on all relevant issues associated with this equipment and project.

a. CONTROL PANEL SPECIFICATIONS

- i. PUMP CONTROL PANEL / MOTOR CONTROL CENTER (MCC) ENCLOSURE: The enclosure shall be a 14-gauge, NEMA 4X rated enclosure manufactured from 304 stainless steel. The enclosure shall be a wall-mounted type with a minimum depth of 12" and sized to adequately house all components with appropriate spacing and 10% spare interior back plate space for future upgrades. The door gasket shall be of rubber composition with a retainer to assure a positive weatherproof seal. The door shall open a minimum of 180 degrees. An engraved phenolic label shall be affixed to the front of the panel describing the panel's function.
- ii. INNER DEAD FRONT DOOR: A brushed aluminum dead front shall be mounted on a continuous aircraft type hinge within the enclosure to separate operator accessible control and status functions from the live internal components and wiring within the interior compartment. It shall contain cutouts for mounted operational and status components/devices such as control switches, indicator pilot lights, elapsed time meters, a Ground Fault Circuit Interrupting Receptacle (GFCI) as well as any other devices requiring operator access as necessary. Further cutouts for breaker handles shall allow operation of breakers without entering the interior compartment. The dead front door shall open a minimum of 150 degrees to allow access to the interior compartment for maintenance by qualified personnel. A ¾" break shall be formed around the perimeter of the dead front to provide structural rigidity.
- iii. INTERIOR BACK PLATE: The back plate shall be manufactured of 12-gauge steel and shall be finished with a primer coat and two (2) additional coats of baked-on white enamel. All hardware mounted to the back plate shall be attached with 304 stainless steel machine screws and threaded and tapped holes. Sheet metal screws are not acceptable. All devices shall be permanently labeled and identified with engraved phenolic labels adhered to the back plate at locations easily identifying the component.
- iv. CONTROL PANEL IDENTIFICATION: An engraved phenolic label shall be affixed to the front of the Inner Dead Front Door and shall include the following information:

- a. Project Name
- b. Control Panel Serial Number
- c. Pump Manufacturer, Model, and Impeller Code and/or Trim
- d. Pump Horsepower and Full Load Amps at Rated Voltage
- e. Incoming Power Voltage, Phase and Frequency
- f. Pump Control Panel (MCC) Manufacturer

b. CONTROL PANEL POWER DISTRIBUTION

- i. The panel's service power distribution shall include all necessary components and be completely wired with stranded, tin-plated, machined-tooled copper conductors rated at 90 degrees C. All conductor terminations shall be easily accessible and as recommended by the device manufacturer. All control conductors shall be identified with wire markers at each end, as close as practical to the end of the conductor.
- ii. **CIRCUIT BREAKERS:** All circuit breakers shall be Square D Type FAL, KAL, LAL, or MAL, depending on applicable current requirements, heavy-duty thermal magnetic molded case circuit breakers or motor circuit protectors and shall be permanent trip, UL Listed, CSA Certified, IEC Rated and shall meet the requirements of Federal Specification Number W-C-375B/GEN. Each motor breaker shall be adequately sized to meet the pump motor operating characteristics and shall have a minimum of 14,000 amps interrupting capacity at 480 VAC. Heavy-duty circuit breakers shall be used to protect the control circuit.
- iii. **TRANSFORMERS:** Control transformers (5 KVA minimum) shall be UL Listed and shall be used to produce the 120 VAC and/or 24 VAC for control pilot circuits. The transformers shall be fused on both the primary and secondary circuits. The secondary circuits shall be grounded. Transformers shall be sized to provide for internal control pilot circuit use and to provide for a convenience utility outlet (20 Amp single-pole), a SCADA (RTU) circuit (15 Amp single-pole), area lighting (15 Amp single-pole) and a spare 20 Amp single-pole circuit breaker. On installations with a permanent stand-by generator there shall be a 20 Amp single-pole circuit breaker for a block heater (within the generator) and a 20 Amp single-pole circuit breaker for a battery charger (within the generator).
- iv. **MOTOR STARTERS (ACROSS-THE-LINE) REQUIRED FOR LESS THAN 30 HP PUMPS:** Motor starters shall be UL Listed open

frame, across-the-line, NEMA rated with individual overload protection in each leg. If one leg opens, all legs must open. Motor starter contacts and coil shall be replaceable from the front of the starter without removal from its mounted position. Overload heaters shall be block type, utilizing melting alloy spindles and shall have visual trip indication. Overloads shall be sized for the full load amperage draw of the pumps. Adjustable type overloads, definite purpose contactors, fractional size starters and horsepower rated contactors or relays shall not be acceptable.

v. MOTOR STARTERS (SOLID-STATE REDUCED VOLTAGE)
REQUIRED FOR 30 HP PUMPS AND ABOVE:

- a. Motor starters shall be UL Listed solid-state reduced voltage (SSRV) starters. The SSRV shall include a digital keypad for adjusting the soft starter parameters, viewing process values and motor and soft starter status.
- b. The motor shall be automatically protected from solid-state component failure by an isolation contactor that opens when the motor is stopped or when the controller detects a fault condition, including a shorted silicon control rectifier (SCR). The SSRV shall utilize an SCR bridge consisting of at least two (2) SCR's per phase to control the starting and stopping of the pump motors.
- c. The soft start shall provide torque control for linear acceleration independent of motor load or application type without external feedback. The gating of the SCR's shall be controlled in such a manner as to ensure stable and linear acceleration ramp. The soft starter shall be controlled by a microprocessor that continuously monitors the current and controls the phasing of the SCR's. Analog control algorithms shall not be allowed.
- d. The SSRV shall automatically and continuously adapt for operation at 60 Hertz with a frequency tolerance of +/- 5%. By configuration, it shall be capable of operation at a varying supply line frequency of +/- 20% during steady state operation. Further, the soft start shall be capable of supplying 400% of rated full load current for 23 seconds at maximum ambient temperature and of 10 evenly spaced starts per hour at 400% of full rated current for 12 seconds per start.
- e. The SCR's shall have a minimum Peak Instantaneous Voltage (PIV) rating of 1800 VAC. Lower rated SCR's with Metal Oxide Varistor (MOV) protection are not acceptable. All programming / configuration devices, display units and field control wiring terminals shall be accessible on the front of the control module. Exposure to control circuit boards or electrical power devices during routine adjustments is prohibited.

iv. Control Panel Operating System.

- i. Each pump shall have a three-position Hand/Off/Automatic (HOA) switch mounted on the dead front door for the selection of the operational mode of each pump. The "Hand" position will be an operator selected means of manually turning the pump on, the "Off" position will be an operator selected means of manually turning the pump off and making the pump unavailable for automatic running and the "Automatic" position shall place the pump in the automatic control of the MultiSmart pump controller. The switches shall be NEMA 4X rated with 10 Amp contacts and be labeled by a position indicating legend plate.
- ii. In summary, in the Hand position the operator may run the pumps in the manual mode, by-passing all other automatic features of the controller except final dry pit shutdown for reduced amps draw indicating a lack of fluid at the impeller and/or shutdown on moisture/temperature alarm. The Off position will render the pump non-responsive to any call for operation until switched to either the manual hand or automatic modes. The automatic position will cause the pump(s) to operate or stop at the demands of either the probe, as further described below, or redundant floats. There shall be a low float to shutdown all pumps when the wet well level falls below the predetermined elevation of the low float. There shall also be a high float to run all pumps, with a predetermined time delay between the starting of pumps, when the wet well level rises above the predetermined elevation of the high float. This high float shall also initiate the "Wet well Hi-Hi Level" alarm.
- iii. A UL Listed MultiSmart pump controller by MultiTrode shall be provided to operate the system based on conductance actuated by the wet well liquid level utilizing a single piece multi-sensored probe interfacing with intrinsically safe barriers for pump operation and level alarms. This controller shall be the primary controller for the pump station.
- iv. The controller is a self-contained device and shall monitor and control the operation of all pumps and alarms. Status information for the pumps, pump fault status, mode of operation, next pump to start status and level alarms shall be clearly indicated on the front display.
- v. The controller shall allow all essential operating parameters to be adjusted via the front keypad or via a communication port as a connection link to other MultiTrode equipment or other "smart" monitoring and control equipment either on or off the station site. These parameters shall include setting levels, time delays, probe sensitivities, pump alternation, hand-off-automatic selection and fault resets. Level information is accepted from a MultiTrode probe or an analog device as either 4-20 mA or 0-10 V and the controller keypad can be disabled to prevent unauthorized keyboard entry.
- v. Control Panel Ancillary Equipment.

- a. **ELAPSED TIME METER:** Individual pump UL Listed 120 VAC non-resettable elapsed time meters (6 digit and tenths) shall be mounted on the dead front door to indicate and record the number of each pump's running hours.
- b. **SYSTEM STATUS INDICATORS:** Indicator lights shall be mounted on the dead front door and include the following:
 - i. Green – Pump Run, individual lights to indicate pump has been called to run.
 - ii. Red – Pump Fault, individual lights to indicate the pump has failed for whatever reason.
 - iii. White – Power On indicates power is on to the MCC.
 - iv. Amber – Hi-Level or Hi-hi Level Alarm Light.
- c. **MOTOR THERMAL SENSORS AND SEAL LEAKAGE MONITORING:** The MultiSmart pump controller shall monitor the embedded motor thermal sensors and pump seal leakage sensors when available within the pump. The circuitry shall operate on the current sensing principle whereby any changes reflecting high motor temperature or fluid intrusion into the pump will either stop or prevent the pump from starting. An illuminated light on the controller shall indicate the failure mode and the status will be sent to the SCADA through connections to the external contacts provided for the SCADA. The status of the pumps shall be indicated by LED lights on the face of the controller, as status indicator lights on the dead front door and by signal to the dry contacts for the remote SCADA system.
- d. **VISUAL AND AUDIBLE ALARM SYSTEM:** All alarm components shall be UL Listed. High wet well level conditions shall be sensed by either the primary probe sensors or the redundant Hi-hi Level float, which shall cause the alarm light and the alert horn to come on. The alarm light shall be a MCC externally top-mounted weatherproof, shatterproof, flashing red light fixture with a 130 VAC incandescent 40 Watt bulb, which shall flash until the alarm condition ceases. The alarm horn shall emit a sound of not less than 90 db at 10 feet and shall have a manual silence switch, in order for the operator investigating the alarm condition to silence the alarm horn.
- e. **CONDENSATE HEATER:** An internal UL Listed 100-watt 120 VAC condensate heater recognized for industrial control panels shall be provided to minimize condensation within the control panel. The heater

shall be thermostatically controlled to maintain the temperature above the dew point.

- f. VENTILATION FAN: Adequate ventilation fan(s) shall be provided for all MCC's. The fan shall be a UL Listed 120 VAC NEMA 4X stainless steel device, suitably sized to maintain temperatures below the maximum recommended by the transformer, VFD, and/or SSRV manufacturer.
- g. OPERATOR'S TROUBLE LIGHT: An internal UL Listed fluorescent trouble light 120 VAC sized appropriately for the enclosure size shall be installed to illuminate the interior compartments of the enclosure and shall operate via a micro switch so that when the dead front door is opened, the interior compartment is illuminated automatically.
- h. SCADA INFORMATION FOR REMOTE MONITORING: Separate dry contacts shall be factory wired to individual terminals to provide operational information and status data to the remote off-site SCADA system. The following contacts shall be provided as a minimum:
 - i. Pump Status (Individual Alarms for Each Pump)
 - ii. Pump Run
 - iii. Pump Overload
 - iv. Pump Seal Leakage Alarm
 - v. Pump Soft Start Starter Failure (if used)
 - 1. Power Status
 - (i) Phase Loss
 - (ii) Normal Power Failure
 - 2. Generator Status
 - (i) Generator Run
 - (ii) Emergency Power (Transfer Switch Activation)
 - (iii) Generator Common Alarm (to be wired to all additional generator alarms)
 - 3. Alarm Status

- (i) Wet well Hi-Level
- (ii) Wet well Hi-Hi Level
- (iii) Pump Station Disabled

- i. **LIGHTNING ARESTOR:** The lightning arrestor shall be UL Listed and meet the requirements of NEC Article 280, ANSI/IEEE C62.41-1991 as an appropriate 3 phase service device with a maximum 600 Volt phase to ground rating.
- j. **LIGHTNING TRANSIENT PROTECTION:** Each complete suppression device shall be rated at 650 VAC phase-to-ground maximum and be UL listed as a secondary surge arrestor, bear CSA certification and meet both the standards of ANSI/IEEE C62-11-1987 NEC Article 280 for suitability in indoor and outdoor applications and service entrance locations. It shall be selected for proper operation based on the full load capacity of the MCC and operate at a speed and of sufficient capacity to protect the MCC and associated equipment in case of lightning-transient/power surges.
- k. **PHASE MONITOR:** A UL Listed, line voltage rated, adjustable, phase monitor shall be installed to sense high and low voltage, loss of power, phase reversal and loss of phase and shall indicate which fault has occurred. The self-indicating phase monitor shall provide troubleshooting analysis of the MCC service power via red, green or flashing lights, with a legend printed on the front of the device. The control circuit shall de-energize upon sensing any of the faults and shall automatically restore service upon return to normal power. An auxiliary dry contact shall be provided for SCADA indication.
- l. **WET WELL LIQUID LEVEL SENSORS:** For the purposes of standardization and appropriate interface with the MultiSmart primary controllers and redundant devices, all conductivity probes or pressure transducers (MTPT) shall be as manufactured by MultiTrode, Inc of Boca Raton, FL. All liquid level floats shall be as manufactured by ITT Flygt Corporation of Trumbull, CT. Cable lengths shall be as shown on the plan drawings and as confirmed by the written specifications with a minimum of 10-feet of additional cable for field connection and fit.
- m. **PORTABLE GENERATOR (BY OTHERS) REQUIREMENTS:**
 - i. Main and emergency breakers shall be interlocked using a walking beam type interlock. While both breakers may be in the "off" position at the same time, the walking beam shall not allow both breakers to be in the "on" position simultaneously.

- ii. The MCC shall have a UL Listed emergency generator receptacle mounted to the right-side exterior of the MCC enclosure and shall, for standardization purposes, be as manufactured by Crouse Hinds, Model AR1042 (100 Amp, 480 VAC/230 VAC) or AR2042 (200 Amp, 480 VAC/230 VAC).
- n. **PERMANENT GENERATOR REQUIREMENTS:** The Automatic Transfer Switch shall be located outside of the MCC enclosure for any pump station with a permanently installed, stand-by generator and shall be provided by the generator supplier. Generator status indicators shall be provided by the MCC manufacturer as previously described.
- o. **CONTROL PANEL MISCELLANEOUS REQUIREMENTS**
 - 1. **DRAWINGS:** A final, Record schematic drawing encapsulated in clear self-adhesive laminating plastic shall be affixed to the inside of the front outer door with defining legends as well as other required and appropriate information, warning stickers and UL Certification Serial Number.
 - 2. **PRE-SHIPMENT FACTORY QUALITY ASSURANCE TESTING:** All pump station control panels (MCC's) shall be tested on the designated service power for all specified functions to the maximum extent practicable in the manufacturer's shop prior to shipping to assure proper operation and integrity of the MCC. The owner may elect to be present during such testing and shall coordinate such with the manufacturer if desired.
 - 3. **FIELD START-UP OF PUMP STATION:**
 - i. The contractor shall coordinate and provide assistance as necessary to the pump manufacturer or their designated representative, the generator supplier or their designated representative and the MCC manufacturer for field start-up of the station at an appointed time with appropriate supervision by the owner.
 - ii. No pump shall be started without the express approval of the on-site pump representative and no power shall be applied to the MCC for the purposes of operating the pump(s) without the express approval of the on-site MCC manufacturer representative and no generator power shall be applied without the express approval of the generator supplier.
 - iii. A start-up report shall be written and forwarded to both the contractor and owner within ten (10) business days of the final

start-up activity approving the successful installation and start-up operation of the pump station.

- p. The MCC manufacturer shall provide operation and maintenance training to the operators available or as otherwise arranged by the contractor on behalf of the owner and shall turn over a minimum of three (3) sets of O & M manuals to the senior owner representative present.
- q. MANUFACTURER'S WARRANTY: The manufacturer of the MCC shall warrant the control for design, materials and workmanship for a period of five (5) years from the date of shipment. Such warranty is limited to repair or replacement as necessary for the proper operation of the pump station and as determined by the manufacturer and does not provide for alterations, modifications or interference by others, negligence, willful destruction or misuse or acts of God.
- r. PUMP CONTROL PANEL /MOTOR CONTROL CENTER (MCC) MANUFACTURER: The MCC manufacturer shall be currently certified by Underwriter Laboratories, Inc. as a UL 508A and UL 698A control panel shop for the design and fabrication of Industrial Control Panels for Hazardous Locations and shall be approved to certify, assign and affix individual UL serial numbers for each control built to applicable UL standards with appropriate addenda. The control manufacturer shall further be UL 914A approved to field configure, adapt and modify non-UL controls to UL standards suitable for field certification, assignment and affixing of an individual UL serial number.
- s. STORAGE: All pump control panels shall be stored on pallets and out of all possibility of sustaining weather-related damage from wind, snow, ice, rain, lightening or other unforeseen incidences which may allow damage such as vehicular traffic, construction, vandalism, tampering or curiosity.
- t. GROUNDING: The MCC shall be grounded in accordance with Article 250 of the National Electric Code with no deviations permitted.
- u. WIRE CONDUITS: Pump power cables shall be run in conduit separate from conduit containing cable from the sensors (probes, floats or transducers). Conduits shall be appropriately sized, planned and installed to protect the cables entering the wet well and to allow easy replacement of the sensors and cables if necessary. Conduit entry into the MCC enclosure shall use "seal offs" to prevent gas or moisture intrusion from the wet well.

1. Generator Requirements

- i. All sewer lift stations shall have a standby electrical generator with an electronic transfer switch that will automatically switch the station to generator power when the electric utility power system fails. The generator shall self-test at least once per week. Telemetry is required on all lift stations regardless of basin and shall monitor the status of the generator.
- ii. The standby generator shall be commissioned in accordance with NFPA 110 Standards. Provide factory test, startup by a supplier authorized by the manufacturer, and on-site testing of the system.
- iii. The generator shall be housed in a weatherproof enclosure. Quiet site soundproofing shall be provided to reduce noise to 70 db at a distance of 7 meters for diesel powered generators.
- iv. The entire standby generator set shall be warranted for a period of five years from the date of commissioning.
- v. Outdoor weather-protective housing with critical grade exhaust muffler shall be installed. The housing shall have hinged side access doors and a rear control door. All doors shall be lockable. All sheet metal shall be primed for corrosion protection and finish painted with the manufacturer's standard color. Vibration isolators as recommended by the generator set manufacturer shall be provided. The generator must be mounted far enough away from obstructions to allow all doors to be opened 90°. All conduits and gas lines shall be installed underground. Equipment shall be installed on concrete housekeeping pads. Equipment shall be permanently fastened to the pad in accordance with manufacturer's instructions and seismic requirements of the site.
- vi. Generator shall be supplied with all auxiliary systems necessary for operation (i.e. batteries, battery charger, block heater, etc.).
- vii. Engine mounted, thermostatically controlled, coolant heater(s) shall be required for each engine. Heater voltage shall be as required by the manufacturer. The coolant heater shall be UL499 listed and labeled.

- a) The coolant heater shall be installed on the engine with silicone hose connections. The coolant heater installation shall be specifically designed to provide proper venting of the system. The coolant heaters shall be installed using quarter turn ball valves to isolate the heater for replacement of the heater element. The quarter turn ball valves shall allow the heater element to be replaced without draining the engine cooling system or significant coolant loss.
 - b) An AC power connection box shall be provided for a single AC power connection to the coolant heater system.
 - c) The coolant heater(s) shall be sized as recommended by the engine manufacturer to warm the engine to a minimum of 100°F (40°C) in a 40°F ambient, in compliance with NFPA 110 requirements, or the temperature required for starting and load pickup requirements of the particular lift station.
- viii. The generator set shall operate at 1800 rpm and at a voltage of as specified by the Authority. The power supply shall be three-phase, four-wire, and 60 hertz. Voltage regulation shall be plus or minus 1.0 percent for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 percent. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with any steady load from no load to full load shall not exceed plus or minus 0.25%. An electronic governor system shall provide automatic isochronous frequency regulation.
- ix. The generator set shall be provided with a mounted main line circuit breaker, sized to carry the rated output current of the generator set on a continuous basis.
- x. The standby power system shall include an automatic transfer switch. Transfer switch shall be rated for 100% of full load. This switch shall be provided with indicators for all phases of operation and be equipped with a fully programmable timer for exercising the equipment. The switch must be selectable for load or no load. The switch

shall be configured with in-phase transition or neutral delay.

- xi. The generator shall be load tested at 100% full load on site for a period of four hours using resistive load banks. Notify Cityinspector prior to test, and provide certification letter from the manufacturer.
- xii. Three complete sets of O & M manuals and keys shall be provided for the generator and the automatic transfer switch.
- xiii. The generator control system must include a programmable control device to allow automatic start-up and test functions. Test functions can be programmed for daily, weekly or monthly testing. Connections for remote monitoring of function and failure must be provided.
- xiv. Pump stations are required to have continuous standby power. All generators shall be diesel powered with 100 gallons minimum fuel storage capacity or 24-hour operating time, whichever is greater. Fuel storage shall be accomplished by the use of corrosion-resistant double wall sub-base fuel tank only, no underground storage will be allowed. A leak detection device shall be provided in the interstitial space for sensing fuel leakage. The device contact shall be connected to the generator control panel terminals for telemetry. Fuel containment and spill prevention, if needed, shall conform to the Georgia Environmental Facilities Authority and US Environmental Protection Agency requirements. A Spill Prevention, Control, and Countermeasure (SPCC) plan shall be prepared in accordance with Code of Federal Regulation (CFR) 40, Part 112.
- xv. Consideration of an engine driven pump or standby pump station in lieu of a generator will be considered on a case-by-case basis at the sole discretion of the Authority.
- xvi. Generators can be obtained from the following manufacturers/representatives:
 - a) Caterpillar
 - b) Cummins-Onan

c) MTU Detroit

15. The generator set shall be serviced by a local service organization that is trained and factory certified in generator set service. The supplier shall maintain an inventory of critical replacement parts at the local service organization, and in-service vehicles. The service organization shall be on call 24 hours per day, 365 days per year.
16. The generator manufacturer shall provide a 60-month comprehensive warranty to include parts and labor. The warranty shall be comprehensive. No deductibles shall be allowed for travel time, service hours, repair parts cost, etc.
17. Transfer switches shall be in NEMA-4X enclosure obtained from the following manufacturers/representatives:
 - a) Cummins-Onan
 - b) ASCO
 - c) GE Zenith
18. The transfer switches shall be configured to switch back when power is restored to the station.
19. The generator shall be installed on a suitably sized concrete pad and a generator ground grid shall be provided. The ground grid design shall be in accordance with the National Electric Code (NEC) and subject to City approval.
20. The equipment supplier shall provide training for the facility operating personnel covering operation and maintenance of the equipment provided. The training program shall be not less than 4 hours in duration. Training date shall be coordinated with the facility owner.

4. Definitions

- a. Branch Sewer – a sewer line that receives wastewater from two or more laterals, serves a relatively small area, and discharges into a trunk sewer serving one or more branch sewer areas
- b. Confluence – the intersection of two or more creeks, streams, rivers, or lakes which appear in the Authority's sewer map

- c. Design E.R.U. – the number of Equivalent Residential Units (E.R.U.) for which a lift station, gravity sewer line, and/or force main is designed and constructed
- d. Development Area – the amount of land on which development is proposed
- e. Drainage Basin – the area of land drained by a creek, stream, or river and its tributaries
- f. Extension (or Off-site Extension) – gravity sewer line which is over 1,000-feet outside the development.
- g. Gravity Sewer (or Natural Gravity Sewer) – the normal type of wastewater collection system that relies on the natural, downhill flow of wastewater through pipes constructed along drainage patterns and creeks to a wastewater treatment facility
- h. Non-Participating Development – properties proposing to convey wastewater flow to a lift station, which properties have/will not make substantial improvements to the lift station with a cost proportionate, by number of lots, to the initial cost of constructing the lift station
- i. Outfall – the largest sewer lines, usually at the lowest elevations, into which tributary sewers discharge, and which convey flow by natural gravity; also referred to as an interceptor
- j. Oversized Lines (or Upsized Lines) – gravity sewer line which is sized larger than what is necessary to serve the developed property, as defined by the Authority's Rules and Regulations
- k. Participating Development – (1) properties within the initial service area of a lift station; (2) properties outside the initial service area of a lift station which make substantial improvements to the lift station with a cost proportionate, by number of lots, to the initial cost of constructing the lift station; (3) existing homes and other existing development in a lift station initial service area
- l. Service Area – the amount of land that will naturally drain to a particular point
- m. Sub-basin – an area of land within a drainage basin that drains to a centralized location; generally, multiple sub-basins comprise a drainage basin

- n. Tributary – a body of water (creek, stream, river, lake, etc.) that feeds a larger body of water; an area of land that drains to a particular point; or a conduit that feeds a larger conduit
- o. Trunk Line – a sewer line, which serves as an outlet for a large contributing area; also called main sewer; in large systems, the principal sewer to which branch sewers and sub-main sewers are tributary and usually discharges to an interceptor sewer; in small systems, a sewer to which one or more branch sewers are tributary

8.3.03. *Information to be shown on Sewer Plans & Profiles*

- A. Project name and valid registration stamp of the Professional Engineer registered in the State of Georgia competent in the treatment of water pollution. A registered land surveyor is not acceptable. The registered Professional Engineer must stamp any plan redesigns. The registered Professional Engineer must sign across the stamp.
- B. All construction drawings submitted to the City for review shall be professionally printed (AutoCAD format or approved or equal). Hand written notes are not acceptable and will not be reviewed.
- C. Proposed service area (acres) and the population that will be served by the project.
- D. Total service area (acres) and the population that could ultimately be serviced by the project (i.e., including upstream users).
- E. Existing and future sewage flow from upstream users based on existing land use, zoning (e.g., density per acre) and future use for 20-year period.
- F. Site plan should include streets, street names, lot layout (if subdivision) or building locations (if multi-family, commercial or industrial), land lots and district, north arrow, sewer layout topography, streams, and storm drainage pipes.
- G. 100 year flood plain.
- H. Pipe location, size, flow direction, and grade.
- I. Manhole location, size, identification, and elevation.
- J. Service location, size, tracer peg location, and elevation.
- K. Type of material to be used for pipe, manholes, etc.

- L. Location and size of existing sewer lines within 1,000 feet of the project.
- M. The nearest existing sanitary sewer manhole on existing sewer line.
- N. Other utilities in areas of potential conflicts.
- O. Existing ground elevation relative to proposed sewer line.
- P. Proposed tie-in with existing lines.
- Q. Thrust blocks shall be designed by Professional Engineer licensed in the State of Georgia.
- R. Twenty-foot permanent easements if the sewer line crosses private property. More easement area may be required as deemed necessary by the Authority.
- S. Plan and profile scales shall be:

Vertical: One inch = 5 feet or 1 inch = 10 feet
Horizontal: One inch = 20 feet or 1 inch = 50 feet

- 1. Sheet size is 24 inches x 36 inches. "Half-size" drawing sets will not be reviewed and will be returned to the owner/developer.
- 2. Effect on existing or proposed pumping station produced by the proposed development. Lift stations must be shown on the drawings indicating recorded easements for roads, fences with gates and wash down potable water/backflow preventer, and telemetry system.
- 3. A recorded easement for further extending sewer lines in order not to impact neighboring property owners must be shown on all drawings.
- 4. The following notes shall be required on all drawings submitted to the Authority:
 - a. All water mains and sanitary sewer construction shall conform to City of Temple standards and specifications, latest edition.
 - b. Notify the City of Temple at least 72 hours prior to beginning of construction on water and sewer. An inspector will be assigned and a pre-construction meeting scheduled at this time.

- c. Record drawings shall be field verified and stamped by a Professional Engineer or land surveyor licensed in the State of Georgia.
- d. Reserved
- e. Contractors have the responsibility to assure erosion control of all City easements, particularly when these easements are in close proximity of drainage easements. See the assigned City inspector for details.
- f. The contractor shall comply with all Utilities Protection Center requirements.

5. Additional items may be requested if deemed necessary by the City.

Section 8.3.04. *Information to be Included in Lift Station Plans, Reports, & Specifications.*

- A. Design and Operational Information shall be submitted on paper 8½ inches by 11 inches, with oversized foldout sheets as appropriate, and shall contain, at a minimum, the following components:
 - 1. Title page, including project name and date, correlating with the design drawings
 - 2. Location map showing:
 - a. Property lines, lot lines, building locations, roads, etc.
 - b. Lift station
 - c. Influent sewers and manholes
 - d. Force mains
 - 3. Basin Assessment including:
 - a. Identification of land area in the basin tributary to lift station
 - b. Breakdown of acreage in basin according to existing land use
 - c. Breakdown of acreage in basin according to projected to future land use
 - 4. Average and peak flow calculations, for immediate and future conditions

5. Force main sizing calculations
 6. Individual pump and system performance head and flow curves
 7. Static head and total dynamic head calculations at a range of wet well levels and pumping rates
 8. Net positive suction head available (NPSHA) calculations
 9. Pump cycle time and wet well sizing calculations
 10. Efficiency and power calculations
 11. Hydraulic transient analysis (if required)
 12. Standby generator sizing calculations
- B. Design Drawings shall be submitted on sheets 24 inches by 36 inches, and shall contain, at a minimum, the following components:
1. Title page
 2. Development plan showing location of:
 - a. Property lines, lot lines, building locations, roads, etc.
 - b. Lift station
 - c. Influent sewers and manholes
 - d. Force mains
 3. Lift station site layout showing:
 - a. Property boundary
 - b. Location of structures
 - c. Fence lines
 - d. Roadways and drives
 - e. Easements and rights-of-way
 - f. Pipelines and other utilities

- g. Topographic contours
 - h. 100-year flood elevation
 - i. Floodplain areas
 - 4. Plan and elevation views of structures including:
 - a. Wet well
 - b. Valve vault
 - c. Electrical building, if required
 - 5. Mechanical design drawing(s) showing:
 - a. Plan and profile views of pumps
 - b. Pipe sizes
 - c. Pipe supports
 - d. Valves, couplings, taps, and other appurtenances
 - e. Equipment size, manufacturer, and model number
 - 6. Plan and profile views of gravity sewers and force mains leading to and from the lift station
 - 7. Electrical design drawing(s) showing:
 - a. Incoming power supply
 - b. Control panel, lighting panel, distribution diagram
 - c. Telemetry
 - d. Auxiliary power
 - 8. Structural, mechanical, electrical, and architectural details, including applicable Authority standard details, for all structures and equipment
 - 9. Landscaping plan
- C. Technical specifications for all elements of construction and equipment to be installed as part of the lift station shall be submitted. The specifications document

shall be submitted on paper 8½ inches by 11 inches and should have a title page that correlates with the design drawings. The name, manufacturer, and model number for all equipment should be included along with a spare parts list. Operation and maintenance manuals are required for all major pieces of equipment specified.

Section 8.4. Design Standards- Storm Water.

City of Temple design and construction standards shall be applicable to all land development, including private estates. The stormwater management system design and hydrology study shall comply with the Georgia Stormwater Management Manual.

8.4.01. General Requirements.

- A. A detailed Storm Water Management Report must be prepared and signed by a Professional Engineer registered in the State of Georgia. The study shall provide information on pre-developed and post-developed conditions and include computations to support the hydrology design. The plan shall also include post-construction performance of the permanent stormwater management system including structural, vegetative, and procedural controls.
- B. Stormwater system design and analysis shall be performed using the best available data, which may include current flood studies.
- C. Hydrologic Methods
 - 1. Hydrology design and runoff computations shall be based on the Georgia Storm Water Management Manual, Volume 2, latest edition.
 - 2. Modified Rational Method. Can be used to size culverts, pipes, channels, and detention structures that drain less than 5 acres.
 - 3. TR-55 Method Shall be used for detention computations and to size culverts, pipes, and channels that drain 5 acres or more.
- D. "Pre-development" means natural unimproved condition and may not represent existing conditions. Pre-developed runoff data shall not exceed the following:

Rational Method	Maximum = 0.30
Runoff Coefficient (C)	

TR-55 Curve Number (CN)	Maximum = 39 for A soils
	Maximum = 61 for B soils
	Maximum = 74 for C soils
	Maximum = 80 for D soils

Note: The referenced curve numbers correspond with "Open Space" values cited in the Georgia Storm Water Management Manual.

- E. For redevelopment projects where detention is required, the developer may pay a fee in lieu of detention provided the following conditions are met:
1. The City shall review the Stormwater Management Report submitted for the project. The downstream analysis, performed in accordance with City standards, must show no downstream impacts will occur.
 2. Water Quality may be waived, as determined on a case-by-case basis, with an additional fee in lieu of water quality at the sole discretion of the City.
 3. Channel protection requirements may be waived based on a review of the downstream analysis.
 4. The amount of impervious cover to be added or replaced must be 50% or less than the existing impervious cover.
 5. The site must be in a basin, determined by the City, which is suitable for the construction of a regional detention pond.
 6. The fee shall be in the amount required at the sole discretion of the City.
- F. For redevelopment projects, a credit will be given for existing impervious cover that is replaced with pervious vegetative cover.
- G. Catch basins with grate inlets and hoods shall be allowed in the public right-of-way only when the hooded portion alone can handle the design storm event. Calculations shall assume blinding of the grate.

8.4.02. *Pipes and Culverts.*

A. Minimum pipe size 18 inch

B. Required Pipe Material

Under Roads:

Reinforced Concrete, Ductile Iron, or HDPE*

All pipe shall be installed per GDOT specifications.

In Right-of-Way Georgia DOT pipe, including HDPE *, approved for right-of-ways with water tight connections (CMP is not allowed)

All pipe shall be installed per GDOT specifications.

Piping of Perennial or Intermittent Streams

Reinforced Concrete or Ductile Iron

- C. Otherwise Reinforced Concrete, High Density Polyethylene (smooth lined only), Ductile Iron, Bituminous Coated Hot-Dipped Galvanized Corrugated Steel, Aluminized Corrugated Steel

*Use of HDPE under roads or in the right-of-way requires certification by a Professional Engineer that the bedding, backfill, and compaction have been correctly installed. Certification shall include quality assurance test results. Certification shall be submitted to the City prior to project acceptance.

Concrete pipe shall be delivered in lengths of 8 feet or less. Corrugated pipe shall comply with Georgia D.O.T. thickness requirements. 42" – 48" corrugated steel pipe shall not be less than 14 gauge.

3. Minimum Slope: 0.50%

4. Maximum Slope: 25%

5. Additional Pipe Requirements:

<u>Slope</u>	<u>Requirements</u>
< 10%	No special requirements.
10% - 15%	Concrete collar required at the downstream manhole.
>15% - ≤25%	Concrete collar at every joint Or Watertight connections at every joint and concrete collar at downstream manhole.

D. Outlet Protection

<u>Discharge Velocity (100-yr, 24-hr storm)</u>	<u>Outlet Type</u>	<u>Protection</u>
< 5 fps	Flared End Section	Vegetation at pipe.

<u>Discharge Velocity (100-yr, 24-hr storm)</u>	<u>Outlet Type</u>	<u>Protection</u>
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5 fps – 10 fps	Flared End Section or Headwall	Reinforced vegetation at outlet using permanent erosion control matting.
> 10 fps	Headwall	Structural protection such as rock, plunge pool, slab, or baffles

E. Minimum Velocity 2.5 feet per second for 2-year flow

F. Minimum Cover

Under Roads	In accordance with Georgia Department of Transportation Standard 1030D
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Otherwise	2 feet
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G. Culvert sizing and analysis shall be performed using the best available data which may include current flood studies.

H. Sizing Criteria

Pipes, channel, ditches, culverts, and any structure that conveys concentrated flow will be sized to convey the 100-year, 24-hour storm peak flow.

Outlet protection for permanent stormwater conveyance structures shall be designed for maximum velocity.

I. When stormwater lines cross or are in close proximity to a hazardous location (i.e. gas lines), the City may require additional measures.

J. All pipes and structures installed in a permanent pond and/or through a dam shall be made of reinforced concrete. All joints shall be watertight. Pipes in a dam shall have a minimum of one anti-seep collar.

K. When a stormwater pipe discharges from a pipe to a larger size pipe, the pipe shall be installed to match the elevation of the crown of the two pipes, not the invert.

L. In residential areas, drainage pipes shall meet the material requirements for pipes under roads and be installed with watertight joints.

M. If a permanent level spreader is used to convert concentrated flow into sheet flow prior to crossing the property line, drainage easements are still required. However, on a case-by-case basis, permanent level spreaders may reduce the requirements for downstream improvements.

- N. Permanent level spreaders must be made of non-erodible materials.
- O. No concentrated stormwater shall be discharged directly onto the surface of public streets.
- P. For cast-in-place culverts, the contractor shall be on the Georgia DOT
- Q. For cast-in-place culverts, a Professional Engineer shall certify all formwork, reinforcement, and concrete placement. Certification shall include quality assurance test results. Certification shall be submitted to the City prior to project acceptance.
- R. No catch basins shall be installed at the corners of an intersection.

8.4.03. *Stormwater Pond Requirements.*

A. Sizing Criteria

Detention facilities will be sized to meet the runoff reduction, water quality, channel protection, and overbank flood protection requirements of the latest revision of the Georgia Storm Water Management Manual. Extreme flood protection shall be provided by sizing the pond to detain the 100-year, 24-hour storm without an increase in runoff rates from pre-developed condition.

- B. A fence, minimum height four feet, shall be installed around all stormwater detention ponds with slopes of 3:1 or steeper. A gate capable of being locked will be installed in the fence. The fence requirement may be waived in lieu of other safety measures when approved by the City.
- C. All walls in stormwater detention ponds constructed of non-earthen materials, such as concrete, shall be designed by a Professional Engineer licensed by the State of Georgia.
- D. A 12-foot wide access drive shall be provided to the dam from a public road or parking area. Construction plans must show drive grading and easements as needed.
- E. Pond dams shall be grassed only. No trees or shrubs shall be allowed on the dams. On interior slopes of pond, grass shall be turf type grass. Other landscaping materials may be considered on a case-by-case basis and must be approved by the City prior to planting.
- F. All stormwater detention ponds, detention structures/devices (such as for underground detention) that serve more than one lot, shall be located in a common lot within the development.
- G. For all stormwater ponds, a minimum of 1 foot of freeboard is required from the 100-year elevation to the top of the dam or wall.

8.4.04. *Runoff Reduction/ Water Quality Requirements.*

A. Runoff Reduction/Water Quality Treatment

Stormwater runoff reduction and/or water quality treatment shall be provided for the site in accordance with the requirements of the latest revision of the Georgia Stormwater Management Manual. Best management practices (BMPs) for runoff reduction and/or water quality treatment must retain onsite (Runoff Reduction) the first 1.0 inches of rainfall to the maximum extent practicable or provide an 80% reduction in Total Suspended Solids (TSS) loads from the first 1.2 inches of rainfall. On December 6, 2020, the primary method of water quality treatment will be Runoff Reduction. The City may require additional testing to demonstrate adequate removal of other pollutants of concern, including but not limited to, total petroleum hydrocarbons (TPH), heavy metals, or pesticides. State waters requiring a protected buffer shall not be used for pollutant removal.

Acceptable BMPs include:

- | | |
|--------------------------|------------------------------------|
| a. Wet Retention Ponds | g. Filter Strips |
| b. Constructed Wetlands | h. Grassed Channels |
| c. Bioretention Areas | i. Submerged Gravel Wetlands |
| d. Sand Filters | j. Gravity Separators (Oil & Grit) |
| e. Infiltration Trenches | k. Pervious Surfaces |
| f. Enhanced Swales | l. Hydrodynamic Devices |

- B. The Georgia Storm Water Management Manual "Stormwater Quality Site Development Review Tool" shall be used to demonstrate 80% removal of TSS. Results shall be shown on stormwater plans and in the stormwater management report. The "Stormwater Quality Site Development Review Tool" is available at <https://atlantaregional.org/georgia-stormwater-management-manual/>.
- C. Best management practices not specified herein may be accepted by the City after thorough review of design details. A Professional Engineer registered in the State of Georgia shall certify all such details.
- D. The City reserves the right to accept or reject the use of any proprietary device. Proprietary devices such as CrystalStream, ADS, Hancor, Bay Saver, StormCeptor, etc. may be considered if the following is submitted for review:
1. Proposed location, type of device, and target pollutants
 2. Projected treatment volumes, flows, and removal efficiencies
 3. Manufacturer supplied technical data

4. Independent-third party field test data using soils similar to those in the metro Atlanta region for the verification of removal efficiencies.
5. Reference contact information
6. In lieu of the above, evaluation of the device by the Metropolitan North Georgia Water Planning District StormWater Technology Assessment Protocol Program (STAPP) will be accepted.
7. Dumpster pads shall not discharge any pollutants or water containing pollutants directly or indirectly to the stormwater system.
8. For wet water quality ponds, detention shall be "stacked" on top of the permanent pool.
9. Water Quality best management practices and/or devices located on individual lots in residential subdivisions shall only treat runoff from the lot on which they are located.

8.4.05. *Floodplain Management.*

A. Basis for Area of Special Flood Hazard – Flood Area Maps and Studies

For the purposes of this Chapter, the following are adopted and incorporated herein by reference:

1. The Flood Insurance Study (FIS), latest edition, as amended, with accompanying maps and other supporting data and any revision thereto. For those land areas acquired by a municipality through annexation or otherwise lying in unincorporated Carroll County, the current effective FIS and data for unincorporated Carroll County are hereby adopted by reference.
2. Other studies which may be relied upon for the establishment of the base flood elevation of delineation of the 100-year floodplain include:
 1. Any flood or flood-related study conducted by the United States Corps of Engineers or the United States Geological Survey applicable to the City of Temple and/or Carroll County, Georgia; or
 2. Any base flood study authored by a registered professional engineer in the State of Georgia that has been approved by the City of Temple and/or Carroll County, Georgia, as applicable.
3. Other studies that may be relied upon for the establishment of the future-conditions flood elevation or delineation of the future-conditions floodplain and flood prone areas include:

1. Any flood or flood-related study conducted by the United States Corps of Engineers or the United States Geological Survey applicable to the City of Temple and/or Carroll County, Georgia; or
2. Any base flood study authored by a registered professional engineer in the State of Georgia that has been approved by the City of Temple and/or Carroll County, Georgia, as applicable.
4. The repository for public inspection of the flood studies, accompanying maps and other supporting data is located on the FEMA website.

B. Permit Application Requirements

1. No owner or developer shall perform any land development activities on a site where an area of special flood hazard is located without first meeting the requirements of this Chapter prior to commencing the proposed activity.
2. Unless specifically excluded by this Chapter, any owner or developer desiring a permit for a land development activity shall submit a permit application to the City on a form provided by the City for that purpose.
3. No land development permit will be approved for any land development activities that do not meet the requirements, restrictions, and criteria of this Chapter.

C. Floodplain Management Plan Requirements

1. No application for a development project within any area of special flood hazard will be approved unless it includes a floodplain management/flood damage prevention plan. This plan shall be in accordance with the criteria established in this Section.
2. The floodplain management/flood damage prevention plan must be submitted with the stamp and signature of a Professional Engineer (PE) licensed in the State of Georgia, who will verify that all designs are consistent with the requirements of this Chapter.
3. The approved floodplain management/flood damage prevention plan shall contain certification by the applicant that all land development activities will be done according to the plans or previously approved revisions. Any and all land development permits and/or use and occupancy certificates or permits may be revoked and water service may be terminated by the Authority at any time if the construction and building activities are not in strict accordance with approved plans.

4. The floodplain management/flood damage prevention plan shall include, but not be limited to, the following: plans drawn to scale of the site in question and the nature, location, and dimensions of existing or proposed structures, earthen fill placement, storage of material or equipment, and drainage and stormwater management facilities. Specifically, the following information is required:

1. Site plan, including but not limited to:

- i. For all proposed structures in the base floodplain or future-conditions floodplain, spot ground elevations at the building corners and 20-foot or smaller intervals along the foundation footprint, or 1-foot contour elevations throughout the building site;
- ii. Proposed placement of earthen fill, amount and location of excavations and storage of material and equipment;
- iii. Proposed locations of water supply, sanitary sewer, and utilities;
- iv. Proposed locations of drainage and stormwater management facilities;
- v. Proposed grading plan;
- vi. Base flood elevations or future-conditions flood;
- vii. Boundaries of the base flood or future conditions flood; and
- viii. If applicable, the location of the floodway.
- ix. Certification of the above by a registered professional or surveyor.

2. Building and foundation design detail, including but not limited to:

- i. Elevation in relation to mean sea level (or highest adjacent grade) of the lowest floor, including basement, of all proposed structures;
- ii. Elevation in relation to mean sea level to which any non-residential structure will be floodproofed;
- iii. Certification that any proposed non-residential floodproofed structure meets the criteria in this Section;
- iv. For enclosures below the base flood elevation, location and total net area of foundation openings as required in this Chapter.

- v. Design plans certified by a registered professional engineer or architect for all proposed structure(s).
3. Description of the extent to which any watercourse will be altered or relocated as a result of the proposed land development project; and all appropriate certifications required under this Chapter.
4. Hard copies and digital files of computer models, if any, copies of work maps, comparison of pre- and post-development condition base flood elevations, future-conditions flood elevations, flood protection elevations, areas of special flood hazard and regulatory floodway widths, flood profiles and all other computations and other relevant information.
5. Copies of all applicable State and Federal permits necessary for the proposed development.

D. Construction Stage Submittal Requirements

1. For all new construction and substantial improvements on sites with a floodplain management / flood damage prevention plan, the permit holder shall provide to the City a certified as-built Elevation Certificate or Floodproofing Certificate for non-residential construction including the lowest floor or floodproofing is completed. A final Elevation Certificate shall be provided after completion of construction including final grading of the site. Any lowest floor certification made relative to mean sea level shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When floodproofing is utilized for non-residential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.
2. Any work undertaken prior to approval of these certifications shall be at the permit holder's risk. The City shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being allowed to proceed. Failure to submit elevation certificates or failure to make the corrections required hereby shall be cause to issue a stop work order for the project.

E. Definition of Floodplain Boundaries

1. Studied "A""AE" zones, as identified in the FIS Flood Insurance Study, shall be used to establish base flood elevations whenever available.
2. For all streams with a drainage area of 100 acres or greater, the future-conditions flood elevations shall be provided by the Authority. If future-

conditions elevation data is not available from the Authority, then it shall be determined by a professional engineer using methods approved by FEMA and the City; the cost of which shall be paid by the applicant.

F. Definition of Floodway Boundaries

1. The width of a floodway shall be determined from the FIS or FEMA approved flood study.
2. Following the consultation meeting with the City, the boundaries or limits of the floodway shall be shown on the site plan containing existing topographic information. For all streams with a drainage area of 100 acres or greater, the regulatory floodway shall be provided by the City. If floodway data is not available from the City, then it shall be determined by a professional engineer using methods approved by FEMA and the City; the cost of which shall be paid by the applicant.

G. General Standards for Land Development

1. No development shall be allowed within the future-conditions floodplain that could result in any of the following:
 1. Raising the base flood elevation or future-conditions floodplain equal to or more than 0.01 foot;
 2. Reducing the regulatory flood storage capacity – All compensation for storage capacity shall occur between the average ground water table and the base flood elevation or future-conditions flood elevation and lie either within the boundaries of ownership of the property being developed, or within a permanent, recorded flood control easement, and shall be within a reasonable proximity to the location of the encroachment. Acceptable means of providing required compensation include: lowering of natural ground elevations within the floodplain; or lowering of adjoining land areas to create additional floodplain; or raising of the regulatory flood elevation within the boundaries of ownership of the property being developed. All cut areas are to be graded to a slope of no less than two percent (2%). In no case shall any required compensation be provided via bottom storage or by excavating below the elevation to the top to the natural (pre-development) stream channel. A step-backwater analysis will be required to determine the volume of flood storage created by raising the regulatory flood elevation;
 3. Changing the flow characteristics as to the depth and velocity of the waters of the base flood or future-conditions flood as they pass both the

upstream and the downstream boundaries of the property. Verification shall be provided via a step-backwater analysis; or,

4. Creating hazardous or erosion-producing velocities, or resulting in excessive sedimentation. In all cases, effective transitions must be provided such that flow velocities occurring on both upstream and downstream properties are not increased or decreased.
2. All proposed public utilities and facilities, such as sewer, gas, electrical, and water system, shall be located and constructed to minimize infiltration or flood damage.
3. Any significant changes or revisions to the flood data adopted herein and shown on the FIRM shall be submitted as a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Amendment (CLOMA), whichever is applicable. The CLOMR submittal shall be subject to approval by the City of Temple or Carroll County using the Community Consent forms before forwarding the submittal package to FEMA for final approval. The responsibility for forwarding the CLOMR to FEMA and for obtaining the CLOMR approval shall be the responsibility of the applicant. Within six months of the completion of construction, the applicant shall submit as-built surveys that demonstrate general conformance to the approved designs as submitted in the CLOMR application. A Letter of Map Revision (LOMR) or Letter of Map Amendment (LOMA) must be issued before the Final Plat can be approved or a Certificate of Occupancy can be issued. Significant changes or revisions shall be defined as any change to the FIRM easily observed when plotted at a scale of 1" = 1000'. The changes or revisions may be due to, but are not limited to, more current and/or superior topographic information or compensatory cut and fill grading done as part of the development.

H. Engineering Study Requirements for Floodplain Encroachments

An engineering study is required, as appropriate to the proposed development activities on the site, whenever a development proposes to disturb the base floodplain or future-conditions floodplain. This study shall be prepared by a currently registered Professional Engineer in the State of Georgia and made a part of the application for a permit. This information shall be submitted to and approved by the City prior to the approval of any permit that would authorize the disturbance of land located within the floodplain. Such study shall include:

1. Description of the extent to which any watercourse or floodplain will be altered or relocated as result of the proposed development;
2. Step-backwater analysis, using a method approved by the City. Cross-sections (which may be supplemented by the applicant) and flow information will be obtained whenever available. Computations will be

shown duplicating FIS results and will be then rerun with the proposed modifications to determine the new base flood and regulatory flood profiles;

3. Floodplain storage calculations based on cross-sections (at least one every 100 feet) showing existing and proposed floodplain conditions to show that regulatory floodplain storage capacity would not be diminished by the development;
4. If changes to the regulatory flood elevation are proposed, profiles of the channel showing the existing and proposed regulatory flood elevations must be provided; and,
5. The study shall include a preliminary plat, grading plan, or site plan, as appropriate, which shall clearly define all floodplain encroachments.

9. Floodway Encroachments

Located within Areas of Special Flood Hazard are areas designated as floodway. A floodway may be an extremely hazardous area due to velocity floodwaters, debris, or erosion potential. In addition, floodways must remain free of encroachment to allow for the discharge of the base flood without increased flood heights. Therefore, the following provisions shall apply:

- I. Encroachments are prohibited, including earthen fill, new construction, substantial improvements, or other development within the regulatory floodway, except when required for the construction of bridges, culverts, roadways, and utilities, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in any increase to the pre-project base flood elevations, floodway elevations, or floodway widths during the regulatory or base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof; and,
 1. If the applicant proposes to revise the floodway boundaries, no permit authorizing the encroachment into or an alteration of the floodway shall be issued by the Authority until an affirmative Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Amendment (CLOMA), whichever is applicable, is issued by FEMA and a no-rise certificate is approved by the City.

J. General Standards for Flood Hazard Reduction

In all Areas of Special Flood Hazard, the following provisions apply:

1. New construction of residential buildings, including manufactured homes, shall not be allowed within the limits of the base floodplain or future-conditions floodplain;
2. New construction of non-residential structures shall not be allowed within the future-conditions floodplain unless all the City's requirements are met;
3. Substantial improvements of existing structures shall be anchored to prevent flotation, collapse, or lateral movement of the structure;
4. Substantial improvements of existing structures shall be constructed with materials and utility equipment resistant to flood damage;
5. Substantial improvements of existing structures shall be constructed by methods and practices that minimize flood damage;
6. Elevated Buildings – All substantial improvements of existing structures that include any fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed to be an unfinished and flood resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.
 1. Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
 - i. Provide a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
 - ii. The bottom of all openings shall be no higher than one foot above grade; and,
 - iii. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic flow of floodwater in both directions.
 - iv. So as not to violate the "Lowest Floor" criteria of the Chapter, the unfinished or flood resistant enclosure shall only be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area; and,
 - v. The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.

7. All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is higher to prevent water from entering or accumulating within the components during conditions of flooding;
8. Manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state requirements for resisting wind forces;
9. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;
10. New and replacement sanitary sewer supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters;
11. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding; and,
12. Any alteration, repair, reconstruction, or improvement to a structure that is not compliant with the provisions of this Chapter, shall be undertaken only if the nonconformity is not furthered, extended, or replaced;
13. If the proposed development has multiple flood zones or multiple base flood elevations, the higher or more restrictive base flood elevation or future-conditions elevation and development standards shall take precedence.

K. Building Standards for Structures and Buildings Within the Floodplain

1. Residential Buildings

1. New construction. New construction of residential buildings, including manufactured homes, shall not be allowed within the limits of the base floodplain or future-conditions floodplain.
2. Substantial improvements. Substantial improvement of any existing residential structure or manufactured home shall have the lowest floor, including basement, elevated no lower than three (3) feet above the base flood elevation or one (1) foot above the future-conditions flood elevation, whichever is highest. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to equalize the hydrologic flood forces on exterior walls and to facilitate the unimpeded

movements of floodwaters shall be provided in accordance with the standards of "Elevated Buildings."

2. Non-residential buildings

1. New construction. New construction of principal buildings, including manufactured homes, shall not be allowed within the limits of the Base floodplain or Future-conditions floodplain unless all requirements of the City have been met. New construction that has met these requirements may be floodproofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be watertight to one (1) foot above the base flood elevation, or at least as high as the future conditions flood elevation, whichever is higher, with walls substantially impermeable to the passage of water and structural components having the capacity of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the designs and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the City.
2. Substantial Improvements. Substantial improvement to any existing structure located in A1-30, AE or AH zones may be authorized by the City to be floodproofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to one (1) foot above the base flood elevation, or at least as high as the future-conditions flood elevation, whichever is highest, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered Professional Engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above and shall provide such certification to the City.
3. Accessory structures and facilities. Accessory structures and facilities (i.e., barns, sheds, gazebos, detached garages, parking lots, recreational facilities, and other similar non-inhabitable structures and facilities) which are permitted to be located within the limits of the floodplain shall be constructed of flood-resistant materials and designed and constructed to pass all floodwater in a manner consistent with this Chapter and be anchored to prevent flotation, collapse or lateral movement of the structure.
4. Standard for recreational vehicles. All recreational vehicles placed on sites must either:

1. Be on the site fewer than 180 days and be fully licensed and ready for highway use (a recreational vehicle is ready for highway use (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions); or
2. Existing manufactured homes within an existing manufactured home park or subdivision shall be floodproofed as follows:
 - i. The manufactured home shall be elevated such that the lowest floor is elevated not lower than three (3) feet above the base flood elevation, or one (1) foot above the future-conditions floodplain, whichever is higher; and
 - ii. The manufactured home must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.

L. Building Standards for Structures and Buildings Authorized Adjacent to the Floodplain

All buildings shall comply with the City's building codes, in addition to the following:

1. Residential Buildings. No new residential structures may be constructed within the base floodplain or the future-conditions floodplain. For new construction, adjacent to the base floodplain or future-conditions floodplain, or substantial improvement of any existing residential building or manufactured home within a floodplain, the elevation of the lowest floor, including basement and access to the building, shall be at least three (3) feet above the level of the highest base flood (100 year) elevation or one (1) foot above the future-conditions flood elevation, whichever is higher.
2. Non-Residential Buildings. For new construction or substantial improvement of any principal non-residential building, the elevation of the lowest floor, including the basement and access to the building, shall be at least one (1) foot above the level of the highest base flood (100 year) elevation or at least as high as the future-conditions flood elevation, whichever is highest.

M. Building Standards for Residential Single-Lot Developments on Streams Without Established Base Flood Elevations and/or Floodway (A-Zones)

1. For a residential single-lot development not part of a subdivision that has Areas of Special Flood Hazard, where streams exist but no base flood data have been provided (A-Zones), the City shall review and reasonably utilize any available scientific or historic flood data, base flood elevation and

floodway data, or future-conditions flood elevation data available from Federal, State, local, or other source, in order to administer the provisions and standards of this ordinance.

2. If data are not available from any of these sources, the following provisions shall apply:
 1. No encroachments, including structures or fill material, shall be located within an area equal to twice the width of the stream or fifty (50) feet from the top of the bank of the stream, whichever is greater.
 2. In special flood hazard areas without base flood or future-conditions flood elevation data, new construction and substantial improvements of existing structures shall have the lowest enclosed area (including basement) elevated no less than the three (3) feet above the highest adjacent grade at the building site. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided.

N. Building Standards for X Zone Areas

1. Located outside of A Zones and AE Zones, X Zones include the following:
 1. Areas outside the 100-year floodplain but within the 500-year floodplain as determined by a detailed study (spotted X Zones).
 2. Areas outside the 500-year floodplain as determined by a detailed study.
 3. Areas that have not been studied.
2. The City reserves the right to require further studies for any development within an X Zone if there is evidence that a potential flood hazard exists. Such evidence may include but shall be limited to :
 1. Eyewitness reports of historic flooding or other reports of historic flooding deemed credible by the City.
 2. Geologic features observed that resemble floodplains (such as flat areas along stream).
 3. Proximity to manmade or natural constrictions such as road crossings that can cause backwater effects.
 4. Drainage basin characteristics such as drainage area, slope, percent impervious cover, land use, etc.

3. For new homes constructed adjacent to a new or existing roadway crossing of a stream where the roadway forms a sag vertical curve, the lowest floor of the lowest enclosed area (including basement) shall be elevated no less than three (3) feet above the top of roadway or curb, whichever is higher, measured at the low point of the curve.

O. Building Standards for Areas of Shallow Flooding (AO-Zones)

Areas of Special Flood Hazard may include designated "AO" shallow flooding areas. These areas have base flood depths of one to three feet above ground, with no clearly defined channel. In these areas, the following provisions apply:

1. All substantial improvements of residential and non-residential structures shall have the lowest floor, including basement, elevated to no lower than one (1) foot above the flood depth number specified on the Flood Insurance Rate Map (FIRM), above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated to at least three (3) feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards for "Elevated Buildings".

The applicant's or owner's engineer shall certify to the City that the lowest floor elevation level is at least three (3) feet above the highest adjacent grade and the record shall become a part of the permanent file;

2. Substantial improvement of a non-residential structure may be floodproofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to the specified FIRM flood level plus one (1) foot above the highest adjacent grade, with walls, substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydro dynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice; and
3. Drainage paths shall be provided to guide floodwater around and away from any proposed structure.

P. Standards for Subdivisions:

1. All subdivision proposals shall identify special flood hazard area and provide base flood or future-conditions flood elevation data;
2. All residential lots in a subdivision shall have sufficient buildable area outside of the base floodplain or future-condition floodplain such that encroachments into the floodplain for residential structures will not be allowed.

3. All subdivision plans will provide the elevation of proposed structure(s) and pad(s). If the site is filled above the base flood or regulatory flood elevation, the lowest floor and pad elevations shall be certified by a registered professional engineer or surveyor and provided to the City.
4. All subdivision proposals shall be consistent with the need to minimize flood damage;
5. All subdivision proposals shall have public utilities and facilities, such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage; and
6. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards.

Q. Standards for Utilities:

1. All new and replacement water supply and sanitary sewerage systems shall be designed to minimize or eliminate:
 1. Infiltration of flood waters into the systems; and,
 2. Discharges from the systems into flood waters.
2. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

8.4.06. *Information to be shown on Grading & Drainage Plans*

- A. Project name and valid registration stamp of the Professional Engineer licensed in the State of Georgia. A registered land surveyor is not acceptable. A registered Professional Engineer must stamp any redesign or revision.
- B. All construction drawings submitted to the City for review shall be professionally printed (AutoCAD format or approved equal). Hand written notes are not acceptable and will not be reviewed.
- C. Site plans should include street, street names, lot layout (if subdivision) or building locations (if multi-family, commercial or industrial), land lots and district, north arrow.
- D. Detailed plans of the location and the construction of drains, conduits, outlet protection, ponds, and other structures to convey, detain, or treat stormwater.

- E. Grading only plans shall include post-construction stormwater management controls.
- F. Final drainage plans for each individual residential lot shall be required. These plans shall detail the post-developed drainage patterns for each lot and show proper conveyance of stormwater runoff.
- G. Type of material to be used.
- H. Show location and extents of all state waters, stream buffers, wetlands, tree save areas, and other conservation areas.
- I. Show location of all discharge points for pre-developed and post-developed concentrated runoff.
- J. Locations and type of nearest existing utilities in areas of potential conflict.
- K. Existing and proposed ground contours.
- L. Extents of floodplain including floodplain designation and referencing corresponding FEMA/FIRM map panel or alternate source of best available floodplain data.
- M. Discharge flow rates and velocities from pipes, headwalls, ditches, and other outlet structures for the 2-year and 100-year storms.
- N. Concentrated run-off must be conveyed to receiving body in a responsible manner. Pipes adjacent to residential lots of less than 1 acre shall extend to rear building lines.
- O. Drainage easements must be provided for all (on-site and off-site) concentrated flow. Off-site drainage easements must be provided to the point where concentrated flow reaches an ephemeral, intermittent, or perennial stream that exists prior to development. The stream must have a definite channel, bank, and bed and be functioning to convey pre-developed run-off from the off-site property. Drainage easements do not relieve the developer from responsibility of ensuring that post-developed flows do not negatively impact downstream properties.
- P. Twenty-foot permanent easements are required where pipes, ditches, channels, etc. convey concentrated stormwater runoff across private property. Twenty-foot permanent access easements to all structures that receive runoff from two or more separate properties for detention or treatment are required. More easement area may be required as deemed necessary by the Authority. Said easements outside the public right of way are dedicated to the public good and are limited to

providing access to stormwater structures. Under no circumstances shall stormwater easements be conveyed to the City, as indicated in Section 8.1, Paragraph G.1.c, of these Construction Standards.

Q. Plan and profile scales shall be:

Vertical: 1 inch = 5 feet or 1 inch = 10 feet
Horizontal: 1 inch = 20 feet or 1 inch = 50 feet

1. Sheet size is 24 inches x 36 inches. "Half-size" drawing sets will not be reviewed and will be returned to the owner/developer.
2. A general site location map should be shown on the title sheet or first page.
3. All flood related information shown on the plans shall be as determined by a Professional Engineer licensed in the State of Georgia using methods approved by FEMA and the City.
4. The following notes shall be required on all drawings submitted to the City:
 - a. All stormwater construction shall conform to City of Temple Design and Construction Standards and specifications, latest edition.
 - b. Notify the City least 72 hours prior to beginning of land disturbance. An inspector will be assigned and a pre-construction meeting scheduled at this time.
 - c. Record drawings shall be field verified and stamped by a State of Georgia licensed Professional Engineer or land surveyor.
 - d. Contractors have the responsibility to comply with erosion control requirements of the local Land Disturbance Permit and NPDES General Permit if applicable.
 - e. The contractor shall comply with all Utilities Protection Center requirements.
 - f. Provide landscape and open space plan for the site.

8.04.07. Information to be Included in Storm Water Management Report.

The Storm Water Management Report must be stamped and signed by a Professional Engineer, registered in the State of Georgia and shall include the following:

- A. Common address and location map of the project site.
- B. Pre-developed conditions of the project including ground cover, soil type, topography, groundwater recharge rates, receiving surface waters, and existing pollutant sources.
- C. Description of methods and software used to compute peak flows, plot hydrographs, and to size conduits, channels, detention facilities, and treatment structures.
- D. Rainfall information for Temple as described in the Georgia Storm Water Management Manual utilizing the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 publication, or online using the Precipitation Frequency Data Server database for any location across Georgia <http://hdsc.nws.noaa.gov/hdsc/pfds/>).
- E. Pre-development peak flows and hydrographs, for each drainage basin within the project boundaries, including by-pass basins, for the following 24-hour rainfall events:
 - 1. 1 year storm
 - 2. 2 year storm
 - 3. 5 year storm
 - 4. 10 year storm
 - 5. 25 year storm
 - 6. 50 year storm
 - 7. 100 year storm
- F. Post development conditions including ground cover, % impervious surface, topography, soil type for fill material, by-pass flows, groundwater recharge rates, receiving surface waters, and potential pollutant sources.
- G. Post development peak flows and hydrographs, for each drainage basin within the project boundaries, including bypass basins, for the following rainfall events:
 - 1. 1 year storm
 - 2. 2 year storm
 - 3. 5 year storm

4. 10 year storm
 5. 25 year storm
 6. 50 year storm
 7. 100 year storm
- H. Provide a summary table for the site comparing the sum of post-developed peak discharges to the sum of pre-developed discharges. Include all on-site sub-basins and bypass. Post developed peak discharges shall not exceed pre-developed peak discharges. Allowable peak discharge equals the pre-developed peak discharge minus the post-developed bypass peak discharge. Show all storm events.
- I. Drainage maps showing delineation of onsite drainage basins for pre-development and post development conditions. Off-site portions of the drainage basins (upgradient and downgradient of site) shall also be shown. Indicate discharge points, receiving waters, and all study points.
- J. Use the "Stormwater Quality Site Development Review Tool" to show compliance with 80% TSS removal. Provide a map showing the water quality drainage areas correspond with the drainage areas used in the "Stormwater Quality Site Development Review Tool."
1. Detailed stage/storage computations for detention facilities that treat runoff from more than 5 acres shall be performed using the SCS TR-55 Method. For detention facilities that serve less than 5 acres, the Modified Rational Method, as defined in the Georgia Stormwater Management Manual, Volume 2, may be used. The Stormwater Quality Site Development Review Tool, formerly the Site Development Review Tool, may not be used for the design of detention ponds.
- K. Details of outlet control structure design including routing computations to show compliance with the following:
1. Extended detention of 1-year storm released over 24 hours (minimum) to provide channel protection in receiving waters. Show supporting computations.
 2. Detention of 1-year, 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year, 24-hour storms such that post development peak discharges do not exceed pre-development peak flows to provide downstream overbank flood protection.
 3. Anti-flotation calculations for the outlet control structure.

- L. Details of structures, methods, or devices proposed to remove 80% of pollutants from the first 1.2 inches of rainfall.
- M. Provide sizing calculations for all structures, methods, or devices proposed to remove 80% of pollutants from the first 1.2 inches of rainfall per the Georgia StormWater Management Manual.
- N. Details of walls in stormwater detention ponds constructed of non-earthen materials, such as concrete.
- O. Storm Water Management System - Provide description of proposed structural and non-structural controls and practices to provide flood control and remove pollutants from stormwater runoff. Provide design details of all structural practices and devices to be installed. Include storage volumes, water surface elevations, invert elevations, removal efficiency, flow, and velocity. For all pipes include length, diameter, type, slope, and invert elevations. For collection structures such as inlet and catch basins, include top elevation, invert elevation, type and material. For ditches, swales, and channels provide dimensions, average cross-sectional area, slope, and lining.
- P. Post Development Downstream Analysis - A downstream analysis to determine flood impacts on receiving water bodies and downstream property owners shall be performed as follows:
 - 1. Include study points at the downstream most discharge point of the onsite drainage area, at every point that concentrated runoff crosses a property line, at road crossings, at all downstream culverts, and stream confluences to where the project is 10% or less of the entire surface area that drains to that point.
 - 2. Provide pre- and post-developed hydrographs for all storm events at each study point. Provide a summary table for each study point comparing pre- and post- developed flows for all storm events. The downstream analysis must show no increase in peak flood elevation or peak flows at all of the aforementioned study points.
 - 3. For the overall basin, provide pre- and post-developed hydrographs for all storm events. Provide a summary table comparing pre- and post-developed flows for all storm events.
 - 4. A dam breach analysis is required for all new, rebuilt, or modified stormwater ponds and other water impoundments with a dam height of six feet or higher.

5. This analysis shall be performed in accordance with the Georgia Storm water Management Manual. Sites that contain more than one drainage area shall perform a downstream analysis for each drainage area.
 6. When an existing Category II dam may be reclassified to a Category I dam because of proposed development downstream of the dam or when development is proposed downstream of an existing Category I dam, the developer shall obtain concurrence for the development from the Georgia Safe Dams Program.
- Q. Operations and Maintenance Plan - Provide details of Post-Development operations and maintenance activities required to ensure the continued function of the stormwater management system. Include inspection schedules, maintenance tasks, responsible parties, access and safety, etc.
- R. Maintenance Access Easements - Description of easements required for the stormwater management facilities.
- S. Inspections of privately owned facilities shall be performed as often as deemed necessary by the owner to properly maintain facilities and prevent discharges of pollutants. Reports and records of maintenance activities must be kept on site and made available to the City upon request.
- T. Evidence of Acquisition of Applicable Permits - such as Stream Buffer Variance or Wetland Permits where required. Provide evidence that they have been obtained.
- U. All flood related information shown on the plans shall be as determined by a Professional Engineer licensed in the State of Georgia using methods approved by FEMA and the City.

Section 8.05. Design Standards- Erosion, Sedimentation, & Pollution Control

8.05.01. General.

- A. All design must conform to the minimum requirements set forth in the "Manual for Erosion and Sediment Control in Georgia," latest edition (hereafter referred to as the Manual), State General Permit, and any other pertinent regulations.
- B. On-site, above ground storage shall fully comply with the Oil Pollution Prevention Act and the Spill Prevention Containment and Countermeasure Rule (40 CFR Part 112).
- C. Design criteria for the mitigation of spilled petroleum shall fully comply with the Georgia Underground Storage Tank Management Rules.

- D. For projects that disturb 1.0 or more acres, erosion design must comply with requirements for the Erosion and Sediment and Pollution Control Plan as set forth in GAR100001, GAR100002, or GAR100003 as applicable.
- E. Per the NPDES permit, no more than 50 contiguous acres may be disturbed at any one time. In addition, for non-residential developments, the maximum disturbed acreage at any one time is 150% of the building size. For residential developments, the maximum disturbed acreage at any one time is 150% of the right-of-way. More disturbed acreage may be approved with the submission and approval of additional plans. The additional plans must detail the erosion and sedimentation control measures that will prevent sediment from leaving the site during every stage of construction.

8.05.02. *Sediment.*

A. Construction Exit

- 1.No soil disturbing-activities will be performed until a construction exit is properly installed as specified in the "Manual for Erosion and Sediment Control in Georgia."
- 2.The construction exit shall be of sufficient length, depth, and width to accommodate all necessary vehicular traffic into and out of the disturbed area while preventing the tracking of soil, mud, and debris onto public roadways.
- 3.Construction exits must also be constructed for each residential lot, regardless of whether the road frontage is public roadway. While this exit may be smaller than the minimum length required by the manual, all other design criteria apply.

B. Silt Fence

- 1.No soil disturbance may occur prior to the installation of silt fencing or other approved sediment barrier.
- 2.At least one half of the perimeter of the disturbed area shall be protected by a silt fence or other approved sediment barrier.
- 3.All silt fences shall be Type Sd1-NS (Non-Sensitive Areas) or Type Sd1-S (Sensitive Areas) as defined in the "Manual for Erosion and Sediment Control in Georgia." Fabric shall conform to specifications listed in Table 6-27.4 of the Manual.
- 4.Silt fencing shall be maintained throughout construction and until final stabilization is achieved, at which time the fencing shall be removed. Fabric shall be replaced as needed.

- C. Sediment Storage - all projects disturbing one or more acres shall provide for the temporary storage of sediment in accordance with the "Manual for Erosion and Sediment Control in Georgia."
- D. Mud and debris must not discharge onto any part of a public street. For the purpose of this section, public streets do not include newly constructed roads interior to a development that have not yet been accepted by the local government.
- E. All designs must include a washing station to be located as close as practicable to the construction exit. Wash water from the washing station must drain to a temporary sediment storage area or other suitable treatment device. In the event that petroleum contamination is caused by washing of vehicle tires (a sheen is visible on the water), spill containment booms, pads, or pillows shall be used to absorb petroleum off of the surface of the wash water, prior to discharge into state waters. Detergents may not be used in the washing of mud from tires.
- F. Cement trucks shall be required to wash at this wash station.
- G. The travel path from the washing station to the construction exit must be stabilized in accordance with criteria established in the Manual for construction road stabilization.
- H. Erosion and sediment control shall include provisions for treatment or control of any source of sediments. Adequate sedimentation control facilities shall be provided to retain sediments onsite or preclude sedimentation of adjacent waters so that turbidity is not increased more than 25 NTU.

8.05.03. *Streams.*

- A. All projects that include a permanent stream crossing must also include complete design details for a temporary stream crossing. During construction, the Developer may skip installation of the temporary crossing in favor of installing the permanent crossing. However, all designs must include the temporary crossing. Submit pipe-sizing calculations for City review.
- B. Any proposed disturbance of state waters must be clearly shown on the design drawings. It is the responsibility of the Designer to apply for a stream buffer variance from the Georgia Environmental Protection Division as needed. Designers are encouraged to seek City determination of state waters and buffers early in the design process. A land disturbance permit cannot be issued for any project involving disturbance of buffers until a variance has been obtained.
- C. For any disturbance within a flowing stream (intermittent or perennial), a stream diversion must be installed in accordance with the Manual to prevent the flow of water through an area of active soil disturbance. For minor disturbance of short durations, such as trenching across a stream for a water line, the diversion may

consist of damming the stream with plywood and pumping the flow around the work area.

- D. All disturbed stream banks must be stabilized with rock, vegetation, or both, immediately after disturbance is completed.
- E. Construction activities that discharge into an Impaired Stream Segment(**see** <https://epd.georgia.gov/georgia-305b303d-list-documents>), or within 1 linear mile upstream of and within the same watershed of the Impaired Stream Segment are required to comply with the Total Maximum Daily Load (TMDL) Plan (see <https://epd.georgia.gov/total-maximum-daily-loadings>), if applicable, as well as including at least four (4) of the following best management practices in the Erosion, Sedimentation, and Pollution Control Plan:
 - 1. During construction activities, double the width of the 25-foot undisturbed vegetated buffer along all State waters classified as “trout streams” requiring a buffer. During construction activities, EPD will not grant variances to any such buffers that are increased in width pursuant to this section.
 - 2. Increase all temporary sediment basins and retrofitted storm water management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards per acre drained).
 - 3. Use baffles in all temporary sediment basins and retrofitted storm water management basins to at least double the conventional flow path length to the outlet source.
 - 4. Place a large sign (minimum 4 feet x 8 feet) on the site visible from the roadway identifying the construction site, the permittee(s), and the contact person(s) and telephone number(s).
 - 5. Use anionic polyacrylamide (PAM) and/or mulch to stabilize areas left disturbed for more than seven (7) calendar days.
 - 6. Conduct turbidity and Total Suspended Solids (TSS) sampling after every rain event of 0.5 inch or greater within any 24-hour period.
 - 7. Comply with the applicable end-of-pipe turbidity effluent limit, without the “BMP defense” as provided for in O.C.G.A. 12-7-6(a)(1).
 - 8. Limit the total planned site disturbance to less than 50% impervious surfaces (excluding any State mandated buffer areas from such calculations).

9. Limit the amount of area disturbed at any one time to no greater than 25 acres or 50% of the total planned site, whichever is less.
10. Use “Dirt II” techniques to model and manage storm water runoff (e.g. seep berms, sand filters, anionic PAM), available on the EPD website, <http://gaswcc.georgia.gov/sites/gaswcc.georgia.gov/files/imported/SWCC/Files/dirt2.pdf>
11. Add appropriate organic soil amendments (e.g., compost) and conduct pre- and post-construction soil sampling to a depth of 6 (six) inches to document improved levels of soil carbon after final stabilization of the construction site.
12. Use filter berms, in addition to a silt fence, on the site perimeter wherever stormwater may be discharged.
13. Apply the appropriate Georgia Department of Transportation approved erosion control matting or blankets or bonded fiber matrix to all slopes steeper than 3:1.
14. Use appropriate erosion control matting or blankets instead of concrete in construction stormwater ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.
15. Use anionic PAM under a passive dosing method (e.g., flocculant blocks) within construction stormwater ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.
16. Install sod for a minimum 20-foot width, in lieu of seeding, along the side perimeter wherever stormwater may be discharged.
17. Use a surface draining skimmer designed to drain temporary sediment basins and retrofitted stormwater management basins over a minimum three (3) day period.
18. Certified personnel shall conduct inspections at least twice every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater.
19. Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activities.
20. Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional

(unless disapproved by EPD or the State Soil and Water Conservation Commission).

Section 8.05.04. *Petroleum.*

- A. If on-site storage vessels exceed a capacity of 1320 gallons of petroleum, a spill prevention containment and countermeasures plan must be prepared by a registered professional engineer as required by the Oil Pollution Prevention Act. All drums and tanks 55 gallons or larger shall be included in the capacity count. If the designer does not know what storage capacity needs are, the design can limit on-site storage capacity by notation in the Erosion Sedimentation and Pollution Control Plan.
- B. All project design drawings shall designate at least one fuel storage area or a fueling station. These shall be located as far from receiving waters as practical. Multiple storage areas or fueling stations may be shown. However, re-fueling of vehicles and equipment may only occur at a designated fueling station or storage area.
- C. Design of all fuel storage areas and fueling stations shall incorporate spill containment controls to obstruct the flow of spilled petroleum. Such secondary containment must be sufficient to hold 110% of the capacity of the largest container within the containment.
- D. All Erosion Sedimentation and Pollution Control Plans must include a narrative section on the proper equipment and proper handling of petroleum to minimize spills and proper containment measures to be taken should a spill occur.
- E. In the event of a release of petroleum into state waters, the following agencies must be notified immediately, no later than 24 hours after the occurrence:
 - 1. City of Temple (770-562-3369) or CityInspector
 - 2. Georgia EPD UST Office 1-800-241-4113
 - 3. National Response Center 1-800-424-8802
- F. Any petroleum release must be remediated immediately. Sampling and remediation must comply with standards set forth in the Georgia Rules for Underground Storage Tank Management (391-3-15).

8.05.05. *Polymer Usage.*

- A. Provide plan showing location of specific polymers and application rates.
- B. Provide soil analysis report and recommended polymers and application rates.

- C. Provide toxicity reports for polymers. Polymers shall meet or exceed local, state, and federal toxicity requirements.

8.05.06. *Information to Be shown on Erosion & Sediment Control Plan.*

- A. Sheet size is 24 inches x 36 inches. "Half-size" drawing sets will not be reviewed and will be returned to the owner/developer.

- B. Certifications.

- 1. The following Certification Paragraph must be shown on the drawings undersigned by a Design Professional.

"I certify that the permittee's Erosion, Sedimentation, and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for sampling of the receiving water(s) or the sampling of the stormwater outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAR 10000(1,2 or 3)."

- 2. The following Certification Statement must be shown on the drawings undersigned by a Design Professional.

"I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by myself or my authorized agent, under my supervision."

- 3. The following Certification Statement must be shown on the drawings undersigned by the Owner/Permittee.

"I certify that to the best of my knowledge and belief, the Erosion, Sedimentation and Pollution Control Plan (Plan) was prepared by a design professional, as defined by this permit, that has completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission in accordance with the provisions of O.C.G.A. 12-7-19 and that I will adhere to the Plan and comply with all requirements of this permit."

- C. Information to be shown on Design Drawings.

The following must be shown on the site design drawings:

- 1. Stamp and signature of a Licensed Professional

2. Site location and vicinity map with street names (may be omitted from ESPCP if included elsewhere in the set of design drawings).
3. Extents of 100-year base flood plain and corresponding FEMA/FIRM map panel number.
4. Graphic scale and north arrow indicating magnetic north. Scale shall be sufficient to show details. The City may specify a maximum allowable scale.
5. Existing and proposed ground contour lines with interval not to exceed 2 feet.
6. Soil series types and delineation.
7. Contact information for local 24-hour contact responsible for erosion, sedimentation and pollution control.
8. Location of all on-site water bodies including the designation of all state waters on site. Also, show all off-site state waters with 200 feet and receiving waters. Offsite topography and receiving waters may be shown on a scale larger than the maximum allowed for design drawings.
9. 25-foot state buffers adjacent to state water where vegetation has been wrested by normal stream flow. Also show City buffers as follows:
10. All streams — 50-foot no disturb buffers and 75' impervious and septic set backs

D. Location and delineation of all wetlands, ponds, marshes, and other environmentally sensitive areas.

E. Location of erosion sedimentation and pollution control measures and practices using the uniform coding system provided in the "Manual for Erosion and Sediment Control in Georgia," latest edition. The plan shall include a minimum of three phases of design, including:

1. Initial Controls
2. Intermediate Controls
3. Final Controls

F. All disturbed areas on individual lots shall have sod and/or landscaped areas consisting of established vegetation and mulch for final stabilization. Seed and straw is not acceptable as final stabilization for residential lots.

- G. Delineation of all areas to be disturbed and all areas not to be disturbed.
- H. All existing and proposed structures, utilities, and pavements.
- I. All proposed landscaping (may be omitted from ESPCP if included elsewhere in the set of design drawings).
- J. Location of stormwater outfalls and discharges into state waters.
- K. Location of all proposed sample collection stations.
- L. Location of all trash receptacles / dumpsters.
- M. Details.
 - 1. For each erosion, sedimentation, or pollution control plan provide design details as needed so that the control device can be properly installed. Use details from the "Manual for Erosion and Sediment Control" where possible. Where controls are used that are not in the manual, the Licensed Professional shall furnish adequate details.
 - 2. Provide a chart or timeline of the intended sequence of major activities that disturb soils. Include all erosion sedimentation and pollution controls shown on the design drawings and indicate when each is to be installed within each phase of construction (initial, intermediate or final).

N. Narrative.

The ESPCP shall contain a narrative section containing description and clarification of the following:

- 1. Description of the project and the nature of proposed construction activities.
- 2. Total site acreage.
- 3. Total disturbed acreage.
- 4. Summary of key hydrology data such as peak flows and runoff coefficients for pre- and post-development. Supporting data and calculations do not need to be supplied in the ESPCP if a suitable Stormwater Management Report has been submitted.
- 5. Description of soil types and ground cover.
- 6. Description of receiving water bodies.

7. List of secondary permittees (only for common developments – GAR 100003)
8. List of all on-site pollutant sources (existing and proposed regardless of ownership) along with description of proposed controls and procedures to minimize the risk of pollutant release.
9. Description of stream buffer requirements and proposed controls and procedures to protect buffers.
10. If no state waters are present, add the following note in bold: **No state waters or wetlands are located on or within 200 feet of this project.**
11. Description of installation methods for each erosion, sedimentation and pollution control practice to include structural and vegetative measures.
12. Description of inspection requirements including what areas are to be inspected and what is to be inspected for each of the following:
 - a. Daily inspections
 - b. Weekly inspections (bi-monthly if infrastructure project – GAR100002)
 - c. Monthly inspections
 - d. Inspections after every ½ inch storm event
13. Description of minimum qualifications of inspectors.
14. Description of requirements for monthly inspection reports to be kept on site.
15. Description of procedure for revision of the ESPCP.
16. Description of maintenance procedures for each of the erosion, sedimentation and pollution control devices to include structural and vegetative measures.
17. Description of sampling requirements and narrative instruction on collection methods for each of the sampling locations indicated on the design drawings.
18. Description of methods to be used in the transport and analysis of samples collected. Include identification of analytical method and required quality assurance/quality control measures.
19. Description of requirements for monthly monitoring report and address to where it is to be sent.

20. Description of allowable NTU concentrations for each outfall to be sampled and allowable NTU increase in each receiving water to be sampled.
21. Rationale for designation of representative streams (only for infrastructure projects – GAR 100002).
22. Description of qualifying sampling events and time limitations relative to sample collection, transportation, and analysis.
23. Description of non-stormwater discharges anticipated for the project including pollution prevention practices required to prevent discharges of pollutants to surface water. Address all existing and proposed sources of non-stormwater runoff.

O. Notes to be shown on Plans.

The following standard notes must be included in the order shown on the design drawings (may be omitted from ESPCP if included elsewhere in the set of design drawings):

1. The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities.
2. Erosion control measures will be maintained at all times. If full implementation of the approved plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source.
3. All disturbed areas must be stabilized with mulch or temporary seeding as soon as possible but not longer than 14 days after disturbance.
4. Notify the City at least 72 hours prior to commencement of land disturbing activities. An inspector will be assigned and a pre-construction meeting held prior to commencement of land disturbance.
5. Reserved
6. The contractor must notify the Utilities Protection Center at 1-800-282-7411 at least 72 hours prior to commencement of land-disturbing activities.
7. Stripping of vegetation, re-grading, and other development activities shall be conducted in such a manner to minimize erosion.
8. Cut and fill operations shall be kept to a minimum.
9. Development plans must conform to topography and soil type, to create the lowest practicable erosion potential.

10. Whenever feasible, natural vegetation shall be retained, protected, and supplemented.
11. Disturbed areas and their duration of exposure to erosive elements shall be kept to a practicable minimum.
12. Disturbed soil shall be stabilized as quickly as practicable.
13. Temporary vegetation or mulching shall be employed to protect exposed critical areas during development.
14. Permanent vegetation and structural erosion control measures shall be installed as soon as practicable.
15. To the extent necessary, sediment in run-off water shall be trapped by the use of debris basins, sediment basins, silt traps, or similar measures until the disturbed area is stabilized.
16. Adequate provisions shall be provided to minimize damage from surface water to the cut face of excavations or the sloping surfaces of fills.
17. Cuts and fills shall not endanger adjoining property.
18. Fills shall not encroach upon natural watercourses or constructed channels in a manner that would adversely affect other property owners.
19. Grading equipment must cross flowing streams by the means of bridges or culverts, except when such methods are not feasible, provided in any case that such crossings shall be kept to a minimum and that a properly designed temporary stream crossing is constructed in accordance with state and local regulations.
20. Provisions shall be provided for treatment or control of any source of sediments and adequate sedimentation control facilities to retain sediments on site or preclude sedimentation of adjacent waters beyond the levels specified in this permit.
21. No construction activities shall be conducted within a 50-foot buffer along the banks of all state waters (as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action) unless a formal waiver has been granted by the City.
22. Where the City grants a waiver, no construction activities shall be conducted within a 25-foot state buffer without full compliance of state regulations and obtaining a variance if applicable.

23. Except as provided above, for required buffers no construction activities shall be conducted within a buffer and a buffer shall remain in its natural, undisturbed, state of vegetation.
24. No land disturbing activities shall be conducted in a buffer. Once the final stabilization of the site is achieved and a valid Notice of Termination is submitted, a buffer may be thinned or trimmed of vegetation so long as a protective vegetative cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the streambed.

Section 8.06. Construction Standards- Water

8.06.01. *Scope.*

This specification covers the material requirements and installation procedures for all water pipe, structures and appurtenances to be accepted into the City of Temple water system. However, this does not limit the City's ability to require and/or accept other materials, construction techniques, or engineering, when deemed appropriate by the City. Any water pipe, structures or appurtenances which the City has reason to believe is not in conformance with these specifications will not be accepted.

8.06.02. *Quality Assurance.*

A. Applicable Standards.

The contractor shall supply all products and perform all work in accordance with WSA Design & Construction Standards, applicable standards from American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), and the Georgia EPD Minimum Standards for Public Water Systems. Latest revisions of all standards are applicable.

B. Quality Assurance.

If requested by the City, the contractor shall submit evidence that manufacturers have consistently produced products of satisfactory quality and performance for a period of at least two years.

C. Substitutions.

Whenever a product is identified in the specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, etc., the contractor may freely choose from those referenced products which ones he wishes to provide. Any item or product other than those so designed shall be considered a substitution. The contractor shall obtain prior approval from the City for all substitutions.

8.06.01. *Acceptable Materials.*

A. The contractor shall furnish all pipe fittings, valve tapping sleeves, hydrants and all other material required for the completion of the work as shown on the approved drawings or indicated by these specifications. The contractor shall only furnish materials in accordance with the following:

1. Pipe Materials.
2. Ductile Iron Pipe & Fittings.

B. The City will only accept Ductile Iron Pipe totally manufactured in the United States and supplied by ACIPCO, Griffin, McWane, or U.S. Pipe.

Ductile iron pipe shall be minimum class 50 cement lined and conform to AWWA C104 (Note: Where pipe provided is "pressure class," 350 PSI class shall be substituted for class 50 Ductile Iron Pipe unless otherwise specified in the contract documents, project design, or design engineer). Fittings shall conform to AWWA C110, or AWWA C153 with minimum rated working pressure of 250 PSI. The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc. The mass of the zinc applied shall be 200 g/m² of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The mean dry film thickness of the finishing layer shall not be less than 3 mils with a local minimum not less than 2 mils. All pipe shall be manufactured and coated in the United States at the pipe manufacturer's facility.

Pressure pipe class and standard pipe class pipe thickness shall be determined by AWWA C150 Standards by an internal pressure of 350 psi working pressure, or an external loading, whichever loading yields the thickest pipe. Minimal external loading shall be determined from 2.5 feet cover, AWWA type 1 trench, American Association of State Highway Transportation Official (AASHTO) H-20 line loading, or greater external loading if depth of cover yields a thicker pipe using AASHTO H-20 loading with AWWA type 1 trench conditions.

Joints shall be push-on type, for pipe and standard mechanical joints for fittings. Push-on mechanical joints shall conform to AWWA C111. Restrained joint pipe (RJP) shall be either the bolted joint type, or modified push-on type with joint restraint using ductile iron components. Restrained joint pipe where required shall be American, U.S. Pipe or equal as approved by the City. The use of locking type gaskets may be allowed where the City deems appropriate.

Ductile iron pipe fittings shall be produced in accordance with all applicable terms and provisions of ANSI/AWWA C153/A21.53 and ANSI/AWWA C111/A21.11. Fittings shall be cement lined and seal coated in accordance with ANSI/AWWA C104/A21.4.

The contractor is to provide the appropriate gaskets for mechanical or flange joints. Gaskets for flange joints shall be made of 1/8-inch thick cloth reinforced rubber; gaskets may be ring type or full-face type. Gaskets shall be yellow or orange in color and color

shall be consistent throughout the entire cross-section of the gasket. The color shall not be attained by surface coating; it shall be inherent within the rubber.

The contractor is to provide the necessary bolts for mechanical or flange connections. Mechanical or flange connections shall be steel with American regular unfinished heads. Nuts shall be steel with American Standard regular hexagonal dimensions, all as specified in AMSI B 17.2, and AWWA C111. All bolts and all nuts shall be treated in accordance with ANSI B 1.1, Coarse Thread Series, Class 2A and 2B fit.

C. All pipes shall be furnished in lengths of at least 18 feet and fully gauged per AWWA Standards.

D. Material acceptance will be on the basis of the City's inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards.

Polyvinyl Chloride (PVC) Pipe (2 inch, 4 inch):

PVC pipe material shall be used as casing material only for copper service lines and shall be a minimum of Class 200.

Copper Pipe & Fittings:

Copper pipe shall be type "K" soft drawn copper water tube packed in coils or cartons when specified. (ASTM B43) AWWA C800.

Copper pipe fittings shall be compression type brass. Tail pieces and meter couplings shall be cast brass threaded type. Copper Alloy No. C83600, ASTM B62 or ASTM B584.

8.06.02. *Valves.*

Buried valves shall be equipped with cast iron valve boxes. Extension stems will be provided where required. Valves shall be manufactured by Mueller, U.S., M & H, or equal as approved by the Authority and conform to AWWA C800.

Curbing shall be marked using an approved method of cutting symbols into the top of the curb ("W" for water service and "V" for valves). Where no curbing exists, concrete valve markers shall be installed for each valve excluding fire hydrant valves. Valve markers, where appropriate, shall be located at the back of the right-of-way.

A. Gate Valves.

Gate valves shall be required for diameters of 3 - 10 inches and shall be resilient seat type conforming to the requirements of AWWA C509 with flanged, and mechanical joint

ends. Valves shall be furnished with O-ring type stem seals. All valves shall open in a counterclockwise direction and close in a clockwise direction.

B. Butterfly Valves.

Butterfly valves shall be required for diameters of 12 inches and larger and shall conform to AWWA Standard C504 with flanged, and mechanical joint ends.

8.06.03. *Backflow Preventers.*

Backflow preventers shall be the reduced pressure zone type, double check type, or dual check type (for residential use only) as determined by the City on a case-by-case basis. Backflow preventers shall conform to current requirements (ASSE, or USC-FCCC) and be certified by a USC laboratory. The installation shall meet all applicable State, and AWWA M-14, and local codes. Backflow preventers shall be manufactured by Hersey (Becco), Watts, Febco, Ames or approved equal. For buildings located where there is insufficient space between the right-of-way and the building, the location of the backflow preventer may be determined on a case-by-case basis at the sole discretion of the City.

A. Reduced Pressure Assemblies:

Sizes 3/4 inch through 2-inch shall have bronze bodies with threaded connections and bronze union on either side.

Sizes 3 inch and larger shall be bronze or iron bodied with corrosion resisting moving parts and trim and flange connections.

8.06.04. *Corporation & Curb Stops.*

Corporation and curb stops shall be ball valve type, shall be made of bronze conforming to ASTM B 61 or B 62, and shall be suitable for the working pressure of 175 PSI or greater.

Ends shall be suitable for compression type joint. Threaded ends for inlet and outlet of corporation stops shall conform to AWWA C 800; couplings not for connection to flared copper tubing shall conform to ANSI B 16.26. Corporation stops shall be manufactured by Hays, (Lee Brass) (5200 CF) Mueller (H-15008) Ford (F10003G) and/or McDonald (4701BT) or approved by the City. Curb stops shall be manufactured by Hays (Lee Brass) (4302CFW), Mueller (B25170R), Ford (B41233WG) and/or McDonald (6102WT) or approved by the City.

8.06.05. *Residential Service Line Shutoff Valve.*

A shutoff valve shall be installed on all residential service lines immediately downstream of the backflow preventer. The shutoff valve shall be made of bronze conforming to AWWA Standard C800 and ASTM B-62, shall be quarter-turn ball valve type with lever

handle, and shall be manufactured by Ford Meter Box Company or approved equal. The shutoff valve shall be installed in a separate valve box manufactured by DFW, Ametek, Carson Brooks or approved equal.

8.06.06. *Valve Boxes.*

All valves shall be equipped with valve boxes. Valve boxes shall be heavy roadway type. The valve boxes shall be cast iron two-piece screw type with drop covers. The valve boxes shall be adjustable up or down from the nominal required cover over the pipe. Typical valve box details are included in the Appendix. All valve boxes shall be manufactured by Higgins Foundry, U.S. Foundry, Tyler Pipe, Opelika or as approved by the City.

8.06.07. *Tapping Sleeves & Valves.*

Tapping sleeves greater than two inches shall be of the split sleeve, mechanical joint type. Valves shall be gate valves furnished in accordance with the specifications shown above, with flanged connection to the tapping sleeve and mechanical joint connection to the branch pipe. The necessary bolts, glands, and gaskets shall be furnished. Tapping sleeves and valves shall be cast iron or ductile iron. Prefabricated tapping sleeves may be used on PVC and AC Pipe upon approval by the City.

8.06.08. *Tapping Saddles.*

Tapping saddles up to two inches shall be ductile iron body type with O-ring gasket and alloy steel double straps. Connection shall be threaded as required. Tapping saddles shall be manufactured by Smith Blair, Mueller, Ford, Dresser or equal as approved by the City.

8.06.09. *Meter Boxes for ¾ x 5/8 inch Meters.*

Meter boxes shall be manufactured in the United States and made from high density polyethylene. Meter boxes shall be 12 inches in height and the bottom shall not be less than 18 inches in length x 13 inches in width. Meter boxes shall be DFW, Ametek, Carson Brooks Plastic or approved equal. Lids shall be AMR/AMI radio compatible, consistent with the lids currently being used by the Authority, and manufactured by DFW or approved equal.

8.06.10. *Fire Hydrants.*

All fire hydrants shall conform to the requirements of AWWA C502 for 150 PSI working pressure and NFPA 1993 addition. Hydrants shall be the compression type, closing with line pressure. The valve opening shall not be less than 5 1/4 inches. All valves shall open counter clockwise.

In the event of a traffic accident, the hydrant barrel shall break away from the standpipe at a point above grade and in a manner which will prevent damage to the barrel and stem, preclude opening of the valve, and permit rapid and inexpensive restoration without digging or cutting off the water. The means for attaching the barrel to the standpipe shall permit facing the hydrant a minimum of eight different directions.

Hydrants shall be fully bronze mounted, with all working parts of bronze. Valve seat ring shall be bronze and shall screw into a bronze retainer.

All working parts, including the seat ring, shall be removable through the top without disturbing the barrel of the hydrant. The opening nut shall match those on the existing hydrants. The opening threads shall be totally enclosed in an operating chamber separated from the hydrant barrel by a rubber O-ring stem seal and lubricated by a grease or oil reservoir.

Hydrant shall be a non-freezing design and be provided with a simple, positive, and automatic drain, which shall be fully closed whenever the main valve is opened.

Hose and pumper connections shall be threaded and pinned to seal them permanently to the hydrant barrel.

Each hydrant shall meet the standards for the local fire department and national standards. Each connection shall be equipped with cap and chain.

Hydrants shall be furnished with a mechanical joint shoe connection to the spigot of the 6-inch hydrant lead.

Minimum depth of bury shall be 4.0 feet or as existing water main depths dictate. Provide extension section where necessary for vertical installation and in accordance with manufacturer's recommendations.

Fire hydrants shall be factory painted silver.

Hydrants shall be Mueller: Model Super Centurion 250, #A-423; M&H Valve Company: Model 129T; U.S. Pipe: Model Metropolitan; American: Model American-Darling B-84-B-5; EJ: Model WaterMaster 5CD250 or equal as approved by the City.

8.06.11. *Fire Lines.*

A fire line meter and double check backflow preventer shall be installed on all privately owned fire lines. If a commercial development is not master metered, each lot may be required to have a fire line meter and double check backflow preventer as determined by the City on a case-by-case basis. The meter shall be installed in a vault and located in the public right-of-way. The backflow preventer shall be installed in a vault and located on private property. Fire line meters shall be the same size as the installed fire line and shall be manufactured by Badger Meter, Inc. or a City approved equal. Subject to the approval

of the Authority, the owner may request an alternate meter size by providing (1) certification by a Professional Engineer licensed in the state of Georgia and (2) approval of the Fire Marshall.

When installing meters 3" and larger with a strainer, a minimum of five (5) pipe diameters of straight run pipe (can include components that are fully open in their normal operating position) is required upstream and along with a minimum of two (2) pipe diameters downstream of the meter/strainer assembly.

There will be no impact fee charged for the fire line meter or meter. However, the actual cost of the meter will be the responsibility of the owner.

For one and two family residential structures that have a combined domestic and fire line service, meters shall meet AWWA Standard C714-13 and the minimum allowable meter size shall be ¾-inch. The owner/developer is responsible for sizing the service line and meter to provide domestic and fire flow.

8.06.12. Material Inspection & Acceptance.

Acceptance of all water pipe and appurtenances shall be on the basis of the City's inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with all applicable standards, latest revisions.

Each pipe shall be clearly marked as required by the governing ASTM Standard Specifications to show its class, date of manufacture and the name and trademark of the manufacturer.

Latitudes in workmanship and finish allowed by the ASTM Specifications notwithstanding, all pipe shall be first quality, have smooth exterior and interior surfaces and be free from cracks, blisters and other imperfections, and true to theoretical shapes and forms throughout each length. All pipe shall be subject to inspection by the Authority at the pipe plant, trench and other points of delivery for the purpose of culling and rejecting pipe, independent of laboratory tests. Pipe that does not conform shall be marked as such by the City and shall not be delivered or used in the work. On-the-job repairing of rejected pipe will not be permitted.

Any pipe or special items which have been broken, cracked or otherwise damaged before or after delivery or which have failed to meet the required tests, shall be removed from the site of the work and shall not be used therein.

Section 8.06.04. Handling Materials.

A. Unloading.

1. The contractor shall furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings, valves and accessories. The contractor will have equipment available at all times for use in unloading. Any materials

dropped or dumped will be subject to rejection by the Authority without additional justification.

B. Handling.

1. The contractor will handle pipe, fittings, valves and accessories carefully to prevent shock or damage. Pipe should be handled by rolling on skids, forklift, or front loader. The contractor shall not use material damaged in handling.

C. Distribution.

1. The contractor shall distribute and place pipe and materials so as not to interfere with traffic. Pipe shall not be strung more than 1,000 feet beyond the area where pipe is being laid. Drainage ditches shall not be obstructed.

D. Storage.

1. The contractor shall store all pipe that cannot be distributed along the route. The contractor shall make arrangements for the use of suitable storage areas.

Section 8.6.05. Clearing.

The contractor shall clear the entire width of the permanent easement prior to trenching. All trees, growth, debris, stumps and other objectionable matter shall be removed. Clearing of the construction easement is permitted, with special care taken to adhere to the requirement of Paragraph 20.0. All unsuitable material shall be removed from the easement.

Section 8.6.06. Excavation.

A. The contractor shall excavate all materials encountered, including rock, and dispose of excess excavated material not required for backfilling. All excavation shall be performed in accordance with applicable local, state, and federal regulations, including the Occupational Safety and Health Act of 1970 (PL 91-596).

B. Depth of Trenches.

The contractor shall excavate trenches to provide a minimum cover of four feet above the top of the pipe. Within the right-of-way of highways, streets, or roadways, the contractor shall excavate to place the top of the pipe a minimum of four feet below the nearest pavement edge.

C. Width of Trenches.

Trenches shall be excavated wide enough to allow proper installation of pipe, fittings, and other materials and not less than six inches clear of the outside barrel of the pipe on any side at any point.

D. Bell Holes.

At each joint, the contractor shall excavate bell holes of ample depth and width to permit the joint to be made properly and to relieve pipe bell of any load.

E. Earth Excavation.

The contractor shall excavate and prepare the trench bottom to support the pipe uniformly throughout its length. For both ductile iron pipe and PVC pipe, the trench shall meet all requirements of Standard Laying Condition Type 2 in accordance with AWWA C600.

If the trench is excavated to excessive width or depth, as determined by the Inspector, the contractor shall provide a crushed stone bedding material meeting the requirements of Georgia D.O.T. Specification 800.01 for No. 57 stone and bed the pipe to achieve Condition Type 4 in accordance with AWWA C600. Trench width, pipe bedding and installation shall be per the manufacturer's recommendation

F. Rock Excavation.

1. Rock (Defined)

Any material that cannot be excavated with a backhoe having a bucket curling force rated at not less than 18,300 pounds (Caterpillar Model 215 or equal), and occupying an original volume of at least 1/2 cubic yard.

2. Excavation.

Where rock is encountered, the contractor shall excavate to the minimum depth and width, which will provide six inches clearance beyond the outside diameter of the pipe bell. Trench width, pipe bedding and installation shall be per the manufacturer's recommendations.

3. Blasting.

Only licensed blasting contractors shall be employed and all blasting shall be monitored by seismographs. Liability insurance shall be required in the amount deemed appropriate by the Authority. The contractor shall provide experienced workmen to perform blasting.

All blasting operations shall be conducted in accordance with all existing ordinances and regulations. The contractor shall protect all structures from the effects of the blast and repair any resulting damage.

4. Removal of Rock.

The contractor shall not use excavated rock as backfill material. All rock which is surplus or not suitable for use as rip-rap shall be disposed of appropriately.

Section 8.07. Existing Underground Utilities & Obstructions.

It is the responsibility of the contractor to locate all existing utilities along the path of construction. Drawings shall indicate underground utilities or obstructions that are known to exist. Where these or unforeseen underground utilities are encountered, the location and alignment of the water main may be changed, upon written approval of the City, to avoid interference. It is the responsibility of the contractor to have all existing utilities located prior to any trenching operation. Any utility that may be damaged in this operation will be at the expense of the contractor.

8.07.01. *Abandoning Existing Water Lines.*

A. Water System Mains

1. The City must expressly approve all water system mains that are to be removed from service and abandoned prior to their removal. The City may also require replacement of water lines encountered during construction that are not made of ductile iron pipe. The requirements for removing a water system main from service include but are not limited to the following:
 - a. The developer shall be responsible for physically disconnecting the proposed abandoned main from the City's water distribution system. All penetrations into the City's system from the abandoned main shall be capped off and sealed to the Authority's satisfaction.
 - b. The replacement main must be no less than the size of the existing main. The City, in its sole discretion, may require the existing water main to be replaced with a larger sized main.
 - c. The developer shall be responsible for connecting all existing City of Temple customers, fire lines and taps that are served by the existing water main onto the replacement main. All costs of connecting existing City of Temple customers, fire lines and taps to the replacement main, including ancillary costs (e.g., meter and service line relocation, etc.), shall be borne by the developer.
 - d. Replacement fire hydrants and their installation shall be in accordance with current City standards.
 - e. The contractor shall formulate a plan to minimize service interruptions to existing City of Temple customers. Said plan shall be subject to review and approval by the City.
 - f. The replacement line shall meet all construction standards as stipulated in the latest edition of these specifications.

8.07.02. *Water Service Lines.*

Water service lines that are to be removed from service shall be terminated at the corporation stop.

Section 8.08.. Laying & Jointing Pipe & Fittings.

The contractor shall lay all pipe and fittings to accurately conform to the lines and grades and shown on the drawings previously approved by the City as follows:

8.08.01. *Pipe Handling*

The contractor shall lower pipe, fittings, valves and accessories into the trench by suitable means. The contractor shall not drop or dump pipe or accessories into the trench. The contractor shall clean pipe and fittings thoroughly with vegetable soap and water before laying. Care shall be taken to keep the pipeline clean until final acceptance. If any pipe or other material is discovered to be defective or damaged after being laid, the contractor shall remove and replace it.

8.08.02. *Pipe Alignment & Gradient.*

The contractor shall lay pipe straight in alignment of gradient or follow true curves as nearly as practical. No joints shall be deflected more than the maximum deflection allowed by the manufacturer. The contractor shall maintain a transit and accessories at the job site to lay out angles and ensure that deflection allowances are not exceeded.

8.08.03. *Expediting Work.*

The contractor shall excavate, lay the pipe, and backfill as closely together as possible. Unjointed pipe shall not be left in the trench overnight. The contractor shall backfill and compact the trench as soon as possible after laying, jointing and inspection are completed. The exposed end of the installed pipe shall be sealed with a mechanical joint plug each day at the close of work and at all other times when work is not in progress. If necessary to backfill over the end of an uncompleted pipe, the end shall be closed with a mechanical joint plug. However, backfilling shall commence only after inspection.

8.08.04. *Laying Pipe in Trenches.*

The contractor shall lay the pipe with solid bearing throughout its length as described below:

A. Earth Trenches

The bottom of the trench shall be graded to a true line. The pipe shall be laid in clean bedding material, free of rock, organics, and other materials which, in the opinion of

the inspector, are unsuitable. All pipe shall be installed and bedded per the manufacturer's recommendations.

B. Rock Trenches

The pipe shall be bedded in at least six inches of granular bedding material. The contractor shall backfill with the same material to at least two feet above the pipe. All pipe shall be installed and bedded per the manufacturer's recommendations.

C. Wet Trenches

Pipe shall not be laid in water. The contractor shall provide dewatering equipment to maintain a ground water level below the bottom of the pipe while pipe is being laid. Any damage that may result from the contractor's dewatering processes is the responsibility of the contractor.

8.08.05. *Jointing*

All joints shall be made in accordance with all applicable ASTM and ANSI/AWWA Standards.

Section 8.09. Connections to Existing Pipelines.

Before laying pipe, the contractor shall locate the points of connection to existing pipelines and uncover them as necessary for the City to confirm the nature of the connection to be made. The contractor shall furnish all materials and make the connection to all existing pipelines.

The contractor will be charged a connection fee to cover the expenses of the City. All taps being made into existing pressurized lines shall only be made by approved contractors with the City's inspection and using a method recommended by the DIPRA or the Uni-Bell Association. The City may, at its sole discretion, choose to perform the final tie-in to the system and charge the developer. Tie-in to the existing system shall be the final act of the project and under no circumstances shall the tie-in be performed without City approval. Any communication with the public concerning temporary service outages or any other activities associated with the project shall be subject to the approval of the City. This shall include, but is not limited to, installation of individual fire hydrants, services, fire service, etc.

Section 8.10. Thrust Restraint.

The contractor shall provide a restraint at all points where hydraulic thrust may develop. Restraints shall have a minimum design safety factor of 2.5 and shall be certified by a Professional Engineer registered in the State of Georgia. The contractor shall install eyebolts and rods as required on all associated fittings, valves, and related piping.

8.10.01. *Retainer Glands.*

Retainer glands shall be equal to ACIPCO A 90875.

8.10.02. *Concrete Blocking.*

Concrete blocking shall be provided for all other bends, tees, valves, and other points where thrust may develop. Concrete shall have a compressive strength of not less than 3000 PSI, with not less than 5.5 bags of cement per cubic yard and a slump between 2 ½ to 4 inches. For job mixed concrete, the contractor shall submit the concrete mix design for approval by the Authority. Ready-mixed concrete shall be mixed and transported in accordance with ASTM C94. Reinforcing steel shall conform to the requirements of ASTM A615, Grade 40.

The contractor shall form and pour concrete blocking at fittings as shown on the construction drawings as designed by the developer's Professional Engineer licensed in the State of Georgia and as directed by the City.

Blocking shall be poured against undisturbed earth. Increase dimensions when required by over excavation. Concrete shall not cover bolts or nuts. Precast thrust blocks are unacceptable without prior approval.

Section 8.11. Backfilling.

The contractor shall backfill and compact the soil to prevent settlement and displacement of the pipe. Before heavy construction equipment is permitted to cross over a pipe, an earth fill shall be constructed to an elevation of at least three feet over the top of the pipe or to an elevation as required by the manufacturer, whichever is greater.

8.11.01. *Suitable Material.*

The contractor shall backfill trenches with earth only. Rock material excavated from trenches shall not be used in the backfill material. If necessary, the contractor shall furnish suitable earth material to backfill the trench.

8.11.02. *Backfilling Material.*

The contractor shall place initial backfill material in the bottom of the trench and up to two feet above the pipe in 6-inch layers. The material shall be compacted in place one on each side and top of the pipe.

The contractor shall place and compact final backfill material in 12 inch layers if mechanical tamping equipment is used to achieve proper compaction. Final backfill material may be placed in 2-foot layers when compacting with heavy tamping equipment.

8.11.03. *Backfilling Under Roads.*

Backfill underlying pavement and backfill under dirt and gravel roads shall be compacted to 95% of the maximum dry density as determined by the Standard Proctor Compaction Test (ASTM D 698). Compaction test may be required in existing or proposed streets, sidewalks, drives, and other existing or proposed paved areas at varying depths and at intervals determined by the Authority engineer with a maximum of one required test for each 400 feet of water main construction, unless soil conditions or construction practices in the opinion of the Cityengineer and/or Development Official warrants the need for additional tests.

8.11.04. *Settlement.*

If the trenches settle, the contractor shall refill and grade the top of the trench to conform to the adjacent surface.

Section 8.12. Construction Along Highways, Streets, Roadways, & Streams.

8.12.01. *Conformance with Governmental Agencies.*

The contractor shall comply with all construction operation requirements, safety requirements, traffic control requirements, road maintenance requirements and repair requirements of the City of Temple, Carroll County and/or the Georgia Department of Transportation while installing any water line and/or appurtenance along highways, streets and roadways. As required, Cityshall procure D.O.T. and county permits necessary to complete the project. The contractor shall be responsible for obtaining any and all permits from other governing bodies necessary to complete the project.

These other permitting agencies may include but are not necessarily limited to the following:

- A. Carroll County
- B. Georgia Environmental Protection Division (EPD)
- C. United States Department of Agriculture – Natural Resources Conservation Service (USDA – NRCS)
- D. United States Army Corps of Engineers

8.12.02. *Protection of Traffic.*

The contractor is to provide and maintain suitable signs, barricades, and lights for protection of traffic. All highway signs removed for construction shall be replaced at the end of each day. The contractor shall not close or block any highway, street, or roadway without first obtaining permission from the proper authorities. The contractor shall provide trained and Georgia D.O.T. certified flagmen to direct and expedite the flow of traffic.

8.12.03. *Construction Operations.*

The contractor is to perform all work along highways, streets and roadways to minimize traffic interference.

A. Stripping

Where the pipeline is laid along road shoulders, the contractor shall strip and stockpile all sod, topsoil, and other material suitable for shoulder restoration.

B. Trenching, Laying and Backfilling

Trench excavation shall not be open cut any further ahead of pipe laying operations than is necessary. The contractor shall backfill and remove excess material immediately behind laying operations. Complete excavation and backfill for any portion of the trench in the same day. All lines shall be plugged at the end of each day.

C. Shaping

The contractor shall reshape damaged slopes, side ditches and ditch lines immediately after completing backfilling operations. Topsoil, sod, and any other materials removed from shoulders shall be replaced.

8.12.04. *Excavated Materials.*

The contractor shall not place excavated material along highways, streets, and roadways in a manner that obstructs traffic. All scattered excavated material shall be swept off the pavement. If all material cannot be removed from the pavement, the contractor is to notify the Governmental Agency having jurisdiction over the street or roadway so that they can assist the contractor in cleanup efforts. The contractor shall be responsible for any fees or damage resulting from construction activity.

Section 8.13. Removing & Replacing Pavement.

8.13.01. *Removing Pavement.*

The contractor shall remove existing pavement as necessary for installing the pipe line and appurtenances. The developer shall accept full responsibility for the pavement/roadway during all construction activities. The developer shall also be responsible for securing all pavement cut permits from the County, or other governing authority.

City may procure permits from D.O.T. upon request from the developer. Prior to obtaining a D.O.T. permit, the City, in its sole discretion, may require the developer to

post bond up to and including 100% of the cost of replacing the roadway impacted by the proposed construction activity.

A. Marking Pavement

Before removing any pavement, the contractor shall mark the pavement neatly paralleling the pipeline and existing street lines. The marks shall be spaced the width of the trench.

B. Breaking Pavement.

The contractor shall break the asphalt pavement along the marks using jack hammers or by scoring with a rotary saw and breaking below the score by jack hammers or other suitable tools.

C. Machine Pulling Pavement

No pavement shall be pulled with machines until it is completely broken and separated from the pavement that is to remain.

D. Damage to Adjacent Pavement

The contractor shall not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, the contractor is responsible for removing and replacing the damaged pavement.

E. Sidewalks

Sidewalks shall be removed and replaced to their full width.

F. Curbs and Gutters

The contractor shall remove and replace or tunnel under any curb encountered.

G. Driveways

Driveways shall be removed and replaced to their full width to the satisfaction of the property owner.

8.13.02. *Replacing Pavement.*

Upon completion of the placing and consolidation of the backfill, the contractor shall arrange to have the compaction tested by an independent testing laboratory approved by the City. After the compaction testing has been satisfactorily completed, the contractor shall replace all pavement, sidewalks and curbs that had to be removed.

8.13.03. *Materials to be Replaced.*

The contractor shall place the materials for pavement to the dimensions shown on the drawings. The following types of sub-bases will be replaced:

A. Graded Aggregate Base

The contractor shall furnish graded aggregate base (GAB) in two sizes of such gradation that when combined in approximately equal quantities, the resulting mixture is well graded from coarse to fine and meets the gradation requirements of Section 816 of the Georgia D.O.T. standard specifications.

B. Black Base

The base for all paved roadways shall conform to the requirements of the Georgia State Highway Department of Transportation Specifications for the black base (Hot Mix). A Pug Mill Rotary Drum type mixer shall be used with a minimum capacity of not less than 50 tons per hour for asphalt production. The base shall be applied and compacted in two courses by asphalt spreader equipment of design and operation approved by the City. After compaction, the black base shall be smooth and true to establish profiles and sections.

C. Surface Course

The surface course for all pavement, including paint or tack coat when required by the governing agency, shall conform to the requirements of the Georgia State Highway Department of Transportation Specifications for Asphaltic Concrete, Section 400, Type "E" (Modified Top). The contractor shall produce the surface course in an asphalt plant of the same type as noted above for black base corrected by cutting out the course, replacing with fresh hot mix, and immediately compacting it to conform and thoroughly bonding it to the surrounding area.

D. Concrete

The contractor shall provide concrete and reinforcing for concrete pavement in accordance with the requirements of the Georgia State Highway Department of Transportation Specifications for Portland Concrete Pavement.

8.13.04. *Supervision & Approval of Pavement Restoration.*

Pavement restoration shall meet the requirements of the regulatory agency responsible for the pavement. The contractor shall obtain agency approval of all pavement restorations before requesting final payment.

A. Pavement Replacement.

Prior to replacing the pavement, the contractor shall make a final cut in concrete pavement nine inches back from the edge of the trench. The contractor shall make the

cut using a rotary saw. Asphalt pavement shall be removed nine inches back from the edge of the trench using jack hammers or other suitable tools. The contractor shall replace all street and roadway pavement as shown on the drawings. All driveways, sidewalks, and curbs shall be replaced with the same material and to the same dimensions as existing.

B. Pavement Failure.

Should any pavement restoration or repairs fail or settle for a period of one year following construction, the contractor shall promptly restore or repair all defects. All paving replacements must be acceptable to the appropriate governing body.

Section 8.14. Boring & Tunneling.

The City may procure all bore permits from the D.O.T. at the request of the developer. Bonding provisions as noted in Section 14.1 shall apply. The developer is responsible for securing all bore permits from City, County or other governing authorities. The contractor shall furnish and install tunnel liner or pipe casing and install the pipeline therein in accordance with the following specifications:

8.14.01. *Well Pointing.*

The contractor shall operate well points or drainage systems in the vicinity of the tunnel or casing construction to prevent the accumulation of flood water in the tunnel or casing and to maintain the ground water table below the tunnel or casing invert.

8.14.02. *Damage to Existing Structures.*

The contractor shall take precautions to construct the tunnel so that no settlement of the over passing roadway, railway or any other structure will occur. In order to prevent such settlement, the use of poling plates, breast boards, shields, and soil solidification or a combination of these methods may be necessary. The City shall not be responsible for any damage that may result from the tunnel construction.

8.14.03. *Boring.*

The contractor shall furnish all material and equipment and perform all labor required to install steel pipe casing at the locations indicated on the drawings. Boring design and materials shall be per all AREA, AASHTO, Georgia D.O.T., and other applicable standards.

A. Casing Materials & Size Requirements.

Steel casing pipe shall be Schedule 30 steel pipe manufactured from steel conforming to ASTM A 139, Grade B. The steel sleeves shall be coated inside and outside with two

coats of bitumastic paint prior to delivery on the job site. All casing size and thickness shall be as follows:

Casing Requirements Beneath Highways and Railroads

(All dimensions below are inches)

<u>Pipe Diameter</u>	<u>Casing Diameter</u>	<u>Wall Thickness Under Highways</u>	<u>Wall Thickness Under Railroads</u>
4	8	0.25	0.50
6	12	0.25	0.50
8	16	0.25	0.50
10	16	0.25	0.50
12	20	0.25	0.50
14	24	0.25	0.50
16	30	0.375	0.50
18	36	0.375	0.50
20	36	0.375	0.50
24	36	0.375	0.50
30	40	0.50	0.625

Joint Usage of Casing Pipe.

The contractor shall not install any pipe in an existing steel casing that is being used for any other purpose without the written approval of the City.

B. Casing Pipe Installation.

The contractor shall install the steel casing pipe by the dry boring method. The contractor shall bore the hole and install the casing through the soil simultaneously by a cutting head on a continuous auger mounted inside the casing pipe to the preceding section in accordance with the AWS recommended procedures. After the boring and installation of the casing is complete, the contractor shall install a cleaning plug on the rig and clean the casing.

C. Rock Formations.

In the event that rock is encountered during the installation of the pipe casing that, in the opinion of the City, cannot be removed through the casing, the City shall direct the contractor to complete the crossing by installing a tunnel.

8.14.04. *Tunneling.*

The contractor shall install the tunnel liner in strict accordance with the Department of Transportation (D.O.T.) and/or Railroad Company requirements. The contractor shall provide any special insurance coverage required by the governing body.

The tunnel installer shall have a minimum of five years of experience in the construction of tunnels of a similar size. The contractor shall submit evidence of the installer's experience for review by the City.

A. Blasting Permits

Prior to any work involving explosives the contractor shall make application to the D.O.T. and all other required agencies for a blasting permit. This permit will be in addition to any tunneling permit not involving explosives. The contractor shall comply with all requirements and conditions of the permits including required submittals.

B. Traffic Control Requirements.

The contractor shall schedule the work so as not to interfere with or in any way endanger traffic flow on the highway or railway. The contractor shall provide all required safety measures as specified in the Georgia Manual on Uniform Traffic Control Devices.

C. Materials.

Tunnel liner plates shall be manufactured from steel conforming with ASTM A569 with the following mechanical properties before cold forming:

Minimum tensile strength = 42,000 PSI

Minimum yield strength = 28,000 PSI

Elongation, two inches = 30%

Liner plates shall be 10 gauge, with the neutral axis diameter shown on the drawings for each crossing.

Minimum coatings required shall be galvanized in accordance with ASTM A 123 for liner plates and hot-dip galvanizing in accordance with ASTM A153 for all other hardware. Additional protection required shall consist of a full bituminous coating meeting the requirements of ASSHTO M 190.

All plates shall be punched for bolting on both longitudinal and circumferential seams or joints and shall be so fabricated as to permit complete erection from the inside of the tunnel. The plates shall be equipped with 2-inch standard pipe half-couplings welded into a hole in the center of the plate for grouting of voids occurring outside of the liner. Couplings shall be fitted with threaded cast-iron plugs. Bolts shall be no less than 5/8-inch diameter. The contractor shall submit shop drawings showing details of the plates' size, length and width for review by the engineer, the City and Georgia D.O.T.

D. Tunnel Construction Methods.

After the tunnel has been completely constructed, the contractor shall thoroughly clean the interior and shall place structural quality concrete of a strength approved by the Authority within the invert of the tunnel. The contractor shall screen and trowel the top of the exterior of a pipe width placed on proper grade within the tunnel. As the pipe is jointed, it shall be drawn into position inside the tunnel.

Systems of standard pipe, fitting, hose, and special grouting outlets embedded in the liner plates shall be provided by the contractor. Care shall be taken to ensure that the parts of the system are maintained free from dirt. Grout composed of cement, sand, and water shall be forced under pressure into the grouting connections. Grouting shall be started in the lower connections and shall proceed until grout begins to flow from upper connections. Connections shall then be made to these holes and the operation continued to completion.

Apparatus for mixing and placing grout shall be of a type approved by the engineer and the Georgia D.O.T. and shall be capable of mixing effectively and stirring the grout and then forcing it into the grout connections in a continuous uninterrupted flow.

Liner plates shall be installed as soon as possible, but no more than five feet of tunnel shall remain unlined while tunneling operations are in progress. Not more than 1 foot of tunnel shall be left unlined at the end of the day's operation. The contractor shall locate the liner plates with grout couplings at the top of the tunnel at intervals not to exceed five feet. Additional plates with grout couplings shall be installed on each side of the tunnel between the top couplings.

After grouting is completed, pressure shall be maintained by means of stop cocks, or other suitable devices until the grout has set sufficiently. After the grout is set, grout holes shall be completely filled with dense concrete and finished neatly without evidence of voids or projections.

8.14.05. *Installation of Pipe.*

After the installation of the casing or tunnel is complete, the contractor shall install the pipeline by a method that has received prior approval of the designing engineer and the Authority.

A. Pipe Closure

The contractor shall close the ends of the casing with 4- inch brick walls, plastered with Portland cement mortar. Brick and mortar shall meet the requirements for manhole materials.

B. Tunneling Closure

A brick bulkhead shall be constructed at both ends of the tunnel with a drain at the lower end. The bulkhead shall be a three-course mortared brick wall, plastered with Portland cement mortar and waterproofed with asphaltic roofing cement. Brick and mortar shall meet the requirements for manhole materials.

8.14.06. *Boring Safety.*

The contractor shall provide all necessary bracing, bulkheads, and shields to ensure complete safety to all traffic at all times during the boring operation. All work shall be performed in such a manner as to not permanently damage the roadbed or interfere with normal traffic over it. The Authority will not be responsible and shall be saved harmless, in the event of delays to the contractor's work resulting from any cause whatsoever. All construction must meet or exceed OSHA requirements.

8.14.07. *Tunneling Safety.*

The contractor shall begin the tunneling operation in a pit, sheeted and shored as necessary and being at and proceeding from one end. The contractor shall observe all applicable requirements of all governing agencies and shall conduct the operations in such a manner that all work will be performed below the level of the roadbed. All work shall be coordinated and scheduled with all governing agencies. The contractor shall complete all tunneling work at one particular location before work is started at another location.

A temporary bulkhead against the face of the excavation shall be provided and placed during the cessation of work where the heading is within 20 feet of railroad tracks or highway pavement.

In the event that distress occurs to the roadway due to the tunneling operation, the contractor shall be required to submit a plan to repair the roadway. The plan must be acceptable to all governing agencies and the City.

All construction must meet or exceed OSHA requirements.

8.14.08. *Rip-Rap Materials Requirements.*

The contractor shall use either stone rip-rap or sand-cement rip-rap throughout the job. The rip-rap shall meet the following material requirements.

A. Stone Rip-Rap

Stone rip-rap shall be composed of sound, tough, durable stones resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. The stone's specific gravity shall be 2.0 or higher. The minimum weight of each individual stone shall be 50 pounds. The maximum allowable dimension for an individual stone shall be 24 inches. At least 50% of the stones shall have a minimum dimension of 12 inches.

The contractor shall embed the stone rip-rap neatly to form a compact layer at least 12 inches thick. The rip-rap shall be placed in such a way that the smaller stones are not segregated but evenly distributed. Chinking stones shall be placed in the crevices between the larger stones so that a dense, well-graded mass is produced.

B. Sand- Cement Bag Rip-Rap

Sand-cement bag rip-rap shall be composed of cement sacks or burlap bags having a capacity of from one to two cubic feet. Bags previously used for sugar or chemicals will not be acceptable. Bags shall be filled with a mixture of one part Portland cement to five parts sand.

The contractor shall embed the bags by hand to form a compact layer at least 12 inches thick. The bags shall be placed to form overlapping joints. The finished surface shall not deviate from that specified by more than three inches at any point.

Section 8.15. Stream & Ditch Crossing.

At all points where banks or streams or drainage ditches are disturbed by excavation or where natural vegetation is removed, the contractor shall carefully compact backfill and place rip-rap to prevent subsequent settlement and erosion.

This requirement applies equally to construction along the sides of a stream or drainage ditch, as well as the crossing of streams or drainage ditches. The contractor shall place rip-rap a distance of not less than 10 feet upstream and 10 feet downstream from any disturbed area. Actual distance of rip-rap will be determined by the inspector. Rip-rap shall be extended from one foot below the streambed to the top of the bank and shall be placed to conform with the natural slope of the stream bank.

The top of all pipe entering or crossing streams shall be at a sufficient depth below the natural bottom of the stream bed to protect the water line. In general, the following cover requirements must be met:

- A. One foot of cover is required where the water line is located in rock.
- B. A minimum of three feet of cover is required where the water line is not located in rock. The City, in its sole discretion, may require additional cover depending on the size and flow rate of the stream.
- C. The top of the water line shall be placed at least four inches below the bottom of the channel pavement for paved stream channels.

Water lines crossing streams shall be laid inside casing meeting the requirements of Section 8.15 of these specifications. The casing shall extend at least five feet beyond each stream bank. The contractor shall use either stone rip-rap or sand-cement rip-rap

throughout the job. The rip-rap shall meet the same material requirements as described in Section 8.5 above.

Section 8.16. Testing.

Record drawings meeting all requirements as stipulated must be received and approved by the City before a project can be released for testing.

The City reserves the right to continuously and/or periodically inspect construction methods to ensure compliance with these specifications. Unless other provisions have been specifically approved by the City, water lines and related facilities will be inspected and tested by the contractor with testing and line sterilization certified by the City before acceptance to the City's system.

8.16.01. *Testing Procedures.*

When a length of pipe approved by the City is ready for testing, the contractor shall fill the line with water, bleed out all air, and perform a leakage test.

A. 16.1.1 Preparation

The contractor shall provide a test pump, an accurate water meter, and all other accessories required to make the test. The contractor shall provide a corporation stop at each high point on the pipe to bleed off air. The contractor shall provide and remove all temporary bulkheads, plugs, and flanges required to perform the pressure test.

B. 16.1.2 Test Pressure and Leakage

The pipeline shall be tested at 250 PSI measured at the lowest point. The test shall be performed for a minimum of two hours. The main shall not have detectable pressure loss at any time during the two-hour period.

If leaks are detected, the contractor shall locate and repair all leaks and retest the line. If results are not totally satisfactory, the City may require testing for a longer period of time.

C. 16.1.3 Existing Valves

The contractor shall not operate valves in the existing system.

8.16.02. *Disinfecting Pipeline.*

The contractor shall disinfect all installed potable water lines and all other pipelines which may have been contaminated by the work.

A. Disinfection

The contractor shall prepare a one percent (1%) chlorine solution using high-test calcium hypochlorite (HTH) and place an adequate quantity of this solution into the water mains to obtain a minimum chlorine concentration of 50 mg/L. Application of the chlorine may be at the time of filling for pressure testing. At the end of 24-hours, the Authority shall test for chlorine residual; if found to be less than 25 mg/L, the contractor shall add chlorine solution, and the Authority shall re-test again after 24-hours. The following is the minimum quantity of solution required per 100 feet of pipeline to obtain the desired concentration:

<u>Pipe Diameter (inches)</u>	<u>Quantity (Gallons)</u>	<u>Strength (%)</u>
1	0.02	1
2	0.08	1
3	0.18	1
4	0.32	1
6	0.73	1
8	1.30	1
10	2.04	1
12	2.88	1
14	0.38	10
16	0.50	10
18	0.63	10
20	0.78	10
24	1.12	10
30	1.72	10

Flushing

After completing chlorination, the contractor shall flush the line with potable water and test for the amount of chlorine residual at the point of discharge until the chlorine residual is equal to the chlorine residual of the water used for flushing. The Developer, after notifying the City development official, shall allow the pipeline to remain full for 24 hours and take samples for bacteriological and turbidity examination. The developer shall provide the samples to Environmental Labs in Carrollton so that they can analyze these samples. All fees and costs associated with sample analytics shall be paid by developer. The results shall be provided to the City. Results must be acceptable to the State. If the samples are not satisfactory, the contractor shall perform additional sterilization until acceptable samples are obtained.

B. Sampling

Sampling determinations of chlorine residual for sterilization and flushing shall be performed by the City's laboratory personnel. The City shall be requested to perform such sampling and testing no less than 48 hours prior to the requested sampling time.

C. De-chlorination

Water shall be de-chlorinated per State Regulations.

Section 8.17. Protection & Restoration of the Work Area

8.17.01. General.

The contractor shall return all items and all areas disturbed, directly or indirectly, by work under these specifications to their original condition or better as quickly as possible after work is started.

8.17.02. Restoration of Man-Made Improvements.

The contractor shall protect or remove and replace, with the City's approval, all fences, piers, docks, walkways, mailboxes, pipelines, drain culverts, power and telephone lines and cables and other improvements that may be encountered in the work.

8.17.03. Cultivated Growth.

The contractor shall not disturb cultivated trees or shrubbery unless approved by the Authority. Any such trees or shrubbery, which must be removed, shall be heeled in and replanted under the direction of an experienced nurseryman.

8.17.04. Cutting of Trees.

The contractor shall not cut trees for the performance of the work except as absolutely necessary. Trees that shall remain in the work area shall be protected from damage from equipment. The contractor shall not store spoil from excavation against the trunks. The contractor shall remove excavated material stored over the root system of all trees within 30 days to allow proper natural watering of the root system. All damaged trees over three inches in diameter shall be repaired by an experienced nurseryman. All trees and brush that require removal shall be promptly and completely removed from the work area and disposed of by the contractor. No stumps, woodpiles, or trash piles will be permitted on the work site.

8.17.05. Grassing.

The contractor shall replant grass removed or damaged in residential areas using the same variety of grass and at the first appropriate season. Outside of developed areas, the contractor shall plant the entire area disturbed by the work in rye, fescue, Bermuda or other suitable ground cover upon the completion of work in the area. In all areas, the contractor shall promptly re-establish permanent grass to match or exceed original conditions.

8.17.06. Erosion Control.

Erosion and sedimentation control shall be per Georgia Environmental Protection Division standards and per the requirements of applicable local governmental standards. The contractor shall plan excavation work to prevent erosion and the washing of soil into adjacent streams. The contractor shall limit the amount of open excavation at any one time. Spoil shall be placed in the proper place and all natural water routes shall be kept open. Contractors must fully comply with erosion and sedimentation control act, and the National Pollutant Discharge Elimination System general permit, where applicable.

8.17.07. *Disposal of Rubbish.*

The contractor shall dispose of materials cleaned and grubbed during the construction of the project in accordance with the applicable codes and rules of the appropriate regulatory agencies, county, state and federal.

8.17.08. *Pollution Prevention.*

Contractors must prevent discharges of pollutants onto soils and into surface water where applicable. Contractor shall comply with Federal Petroleum spill prevention rules set forth in 40 CFR 11 and other relevant laws and regulations.

ARTICLE IX. PLANS AND PERMITS

Section 9.01. Purpose of article IX.

This article describes the approval and permitting process for construction of subdivisions and other land development projects and the procedures for amendments to the text of this development code.

Section 9.02. Overview—land development.

The following presents a summary of the plans and procedures involved in the land development approval and construction regulation process.

9.02.01. *Subdivision with public improvements.* The division of land into two or more lots that will require the construction or extension of public streets, water or other public facilities (other than the direct connection of buildings to existing facilities) shall be conducted as follows:

- a. Development plan approval is granted by the planning commission, upon review and formal acceptance of a development plan. This approval is valid for 12 months from the date of approval and will expire at the end of this time period unless one of the following approvals are secured prior to its expiration:
 1. A land-disturbance permit is granted;
 2. A development permit is granted;
 3. A driveway permit is granted;
 4. A building permit is granted;
 5. Construction plans have been submitted for review; or
 6. A certificate of project approval is issued.

Further, if no development activity occurs on the site pursuant to one of the above referenced permits or approvals during the 12 months immediately following issuance, or if development begins but then ceases for a period of 12 months, then the development plan approval shall expire.
- b. The preliminary plat shall conform to the design and layout shown in the approved development plan. Any significant deviation from the approved development plan shall be cause for rejection of the preliminary plat.
- c. A development permit is issued by the Development Official based on review and approval of a preliminary subdivision plat and the subsequent approval of the civil design and construction plans for construction of the subdivision.

- d. Receipt and approval by the City of accurate surveys of the record drawings of public improvements is required in order to allow filing of a final plat.
- e. Approval of final subdivision plat by the mayor and council will authorize recordation of the plat with the clerk of superior court.
- f. After recordation of the final plat, the lots may be sold and building permits on the lots may be obtained.
- g. No sooner than one year after recordation or 75 percent of build out, all public improvements shall be completed and will be inspected by the city for permanent dedication.

9.02.02. *Subdivisions not requiring public improvements.* The division of land into two or more lots, each of which will be adequately served by existing public streets, water and other public facilities, shall be conducted as follows:

- a. Approval of a final subdivision plat by the mayor and council will authorize recordation of the plat with the clerk of superior court.
- b. After recordation of the final plat, the lots may be sold and building permits on the lots may be obtained.

9.02.03. *Multi-family and nonresidential projects.*

- a. A Development Permit is issued by the Development Official based on review and approval of civil design and construction plans for construction of the project.
- b. A Building Permit is issued by the building official based on review and approval of architectural plans. Buildings falling under the authority of the state fire marshal shall be approved by the County fire department and state Fire Marshal prior to issuance of the building permit.
- c. Receipt by the City of accurate surveys of the as-built condition of all public improvements is required in order to authorize permanent water and/or sewer service.
- d. Permanent electric power and occupancy of the building is authorized by the Development Official based on final inspection and issuance of a certificate of occupancy.

Section 9.03. Project approval.

Preliminary plat for subdivision activity or a site plan for development of a multi-family or nonresidential project shall be approved by the planning and zoning commission and

subsequently approved by the mayor and council in accordance with the provisions hereof prior to the issuance of a development permit or initiation of any land disturbing or construction activities in order to assure compliance with all zoning requirements and conditions of zoning approval.

9.03.01. *Development plan required.* No preliminary plat or site development plan shall be approved by the mayor and council until the planning and zoning commission and has reviewed the preliminary plat or site development plan. Every development plan shall show the following:

- a. Name and address of the property owner.
- b. Name, address, and telephone number of the applicant.
- c. Date of survey, north point and graphic scale, source of datum, date of plan drawing, and revision dates, as appropriate.
- d. Proposed use of the property, if known.
- e. Location (Land District and Land Lot) and size of the property in acres (or in square feet if less than an acre).
- f. Location sketch of the property in relation to the surrounding area with regard to well known landmarks such as arterial streets or railroads. Location sketches may be drawn in freehand and at a scale sufficient to show clearly the information required, but not less than one inch equal to 2,000 feet. U.S. Geological Survey maps may be used as a reference guide for the location sketch.
- g. Zoning district classification of the subject property and all adjacent properties, and zoning district boundaries as appropriate.
- h. Man-made features within and adjacent to the property, including existing streets and names, city and county political boundary lines, and other significant information such as location of bridges, utility lines, existing buildings to remain, and other features as appropriate to the nature of the request.
- i. The proposed project layout including the approximate outline and location of all buildings, and the location of all minimum building setback lines, outdoor storage areas, buffers, parking areas and driveways.
- j. A statement as to the source of domestic water supply.
- k. A statement as to the provision for sanitary sewage disposal.
- l. The approximate location of proposed storm water detention facilities.

- m. Such additional information as may be useful to permit an understanding of the proposed use and development of the property.
- n. A rendering or elevation or photographs representative of similar structures, such that façade materials can be determined, printed on paper no smaller than standard letter size.

9.03.02. *Responsibility for project approval.*

- a. The Development Official is responsible for administering the review and approval process for preliminary subdivision plats and site plans.
- b. A preliminary plat or site plan may be prepared by a professional engineer, a registered land surveyor, or a landscape architect.

9.03.03. *Procedure for project approval.*

- a. An application for project approval may be processed independently or in conjunction with an application for issuance of a development permit.
- b. An application for project approval shall be submitted to the City. The application shall include:
 - 1) The name and address of the person requesting review.
 - 2) A properly completed application form, as furnished by the mayor and council, requesting review for project approval.
 - 3) Seven copies of the preliminary subdivision plat or site plan showing the entire ownership drawn to the specifications of this section.
 - 4) Payment of the applicable application and review fees as established by the mayor and council from time to time.
- c. The Development Official will review the application for completeness within seven days of submission. Incomplete applications will be returned to the applicant.
- d. Following receipt of the application, the Development Official will indicate on the drawing or in writing all comments to compliance with this development code.
- e. The owner is responsible for compliance with all codes, regulations and zoning requirements and for the satisfaction of all the noted and written comments.
- f. The Development Official shall not approve any preliminary subdivision plat or site plan that shows a lot or situation that would clearly require a variance in order to be reasonably usable, whether due to the presence of flood plain, unusual

configuration, zoning compliance, or lack of public utilities, without explicit grant of a variance.

- g. When the planning and zoning commission has determined that the preliminary subdivision plat or site plan is in compliance with the requirements, purpose and intent of this development code, it will be recommended for approval. The mayor and council will review the preliminary plat and/or site development plan and approve or disapprove said plan. Upon approval, the mayor will sign and date the certificate of project approval stamped or printed on a reproducible copy of the preliminary subdivision plat or site plan. One copy of the approved drawing will be transmitted to the applicant and one copy will be retained by the City.
- h. The certificate of project approval will remain in effect for a period of one consecutive year after which time will become null and void and a new certificate may be required if no permit has been issued or no development activity has begun.

9.03.04. *General standards for project approval.*

- a. The proposed name of the development and proposed street names shall not duplicate or too closely approximate, phonetically, the name of any other development or street in the city or Carroll County. All street names must be approved by Carroll County Map Room and 911. If shown to the contrary, the City may refuse to accept such development or street names. The development may use letter designations in place of proposed street names at the option of the applicant.
- b. The preliminary plat or site plan shall be prepared on a boundary survey of the entire tract to be eventually subdivided or developed showing the location of the boundaries and dimensions of the tract to be developed.
- c. The preliminary subdivision plat or site plan shall be clearly and legibly drawn at a standard engineering scale of not less than 100 feet to one inch. Sheet size may not exceed 48 inches by 36 inches nor be less than eight and one-half inches by 11 inches; however, the Development Official may approve other sheet sizes and graphic scales as appropriate.
- d. In subdivision of over 100 acres, preliminary plat specifications may be modified to exclude information relating to contours, and ground elevations, if in the judgment of the Development Official, presentation of detailed data relating thereto is not necessary to evaluate the entire subdivision proposal. In such cases, however, a long-range development schedule for the entire development and a preliminary plat in accordance with the specifications for the sections of the subdivision not excepted shall be submitted. It is the intent of the provision that in all cases sufficient information shall be provided for an adequate evaluation of the public service needs in the area.

9.03.05. *Preliminary plat or site plans requirements.* The preliminary plat or site plan must contain the following:

- a. Proposed name of development and its acreage.
- b. Name and address of the property owner and subdivider or developer.
- c. Name, address, and telephone number of the applicant.
- d. Date of survey, north point and graphic scale, source of datum, date of plan drawing, and revision dates, as appropriate.
- e. Proposed use of the property.
- f. Location (Land District and Land Lot) and size of the property in acres (or in square feet if less than an acre).
- g. Location sketch map of the property in relation to the surrounding area with regard to well-known landmarks such as arterial streets, railroads or others. Sketches may be drawn in freehand and at a scale sufficient to show clearly the information required, but not less than one inch equal to 2,000 feet. US. Geological Survey maps are used as a reference guide for the location sketch.
- h. Name and boundary of former approved subdivision if any or all of the land in the preliminary subdivision plat or site plan has been previously subdivided, showing boundaries of the lots to be resubdivided.
- i. Zoning district classification of the subject property and all adjacent properties, and zoning district boundaries as appropriate.
- j. Rezoning or special use application number, date of approval, and conditions of approval, as applicable.
- k. Zoning Variances obtained on the property by application number, date of approval, and conditions of approval, as applicable.
- l. Natural features. Natural features within the property, shall be indicated, including:
 - 1) Ground elevations on the tract based on field surveys or photogrammetric methods from aerial photographs. The basis for the topographic information shall be shown. Contour lines shall be drawn at intervals of not more than two feet. Contour lines shall be based on a datum plane as approved by the engineering department.

- 2) Drainage channels, bodies of water, wooded areas and other significant natural features such as rock outcroppings and wetlands.
 - 3) On all watercourses leaving the property, the direction of flow shall be indicated, and for all watercourses entering the tract, the direction and acreage of the drainage area above the point of entry shall be noted.
 - 4) A notation clearly stating the water surface elevation of the 100-year flood in relation to mean sea level as approved and accepted by the City. Any lands below this elevation shall be designated on the plat by a heavy contour line, depicting the one hundred-year flood level.
- m. Man-made features. Man-made features within and adjacent to the property, including street right-of-way and pavement widths, names of existing streets, all easements, city and county political boundary lines, and other significant information such as location and dimensions of bridges, utility lines and structures, existing buildings to remain, culvert and other features.
- n. The proposed project layout including:
- 1) For subdivisions, lot lines and street right-of-way lines, with proposed street names or letter designations and right-of-way widths, along with the front principal building setback line and the dimension of its length on each lot (i.e., the lot width) and land to be reserved for public uses.
 - 2) For multi-family and nonresidential development site plan, the outline and location of all buildings, and the location of all minimum building setback lines, outdoor storage areas, buffers, parking areas, driveways, curb cuts, and designated fire lanes.
- o. The proposed phasing of the development if it is proposed to be built in sections.
- p. A statement as to the provision for sanitary sewage disposal. For those properties that will not be served by a public sanitary sewerage system, location and results of percolation tests as required and approved by the county health department are to be shown.
- q. The approximate location of proposed storm water detention facilities.
- r. The location and width of all sidewalks.
- s. Such additional information as may be reasonably required to permit an adequate evaluation of the development activity proposed in the application.

Section 9.04. Civil design construction plans.

9.04.01. General requirements.

- a. Persons seeking to undertake development activity shall not commence or proceed until civil design and construction plans are approved and a development permit is issued by the City. The process for approval of a development permit is presented in the following section, below.
- b. The civil design and construction plans for a project shall conform in all respects with the requirements of this development code, and shall include each of the plans in this section as appropriate to the project. These include:
 - 1) Erosion and sedimentation control plan;
 - 2) Grading plan;
 - 3) Storm water management plan;
 - 4) Street improvement plan; and
 - 5) Landscaping, buffer and tree conservation plans.
 - 6) Public utility plans-Water and Sanitary Sewer.
- c. All civil design and construction plans and supporting studies shall be prepared by or under the supervision of a professional engineer registered in the State, except that the Landscaping, Buffer and Tree Conservation plans are to be prepared by or under the supervision of a professional landscape architect.

9.04.02. *Erosion and sedimentation control plan.* See the “soil erosion and sedimentation control” article of the Temple City Code for plan requirements.

9.04.03. *Grading plan.*

- a. Grading plans shall identify existing and proposed topographic contour lines at 2-foot intervals, minimum.
- b. Grading plans shall outline any area that is required to remain undisturbed, such as a natural buffer or tree protection area (as provided under the “landscaping, buffers and tree conservation” article of this development code) or greenway (see “greenways” under the “land development activities” article of this development code) and shall identify and describe the protective fencing, staking or ribbon to be placed surrounding such area.
- c. If the property contains any area of special flood hazard (the 100-year flood plain), grading plans in and around the flood plain shall be designed in conformance to all requirements relating to flood damage prevention under the “project design standards” article of this development code.

9.04.04. *Storm water management plan.* –See Section 8

9.04.05. *Street improvement plan.*

- a. Street plan and profile sheets of all proposed streets shall be required, shown complete in both plan view and profile at the same horizontal scale. Profiles shall be drawn on standard plan and profile sheet with plan section showing street layout, pavement and right-of-way width, curvature, and required drainage facilities. Typical street sections shall be provided for street widening.
- b. The following shall be included on each plan and profile sheet:
 - 1) Plan:
 - a) Street width (back of curb to back of curb);
 - b) Curve data (including P.I.'s, P.C.'s and P.T.'s);
 - c) Drainage structures;
 - d) Centerline stationing;
 - e) Lot numbers;
 - f) R.O.W. dimensions;
 - g) Street names;
 - h) North arrow and scale.
 - 2) Profile:
 - a) Existing ground profile;
 - b) Finished street profile;
 - c) Finished grade elevations every 50 feet;
 - d) Percent of grade;
 - e) Vertical curves;
 - f) Storm drains in the street;
 - g) Sanitary sewer lines in the street (may be shown on separate sheet);

- h) Vertical and horizontal scales.
- c. Where sanitary sewer or storm water sewers are to be installed within a street, the grade, size, location and bedding class of pipe, and the location and invert elevation of manholes shall be indicated on the street profile.
- d. Center line profiles covering streets that are extensions of existing streets shall include elevations at 50 foot intervals for such distance as may be adequate to provide continuity consistent with the standards required by this development code for street improvements, but no less than 200 feet.
- e. All plan elevations shall be coordinated and sited into U.S. Coast and Geodetic Survey or Georgia Department of Transportation bench marks where feasible or into reference monuments established by the Federal Emergency Management Agency.
- f. A street striping plan, showing striping in accordance with the *Manual on Uniform Traffic Control Devices*, latest edition as published by the Federal Highway Administration, shall be prepared for any street newly constructed or widened to four or more lanes.

9.04.06. *Landscaping, buffer and tree conservation plans.*

- a. *Landscaping, buffer and tree conservation plans; in general.*
 - 1) All proposed landscaping as required by the “landscaping, buffers and tree conservation” article of this Code, and trees to be retained or planted as required by the tree conservation provisions of the same article, shall be illustrated.
 - 2) The plans may be consolidated on one sheet or drawn separately. Each plan is to include:
 - a) Project name, land district, land lot and parcel number, north arrow and scale.
 - b) Developer’s name, address, and telephone number.
 - c) The name, address and telephone number of the professional landscape architect or urban forester responsible for preparation of the plan and the seal or statement of professional of said person, (which may be attached separately).

- b. *Site landscaping plan.* A site landscaping plan shall be prepared whenever any frontage landscaping strip, side or rear yard landscaping area, parking lot landscaping or street-side landscaping is required by this development code or conditions of zoning approval. The site landscaping plan is to show:
- 1) Scale at one inch = 20 feet to 50 feet.
 - 2) North reference.
 - 3) The location and size of all utilities on the site.
 - 4) The location of all-existing and proposed parking areas, sidewalks and other paved surfaces.
 - 5) The location of all existing and proposed buildings and structures.
 - 6) The boundaries of each required landscape strip or area.
 - 7) A planting plan showing the location, size and common name of proposed plant materials.
 - 8) The location, size and common name of all existing plant materials to be retained that contribute to meeting the minimum requirements of this Code for landscaping.
- c. *Buffer plan.* A buffer plan shall be prepared for any structural buffer required in accordance with the specifications and standards contained in this development code. Plans shall not be required for natural buffers, which are to be shown on the grading plan, but must be delineated on the buffer plan sheet. The buffer plan shall show:
- 1) The boundaries of each required buffer area.
 - 2) All grading and construction details for earthen berms, walls and fences that are proposed as part of the visual screen.
 - 3) A planting plan showing the location, size and type of proposed plant materials.
 - 4) The location, size and common name of all existing plant materials to be retained that contribute to meeting the minimum requirements of this Code for buffers.

- 5) Typical cross-sections of the buffer illustrating the improvements proposed and typical location of vegetation. At least one cross-section shall be provided for each buffer.
- d. *Tree conservation plan.* A Tree Conservation Plan must be submitted along with the other required documents for the issuance of a land disturbance, construction, or other applicable permit by the Development Official. Tree Conservation Plans must be prepared by a professional Landscape Architect, Urban Forester or Arborist in accordance with the Plans and Permits Article of this Development Code.

The Tree Conservation Plan must be shown on a copy of the preliminary plat or site plan, drawn to the same scale as the other plan documents prepared for a land disturbance permit on the property, and shall cover the same area.

The Tree Conservation Plan shall comply with the Community Planting and Establishment Guidelines of the Georgia Forestry Commission, current edition, as applicable.

The tree conservation plan shall show the following:

- 1) The extent of the development site or disturbed area.
- 2) Significant trees.
 - a) All significant trees (as defined in this development code) that are proposed to be removed.
 - b) All significant trees that will remain on the development site and be protected during construction.
- 3) Utility lines.
 - a) Locations of proposed on-site underground utility lines.
 - b) Locations of other on and off-site utility lines. Indicate areas where trees cannot be planted because of interference with (1) existing or proposed utilities on public rights-of-way or on utility rights-of way or easements and (2) existing utilities on adjoining properties.
- 4) Delineation of all minimum yard areas, buffers, and landscape areas as required by this development code, the zoning ordinance or conditions of zoning approval.
- 5) Total acreage of the site and total acreage of the entire property.

- 6) Delineation of all areas located within the 100-year floodplain.
- 7) Existing trees to be retained in tree protection areas: Trunk location size (to the nearest inch in diameter at four and one-half feet above the ground) of individual trees proposed to remain for credit toward meeting the minimum tree density standard on the property. Groups of three or more trees whose drip line combine into a single tree protection area may be outlined as a group and their number, by diameter, shown on a summary table. If the number and size of all existing trees to remain on the site exceeds the required tree density standard for the entire site, only those trees required to meet the minimum tree density standard must be shown. All tree protection areas are to be outlined and labeled.
- 8) Tree protection measures:
 - a) A detail or description of the protective tree fencing, staking or continuous ribbon and the location of such measures, which at a minimum shall follow the drip line of all trees to be retained along the adjoining areas of clearing, grading, or other construction activity.
 - b) Measures to be taken to avoid soil sedimentation intrusion into tree protection areas and the location of such devices.
 - c) Proposed location of temporary construction activities such as equipment or worker parking, material storage, burn holes, equipment wash down areas and entrance pads.
 - d) Proposed type and location of any tree save area signs or other pertinent signage.
- 9) If new trees are proposed to be planted in order for the property to achieve the required tree density standard, the new trees shall be shown and their spacing and diameter identified, to the extent needed to achieve the minimum requirements. Trees grouped together in tree planting areas may be listed on the summary table by total number in grouping, by size.
- 10) A summary table of the number of existing trees remaining and new trees to be planted, by diameter to the nearest inch shall be shown along with calculations showing the tree density achieved for the site. Additional credits shall be noted where applicable. Groupings of trees in tree protection areas and areas for new tree planting may be keyed to the summary table by area rather than having each tree individually labeled on the plan.

9.04.07. *Public utility plans*- Such plans shall be required and completed in accordance with Section 8 of this Development Code.

Section 9.05. Development permit.

9.05.01. Responsibility for development actions.

- a. No person shall conduct any land-disturbing activity, including grading, clearing and grubbing, tree clearance, land development or project construction without first obtaining a development permit from engineering department to perform such activity.
- b. Any person proposing development shall first submit to the engineering department an application for a development permit, including all civil design and construction drawings required by this development code. The application must be authorized by the property owner.
- c. The City is responsible for administering the review and approval process for issuance of development permits. The City shall forward a copy of the development permit application, including the civil design and constructions drawings for the project, to other departments, the Soil and Water Conservation Commission District, Georgia EPD, the Georgia Department of Transportation or others as appropriate, for their review and comment. The City shall provide all comments to the applicant for resolution, and shall issue the development permit when all requirements of this development code are met.
- d. Approval of plans by the City shall not imply or transfer acceptance of responsibility for the application of the principles of engineering, architecture, landscape architecture or any other profession, from the professional, corporation or individual under whose hand or supervision the plans were prepared.
- e. The completion of inspections and authorization for work continuation shall not transfer responsibility for the quality of the work performed or materials used from the owner, nor imply or transfer acceptance of responsibility for project design or engineering from the professional, corporation or individual under whose hand or supervision the plans were prepared.
- f. No development permit shall be interpreted to relieve any owner of the responsibility of maintaining full compliance with all applicable codes, ordinances and other regulations. Any development permit issued in error or in contradiction to the provisions of this development code shall be considered to have been null and void upon its issuance.
- g. Liability.
 - 1) The approval of an erosion and sedimentation control plan or other plans under the provisions of this development code, the issuance of a development permit, or the compliance with any other provisions of this development code shall not relieve any person from the responsibility for damage to any person or property otherwise imposed by law nor impose any liability upon the mayor and council or the Soil and Water Conservation District or Georgia EPD for damage to any person or property.

- 2) The fact that any activity for which a development permit has been issued results in injury to the property of another shall neither constitute proof of, nor create a presumption of, a violation of the standards provided for in this development code or the terms of the development permit.

9.05.02. *Development activities authorized.* A development permit shall be issued to authorize all activities associated with development activity regulated by this Code, subsequent to the issuance of a soil disturbance permit, including, but not limited to, the construction of such improvements as streets, surface parking areas and drives, storm water drainage facilities, sidewalks, or other structures permanently placed on or in the property except for buildings, signs, or other structures requiring the issuance of a building permit.

9.05.03 *Process for approval of development permit.* An application for a development permit may proceed simultaneously with an application for a preliminary subdivision plat or site plan, but may not be issued prior to project approval of such plat or plan by the City.

- a. The application for a development permit shall be submitted to the City and must include the following:
 - 1) Application on the form furnished by the City, requesting review for issuance of a development permit.
 - 2) Six copies of:
 - a) The preliminary plat or site plan requesting or reflecting project approval.
 - b) The civil design and construction drawings prepared in conformance with the specifications and standards in this development code.
 - 3) Payment of any development permit fee, as established from time to time by the mayor and council.
- b. The application will be checked for completeness within 28 days of its submission. Incomplete applications, as determined in the sole discretion of the Development Official, will be returned to the applicant.
- c. Upon acceptance of a development permit application, the City shall refer the soil erosion and sedimentation control plan to the Soil and Water Conservation District or Georgia EPD for its review and approval or disapproval concerning the adequacy of the erosion and sedimentation control plan. No development permit will be issued unless the plan has been approved by the District or Georgia EPD, and any variances and bonding, if required, have been obtained.

- d. The applicant may be required by the City to secure development approval from other agencies if they are affected by the development. Development approval may be required from but not limited to:
 - 1) County health department
 - 2) Soil and Water Conservation District
 - 3) Georgia Department of Transportation
 - 4) Georgia Department of Natural Resources
 - 5) US Army Corps of Engineers
 - 6) US Environmental Protection Agency/ Georgia EPD
- e. Upon receipt of comments from other departments and agencies, the City will indicate on a copy of the civil design and construction drawings or in writing all comments related to compliance with this development code, conditions of zoning approval, and other regulations or ordinances, as appropriate.
- f. The City will forward its comments to the applicant.
- g. The applicant will be responsible for compliance with all codes, regulations and zoning requirements and for the satisfaction of all comments received. The owner will also be responsible for obtaining approval from all other agencies affected by the project.
- h. No development permit will be issued unless the applicant provides a statement by the county tax commissioner's office certifying that all ad valorem taxes levied against the property and due and owing have been paid.

9.05.04. *Required performance surety.*-See Section 8

9.05.05. *Issuance of development permit.*

- a. Following satisfaction of all comments, receipt of approvals from all affected agencies and receipt of all required bonds, the engineering department shall issue a development permit authorizing development activities to begin based on the approved civil design and construction drawings.
- b. No development permit shall be issued unless the erosion and sedimentation control plan has been approved by the Soil and Water Conservation District or Georgia EPD, project approval has been granted by the mayor and council, and the City has affirmatively determined that the plan is in compliance with all

requirements of this development code. If the development permit is denied, the reason for denial shall be furnished to the applicant.

- c. If the tract is to be developed in phases, then a separate development permit shall be required for each phase.
- d. Approved civil design and construction plans. Three sets of reviewed plans shall be retained by the city for record purposes. All plans on the project site for the purpose of construction by contractors, subcontractors or the developer must be plans that are the plans most recently approved by the city as part of the current development permit. No construction other than clearing or rough grading may take place prior to review of the construction plans and then only if the developer has an approved erosion control plan.
- e. Deviation from plans. Upon completion of review of the civil design and construction plans, no deviations from the reviewed plans shall be allowed without a resubmittal of the plans indicating the necessary, along with any resubmittal fee as may be set by the mayor and council from time to time.
- f. A holder of a permit shall notify any successor in title to him or her as to all or any portion of the property affected by the approved plan regarding the conditions contained in the permit. Transfer of title to any permitted property, prior to termination of the permit, shall not act to release the original title and permit holder from liability for compliance with the terms of this chapter, unless and until such time as:
 - 1) A new permit has been issued to the successor in title; or
 - 2) The permit has been transferred to the successor in title as follows:
 - a) The successor in title has submitted a request to the issuing authority in writing that the permit be transferred to him or her; and
 - b) The successor in title has complied with the bonding requirements of this section; and
 - c) The city has approved transfer of the permit in writing. Any transfer of a permit under the authority of this subparagraph shall bind the successor permit holder to the same plan, requirements, variances, and permit conditions as the former permit holder. All successors in title to permitted properties shall request in writing a transfer of the permit or shall apply a new permit contemporaneously with their receipt of title to the permitted property, or within 20 days thereafter; failure of a successor in title to comply with this requirement, whether or not the permit of the former title holder has been terminated, shall subject the successor in title to any and all penalties prescribed by this development code.

- g. Maintenance of all soil erosion and sedimentation control measures and practices, whether temporary or permanent, shall be at all times the responsibility of the owner.
- h. Subsequent to issuance of a permit, and after all land-disturbing activity has ceased and the property has been stabilized to a permanent and continuous state of compliance with this chapter, the city shall inspect the property and shall terminate the permit and release the requirements for bond and/or letter of credit required by this section. The city shall make such inspections routinely in conjunction with inspections for release of paving bonds issuance of certificates of occupancy where there is or has been construction in progress on the permitted property. For each other permitted properties, inspections shall be made pursuant to request of the permit holder after payment of any required fees.
- i. The development permit may be suspended, revoked or modified, as to all or any portion of the land affected by the plan, upon finding that the holder or his successor in title is not in compliance with the approved erosion and sedimentation control plan or that the holder or his successor in title is in violation of this development code.

9.05.06. *Expiration of development permit.*

- a. A development permit shall expire if the development activity described in the permit is not begun within 12 months from the date of issuance.
- b. Any development permit that has expired may be renewed by the City within six months of expiration. If a development permit has expired for more than six months, the applicant shall be required to apply for a new development permit under the development permit approval process of this development code, unless work has been continuing under original approval with no work stopping for more than 30 days.

Section 9.06. Driveway permit.

- a. No driveway connecting to a public street or a right-of-way or public property shall be required or installed without first having approval from the City. If the driveway connects to a State or U.S. numbered highway, approval of the Georgia Dept. of Transportation shall be required prior to city approval.
- b. Applications may be made to the City for local streets, or to the Georgia Department of Transportation on State U.S. numbered highways and other streets over which DOT maintains access control.
- c. A permit shall expire for work not started within 90 days or completed within nine months after issuance of a permit, and a new permit shall be required before beginning or completing the work.

Section 9.07. Final subdivision plat.

9.07.01. Responsibility.

- a. Development Official shall be responsible for coordination of the approval process for a final subdivision plat.
- b. The final subdivision plat shall be certified and sealed by a land surveyor registered in the State.
- c. The owner is responsible for compliance with all requirements of this development code. Approval of a final subdivision plat and acceptance of the public improvements and dedications therein shall not relieve the owner of this responsibility.

9.07.02. Procedures for final plat approval.

- a. Prior to submission of an application for final subdivision plat approval, either:
 - 1) All public improvements shall have been properly installed and completed in accordance with all requirements and standards of this development code (other than traffic signs, street name signs, street striping, and signalization) and as-built surveys of the improvements shall have been approved by the city engineer as required in the “land development activities” article of this Code; or,
 - 2) The City, through approval by the mayor and council, may, in its sole and absolute discretion, accept a guarantee in lieu of completed improvements as provided under the “project design standards” article of this development code.
- b. An application for a final subdivision plat approval shall be made to the City. The application shall include:
 - 1) The name and address of the person to whom the notice of approval shall be sent.
 - 2) A properly completed application form, as furnished by the City, requesting final subdivision plat review.
 - 3) Seven copies of the final subdivision plat drawing prepared in conformance with the specifications in this section, the original of which shall be drawn in permanent ink on cloth or film.

- 4) Payment of all applicable final subdivision plat filing and recording fees, as established by the mayor and council from time to time.
- 5) Payment for materials and installation of traffic signs and street name signs. Payment of the cost of street striping or signalization, if required and not completed by the owner, shall also be included in the application.
- 6) A maintenance bond providing adequate surety for the maintenance of all public improvements required by this development code in the subdivision for a period of 24 months following the date of approval of the final plat.
 - a) Upon submission of the final plat, the subdivider must have proof in writing that a maintenance bond or cash deposit in an escrow account in the City of Temple's name in an amount of no less than \$300.00 per lot, has been provided, payable to the city to repave and repair all roads, storm sewers, and appurtenances in said subdivision. The amount of the bond, or cash deposit be set by the Development Official after taking into account the width of the road, the paving process used, and any other reasonable standards. The duration of aforementioned bond or cash deposit shall be for the latter of: (i) 24 months from the date of final plat approval by the mayor and council; or (ii) until the contemplated structures or buildings on at least 80 percent of the lots in the subdivision are completed or "built out", as determined by the Development Official.
 - b) All repaving, and repair to all roads, storm sewers, and appurtenances in said subdivision that shall be completed within 24 months of final plat approval by mayor and council or when the completed structures or buildings on at least 80 percent of the lots in a subdivision are completed or "built out" as determined by the Development Official, whichever occurs sooner.
- 7) A copy of documents showing incorporation of a mandatory property owner's association for all parcels in the subdivision, and showing recorded subdivision covenants providing for private payment responsibility for the next twenty years for utility service and maintenance for any streetlights required by this ordinance, and lien capability upon any parcel for failure to pay.
- 8) Photographs showing completion and installation of all amenities required by the Zoning Ordinance or by zoning special stipulations applicable to the subject property, such as recreational facilities or pedestrian trails; exceptionally, developments of more than 25 acres may be final platted in multiple phases, and proof of completion and installation of zoning amenities may be submitted not later than final platting for more than half the acreage of the total development.

- 9) For any application which includes combination of lots, a copy of a single recorded deed showing the applicant(s) as owner(s) of the subject lots.
- c. The City shall review the application for completeness at the time of submission. Incomplete applications will be returned to the applicant.
- d. Within five weeks following receipt of the application, the City shall indicate on the drawing or in writing all comments related to compliance with this development code.
- e. The owner shall be responsible for compliance with all codes, regulations and zoning requirements, and for the satisfaction of all the noted and written comments of the City. Resubmission of all revised drawings shall be made to the City.
- f. When all of the requirements of this development code, and any conditions of zoning approval, have been met, the plat shall be submitted to the City, and upon approval by the mayor and council, the mayor shall sign and date the certificate of final plat approval stamped or printed on a reproducible copy of the final subdivision plat.
- g. Once the final subdivision plat has been so certified, an electronic copy in a format acceptable to the engineering department is to be submitted to the City, and the plat shall be recorded by the City with the clerk of superior court.
- h. Subsequent to the recording of the final plat, one copy with all certificates endorsed thereon shall be retained with the records of the City. The Map book, volume and page numbers where the plat is recorded shall be indicated on the copy.

9.07.03. General standards for final plats.

- a. The final subdivision plat shall be drawn on an appropriate material and sheet size, and using minimum line weights and letter heights as required by Georgia law for the recordation of maps and plats (O.C.G.A. 15-6-67), and as acceptable to the clerk of superior court.
- b. The final subdivision plat shall substantially conform to the preliminary subdivision plat and may constitute only that portion of the approved preliminary subdivision plat that the owner proposes to record at any one time, provided that such portion conforms to the requirements of this development code.

9.07.04. Final plat requirements. The final subdivision plat shall contain the following information:

- a. All data required by Georgia law pertaining to the recordation of maps and plats (O.C.G.A. 15-6-67).
- b. Name of the subdivision.
- c. Street names including both the name and the suffix, such as “street,” “avenue,” etc.
- d. Accurate location, material and description of monuments and markers.
- e. Name of the former subdivision if any or all of the property has been previously subdivided.
- f. Location sketch map of the property in relation to the surrounding area with regard to well-known landmarks such as arterial streets, railroads or others. Sketches may be drawn in freehand and at a scale sufficient to show clearly the information required, but not less than one inch equal to 2,000 feet. US. Geological Survey maps may be used as a reference guide for the location sketch.
- g. Lot lines with dimensions to the $\frac{1}{100}$ foot, necessary internal angles, arcs, and chords and tangent or radii or rounded corners.
- h. Building front setback lines with dimensions as to length across each lot and distance from the street right-of-way.
- i. Lots or sites numbered in numerical order and blocks lettered alphabetically.
- j. Location, dimensions and purpose of all easements, including drainage and slope easements, if required, and any areas to be reserved, donated, or dedicated to public use.
- k. A statement of the protective covenants, if they are brief enough to be put directly on the plat; otherwise, a statement that the subdivision is subject to protective covenants and stating the plat book number and page number at which the covenants are recorded in the office of the clerk of superior court.
- l. The extent of any area of special flood hazard, as defined in this development code. A notation clearly stating the water surface elevation of the 100-year flood in relation to mean sea level as approved and accepted by the city. Any lands below this elevation shall be designated on the plat by a heavy contour line, depicting the one hundred-year flood level.
- m. The width and the former widths, if pertinent, of all rights-of-way and easements adjacent to or crossing the property or adjacent to any point of reference.

- n. Street centerlines showing angles of deflection and standard curve data of intersection, radii, length of tangents and acres, and degree of curvature with basis of curve data.
- o. All land lot lines, land district lines, land section lines, and city and county boundaries intersecting or adjacent to the surveyed property shall be indicated by lines drawn upon the plat with appropriate words and figures.
- p. All plats shall show the state plane coordinates of at least two permanent monuments thereon, when a United States Coastal and Geodetic Survey monuments is within 500 feet of any point on the property platted, or any point of reference shown thereon.

9.07.05. *Surveyor and owner certificates.* Each final subdivision plat shall carry the following certificates printed or stamped on the plat. The original certificates on the reproducible copy of the final plat shall be signed and dated in blue ink.

- a. Surveyor's certificate, to read and be completed as follows

SURVEYOR'S CERTIFICATE

It is hereby certified that this plat is true and correct and was prepared from an actual survey of the property by me or under my supervision; that all monuments shown thereon actually exist and their location, size, type and material are correctly shown

The field data upon which this plat is based has a closure precision of one foot in _____ feet, and an angular error of _____ per angle point, and was adjusted using _____ - rule.

This plat has been calculated for closure and is found to be accurate within one foot in _____ feet, and contains a total of _____ acres.

By (name): _____

Registered Georgia Land Surveyor No . _____

Address: _____

Telephone Number: _____

Date: _____

- b. Surveyor's Seal. The reproducible final subdivision plat drawing shall bear the original signature, in blue ink, of the registered land surveyor placed across the surveyor's seal in order to be valid and recordable.

- c. Owner's certificate, to read and be completed as follows, and signed in blue ink on the original drawing:

OWNER'S CERTIFICATE

State of Georgia

County of Carroll

The undersigned certifies that he or she is the owner of the land shown on this plat and that the plat and the public improvements contained therein or associated therewith meet all applicable requirements and standards of the Temple Development Code. The owner further acknowledges this plat and allotment to be his free act and deed, and dedicates to the public forever areas shown or indicated on this plat as streets, easements or other public use areas, and all water system and other public improvements as depicted on the as-built surveys for this subdivision, approved on (date).

Owner's name: _____

Owner's address: _____

Date: _____

(Owner's signature) _____

9.07.06. *Certificate by health department.* Certification by the County health department that the proposed septic system installed or proposed to be installed fully meet the requirements of the health department's regulations. The county health department certification statement shall include written notice that each lot not on public sewer must have a septic tank permit to the start of construction. For developments with public sewerage and public water systems this certification may be omitted.

9.07.07. *Certificate of final subdivision plat approval.* The following shall be stamped or printed on the final subdivision plat for execution upon its approval by the city.

CERTIFICATE OF FINAL PLAT APPROVAL

All requirements of the Temple Zoning & Development Code having been represented as being fulfilled by this plat and the related Record surveys approved on (date), this plat is hereby approved for reduction by the clerk of superior court. This approval further recognizes the owner's offer of dedication of all areas and public improvements shown thereon and on said Record surveys on behalf of the public, subject to maintenance and guarantee by the owner for two years from the date of this approval.

(Signature of the Mayor of Temple, Georgia)

Date _____ -

9.07.08. *Acceptance of public improvements.*

- a. If construction of any required improvements was deferred at the time of final plat approval, said work must be completed during the 1-year maintenance period for the subdivision.
- b. Prior to expiration of the maintenance period, a final acceptance inspection of the public improvements shall be conducted by the City.
- c. The owner must correct all defects or deficiencies in materials or workmanship and make such repairs as necessary to approximate the as-built condition of the improvements.
- d. Upon certification by the City that the public improvements depicted on the Record surveys are in conformance with the specifications of this development code and are in good repair, the City Administrator shall release the maintenance bond and accept the public improvements into perpetual maintenance.

9.07.09. *Revisions to recorded final plats.*

- a. *Procedure for revising final plat.*
 - 1) When it becomes necessary to revise a recorded final plat due to some error, required adjustment, or desired adjustment, the developer shall confer with the city engineer and other city departments as necessary to verify if the proposed revision will comply with the requirements of the zoning ordinance and this development code.
 - 2) If it is established that the revision is feasible, the developer shall have the necessary corrections made on the original Mylar of the final plat. The subdivision name, date and book and page number of the original recording shall be noted on the new plat.
 - 3) The revised plat shall be filed with the City, along with any filing fee as may be established by the mayor and council from time to time. The City shall forward this plat to the proper city department that would be involved in checking and certifying the revision.
 - 4) Upon receipt of certification by the proper authorities in the various city departments involved, the revised plat shall be signed by the mayor.
 - 5) The approved revised plat will be recorded by the City and returned to the developer.

- 6) Any revised plat that does not receive approval shall be returned to the developer with written notification stating the reason for denial attached thereto. The developer may appeal any denial to the board of adjustments and appeals.
- b. *New drawing required.* If the original final plat is not available, it will be necessary to prepare a new recordable drawing of that portion of the subdivision being revised showing all requirements listed for a final subdivision plat under this section.
- c. *Explanation of revision.* Revisions and a notation explaining these revisions shall be clearly and legibly shown in ink on the revised plat.
- d. *Certificate of final subdivision plat revision.* The revised plat shall show the following wording in ink:

CERTIFICATE OF FINAL SUBDIVISION PLAT REVISION

This revised subdivision plat is hereby approved as to the revision shown on it, subject to any applicable Protective Covenants and continuation of that portion of the owner's two-year maintenance and guarantee period that has not expired since initial approval and recording of this final subdivision plat.

_____ Date _____ -

(Signature of the Mayor of Temple, Georgia)

- e. *Protective covenants.* All changes shall be bound by the protective covenants on the original final plat and a statement to that effect shall be noted in ink on the revised plat unless noted otherwise.
- f. *Additional information.* Other data that may be required such as a final engineering design report on proposed revisions and such other certificates, affidavits, endorsements, or dedications as may be required by city officials in the enforcement of this development code.

Section 9.08. Building permitting.

9.08.01. *Procedures to obtain a building permit.* A building permit issued by the City is required in advance of the initiation of construction, erection, moving or alternation of any building or structure in accordance with the City requirements. A building permit shall be issued only on a legal lot of record. No building permit shall be issued for a lot in a proposed subdivision before filing for recordation of the final plat, except for a single permit issued for the entire tract proposed for subdivision. All structures shall comply with the requirements of this development code, whether or not a building permit is required.

9.08.02. *Procedure for approval.* The Development Official is responsible for administering and enforcing the building codes of the city.

- a. Prior to issuance of a building permit the owner shall have received a development permit if required by this development code and the final plat shall have been approved and filed for recording.
- b. Except for single-family residential dwellings in an approved subdivision for which the final plat has been filed for recordation, zoning verification shall be obtained from the planning department. The following shall be attached to the zoning verification application:
 - 1) For a single-family detached or two-family dwelling, a plat or other indication of the location of the lot.
 - 2) For a multi-family or non-residential building, the site plan for which project approval was granted by the mayor and council.

9.08.03. *Certificate of occupancy.*

- a. It is unlawful to use or occupy or permit the use or occupancy of any part of a building, structure, or premises, until a certificate of occupancy has been issued that the building or structure or premises conforms to the requirements of the building code and this development code.
- b. A certificate of occupancy is required for any of the following:
 - 1) Occupancy and use of a building or structure constructed or enlarged.
 - 2) Changes in use of existing buildings to uses of a different classification.
 - 3) Any change in use of a nonconforming use, lot or building.
- c. Permanent electric power may not be supplied to any structure until a certificate of occupancy shall have been issued and the power company contacted by the Development Official.
- d. A record of all certificates of occupancy shall be maintained by the building official and a copy shall be furnished upon request to any person.

Section 9.09. Sign permits

See the “sign regulations” article of this development code for requirements regarding sign permits.

Section 9.10. Development of regional impact.

9.10.01 *Types of approvals covered.* The provisions of this section apply to any type of governmental action requested by a private party related to a development project, such as project approval, issuance of a development or building permit, or hook-up to a public utility. No permits shall be given until the DRI process is complete.

9.10.02. *Submission to Regional Commission.* Any Development of Regional Impact (DRI) shall be submitted by the city to the Local Regional Commission (RC) when there is an application for a permit or approval to the city. Once the RC has accepted the completed form and has made an official determination that the project is a DRI, the 45-day review period officially begins. The applicant will be responsible for providing the city with all background information for the DRI Application.

9.10.03. *Final action by the city.* Approval of the first request for governmental action by the city shall not be made on a Development of Regional Impact until either:

- a. A report has been from the RC reflecting its findings and recommendations, if any; or,
- b. Said report is not received within 60 days of submittal of the application to the RC.

ARTICLE X. APPEALS

Section 10.01. Purpose of article X.

This article sets out the process to obtain relief from the requirements or interpretation of this development code that may create practical difficulty or particular hardship in its enforcement or application to a specific property or situation.

Section 10.02. Appeals of an administrative decision.

10.02.01. Initiation.

- a. An appeal of an administrative decision or interpretation may be initiated by a person aggrieved by such action. Such appeal shall be taken within 30 days of the administrative decision or interpretation by filing such appeal in writing with the development official.
- b. It is the intention of this development code that all questions arising in connection with the interpretation of this ordinance shall be presented first to the development official, from whom an appeal can then be taken to the city council.

10.02.02. *Appeals of permit decisions.* The holder of or applicant for a development permit or a building permit may appeal any of the following actions taken by an administrative official:

- a. The suspension, revocation, modification or grant with condition of a land-disturbance or development permit by the development official upon finding that the holder is not in compliance with the approved erosion and sedimentation control plan or other approved plans.
- b. The determination that the holder is in violation of development permit or building permit conditions.
- c. The determination that the holder is in violation of any other provision of this development code.

10.02.03. *Interpretations by city council.* The city council, upon appeal of an aggrieved party or at the request of the development official, is authorized to:

- a. Interpret the use of words or phrase within the context of the intent of this development code.
- b. Decide appeals from any order, determination, decision or other interpretation by a person acting under authority of this development code, where a misinterpretation or misapplication of the requirements or other provisions of this ordinance is alleged.
- c. Interpret such other provisions of this development code as may require clarification or extension in specific or general cases.

Section 10.03. Variances.

10.03.01. *Initiation.*

- a. An appeal from the strict application of the provision of this development code to a property may be initiated by any party aggrieved by such application.
- b. In no case, however, shall a variance be granted for any of the following
 - 1) A condition created by the applicant, including the result of an unwise investment decision or real estate transaction.
 - 2) A change in its conditions of approval imposed through a zoning change enacted by the city council.

- 3) A variance to any provision of article VIII “after the fact” of violation.

10.03.02. *Standards for approval of a variance.*

a. Generally.

- 1) Relief from the application of the provisions of this development code may be granted only upon finding that compliance with such provision will result in a hardship to the property or owner that is substantially unwarranted by the protection of the public health, safety or general welfares.
- 2) Such relief may be granted only to the extent necessary to alleviate such unnecessary hardship and not as a confidence to the applicant nor to gain any advantages or interest over other but similar properties.

b. Additional considerations for variances to article VII (floodplain).

- 1) Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not precluded the structure’s continued designation as an historic structure, and the variance issued shall be the minimum necessary to preserve the historic character and design of the structure.
- 2) Variances may be issued for development necessary for the conduct of a functional dependent use, provided the criteria of this subsection 10.03.02 are met, no reasonable alternative exists, and the development is protected by methods the minimize flood damage during the base flood and create no additional threats to public safety.
- 3) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- 4) In reviewing such request, the City of Temple, and the board of adjustments and appeals shall consider all technical evaluations, relevant factors, and all standards specified in this and other sections of article VIII/

c. A variance may be granted only upon a finding that:

- 1) The variance, if granted, would not cause an appreciable detriment to the public good.

- 2) The variance, if granted, would not be injurious to the use and enjoyment to the environment or of other property in the immediate vicinity.
- 3) The variance, if granted, would not diminish and impair property values within the surrounding neighborhood.
- 4) The variance, if granted, would not impair the purpose and intent of the development code.
- 5) For a variance from the provisions of article VIII (floodplain), in addition to the above, that:
 - a) There is good and sufficient cause;
 - b) Failure to grant the variance would result in exceptional hardship; and,
 - c) The granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expenses, or the creation of a nuisance;
 - d) The variance is the minimum necessary, considering the flood hazard, to afford relief; and, in the instance of a historic structure, a determination that the variance is the minimum necessary so as not to destroy the historic character and design of the building.

10.03.03. *Administrative variance.*

- a. The development official is authorized to grant variances from the terms of this development code, where, in his or her opinion, the intent of the ordinance can be achieved and equal or better performance obtained by granting the variance, and subject to the standards for approval set out by this section. The authority to grant such variances shall be limited to variance from the following requirements to the extent indicated:
 - 1) Width of frontage landscape strip. Variance not exceed two feet.
 - 2) Width of side and rear are landscape strip. Variance not to exceed five feet.
 - 3) Distance between buildings on the same lot. Variance not to exceed ten feet.

- b. An appeal from an adverse decision of the development official may be taken to the board of adjustments and appeals at the request of the applicant. All requests for appeal shall be filed in writing with the development official within 30 days of the decision of the development official.

10.03.04. *Variances by the board of adjustments and appeals.*

- a. The board of adjustments and appeals is authorized to grant a variance from the requirements of this development code, subject to the standards for approval set out in this section. The authority to grant such variances shall be limited to variances from the following requirements to the extent indicated:
 - 1) Width of frontage landscape strip. Variance not to exceed 35 percent.
 - 2) Width of side and rear yard landscape strip. Variance not to exceed 35 percent.
 - 3) Number of parking spaces. Variance not to exceed 35 percent.
 - 4) Sign regulations. Variance not to exceed 35 percent.
- b. An appeal from an adverse decision of the board of adjustments and appeals may be taken to the city council at the request of the applicant. Such request must be filed in writing with the development official within 30 days of the decision of the board of adjustments and appeals.

10.03.05. *Appeals to the city council.* The city council is authorized to grant a variance from any requirement, term or provision of this development code, subject to the limitations and standards of this section, and applicable provisions of state law.

10.03.06. *Additional regulations.*

- a. Any person requesting a variance shall, from the time of the request until the time the request is acted upon, submit such information and documentation as the City of Temple and the board of adjustments and appeals shall deem necessary to the consideration of the request.
- b. Upon consideration of the factors listed above the purpose of this ordinance, the City of Temple and the board of adjustments and appeals may attach such conditions to the granting of variances as they deem necessary and appropriate, consistent with the purpose of this ordinance.

- c. Any person to whom a variance is granted from the requirements of Article VIII (floodplain) shall be given written notice specifying the difference between the base elevations of the proposed lowest floor and stating that the cost of flood insurance will be commensurate with the increased risk to life and property resulting from the reduced lowest floor elevation. The development official shall maintain the records of all such appeal actions and report any variances to the Federal Emergency Management Agency upon request.

Section 10.04. Purpose for granting an appeal.

10.04.01. Receipt of appeal.

- a. Upon receipt of an appeal from an administrative decision or a request for a variance, the development official shall assemble such memos, papers, plans, or other document as may constitute the record for the appeal or as may provide an understanding of the issues involved.
- b. An application for an appeal shall include such descriptions, maps or drawings as needed to clearly illustrate or explain the action requested. The development official may request such additional information from the appellant as necessary to provide a full understanding of the applicant's request.
- c. Once the record has been assembled, the development official shall schedule the appeal or request for variance promptly for a public hearing at a meeting of the board of adjustments and appeals or the city council, as appropriate to the request.

10.04.02. Reserved.

10.04.03. Reserved.

10.04.04. Withdrawal of appeal. Any appellant who wishes to withdraw an appeal or request for variance prior to the public hearing shall file a written request for such withdrawal with the development official. The appeal shall thereupon be withdrawn and the request shall have no further effect.

10.04.05. Public hearing procedures.

- a. The public hearing shall be convened at the scheduled time and place by the appropriate body, as advertised.
- b. The presiding official may administer oaths and compel the attendance of witnesses by subpoena.

- c. The development official shall submit the assembled record of the appeal or variance. The development official shall provide such information or explanation as appropriate to the circumstances of the appeal or variance.
- d. Reserved.
- e. At the public hearing concerning the appeal or variance, the applicant after being sworn in shall be allowed to present evidence. Any parties in support of or in opposition to the appeal or variances shall also be allowed to present sworn testimony.
- f. For each appeal or variance, the appellant and proponents of the request shall have no less than ten minutes for presentation of data, opinions and evidence at the public hearing, and opponents of the appeal or variance shall likewise have a minimum of ten minutes for presentation. The proponents of each request shall have a collective maximum of 20 minutes for their presentations, unless these time limitations are waived at the discretion of the presiding official.
- g. Hearsay testimony shall not be considered and shall be ruled out of order.
- h. After public hearing and any information presented by the development official, action on the appeal shall be considered.
 - 1) A motion to approve or deny an appeal or variance must be approved by an affirmative vote of a majority of the members in order for the motion to be approved.
 - 2) If a motion to approve an appeal or variance fails, the appeal or variance is automatically denied. If a motion to deny an appeal or variance fails, another motion would be in order.
 - 3) Tie votes.
 - a) In the case of the board of adjustments and appeals, a tie vote on a motion for approval of an approval or variance shall be deemed a denial of the appeal or variance. A tie vote on any other motion shall be deemed to be no action, and another motion would be in order.
 - b) In the case of the city council, the mayor casts his or her vote when a tie vote occurs among the council members. If the mayor abstains or otherwise casts no vote, a tie vote on a motion for approval of an appeal or variance shall be deemed a denial of the appeal of the variance, while a tie vote on another motion shall be deemed to be no action, and another motion would be in order.

- c) If no action is taken on an appeal, it shall be considered tabled and action deferred to the next regular meeting.
- i. In taking no action on an appeal, it shall be considered tabled and action deferred to the next regular meeting.
 - 1) Approve, approve with conditions, or deny the request;
 - 2) Table the appeal or variance for consideration at a subsequent meeting; or,
 - 3) Allow withdrawal of the appeal or variance at the request of the applicant.

10.04.06. *Waiting period for re-filing.* If a request specifically for a variance is denied by the city council, another request for a variance affecting the same property shall not be considered by the city council for a period of six months from the date of denial; provided, however, that the city council may reduce the waiting period under extenuating circumstances or on its own motion.

Section 10.05. Flood protection variances.

A flood protection variance affecting an historic structure may be considered by the board of adjustments and appeals in accordance with the provisions of the “flood damage prevention” article of this development code. All other variances from the provision of this Code regarding flood damage prevention shall be considered by the city council.

ARTICLE XI. ADMINISTRATION AND ENFORCEMENT

Section 11.01. Purpose of article XI.

This article sets out the structure for administering and enforcing this development code, including the creation, powers and duties of the board of adjustment and appeals, and the responsibilities and procedures of the development official in carrying out enforcement activities.

Section 11.02. Schedules and fees.

From time to time, the council may adopt fees for the issuances of permits, the submission of applications, and such other activities and authorizations as regulated by this development code, and may adopt schedules of dates, times, and places as appropriate and necessary to regulate the application, review and approval processes required by this development code.

Section 11.03. Amendment to the text of this ordinance.

- a. The city council may amend the text of this development code, including the adoption of new development code to replace this ordinance in whole, by a majority vote of those present and voting at a regular meeting, in accordance with the procedures for the adoption of ordinances under the City Code of Ordinances and City Charter.
- b. Approval of a text amendment shall be in full force and effect upon its approval by the city council or upon the stated effective date thereof, and shall thereupon apply to every property for which a use has not been established or for which a building permit or development permit may subsequently be requested.
- c. Construction of any use, building, structure, or other improvements for which a development permit or building permit has been issued in conformity with this development code prior to the effective date of a text amendment may continue to completion as though no change had occurred as long as the permit remains valid.

Section 11.04. Board of adjustments and appeals.

11.04.01. Establishment.

- a. A board of adjustment and appeal is hereby established. Said board, who is appointed by and serve at the pleasure of the mayor, shall be no fewer than three members, who shall be citizens of the city.
- b. When a position becomes vacant before the end of a term, the mayor shall appoint a new member for the duration of the term remaining.
- c. Members shall serve without pay but may be reimbursed for any authorized travel expenses incurred while representing the board.

11.04.02. Proceedings of the board of adjustments and appeals.

- a. The mayor appoints the chair and a vice-chair from among its members, who shall serve at the pleasure of the mayor. The vice-chair shall preside at meetings in the absence of the chair.
- b. The chair or, in their absence, the vice-chair or other member designated to conduct an official meeting, may administer oath and allow cross-examination of witnesses.

- c. The board of adjustment and appeal may adopt such by-laws, rules or procedures as appropriate and not in conflict with this development code.
- d. The board of adjustment and appeals shall meet in accordance with ascheduled of meeting dates, times and place unless there is no business to conduct. Other meetings of the board of adjustments and appeals shall be held at the call of the chairman if there is a business to be brought before it, or at such times as the board of adjustments and appeals may determine. All meetings of the board of adjustments and appeals shall be open to the public.
- e. Where there is an even number of board numbers, half shall constitute a quorum. The affirmative vote of at least a quorum of the members of the board of adjustments and appeals shall be necessary to approve any decision or recommendation.
- f. The city engineer's designee shall serve as secretary to the board of adjustments and appeals. The secretary shall cause minutes of its proceedings to be kept, showing the vote of each member on each question, or if absent or failing to vote, indicating such fact, and shall be of public record. Minutes and agenda shall be prepared and maintained in accordance with the Open Records Act.

11.04.03. Powers and duties of the board of adjustments and appeals.

- a. The board of adjustment and appeals shall have the duty and responsibility to conduct a meeting and to make a recommendation in accordance with the procedures and provisions of this development code on each application for an appeal from an administrative decision, variances, or an interpretation.
- b. The board, in execution of the duties for which appointed, may subpoena a witness and in case of contempt may certify such facts to the Superior Court.
- c. The board of adjustment and appeals shall also have such other powers, duties, or responsibilities as assigned to it by the mayor or as contained in other ordinances adopted by the city.
- d. In exercising its power regarding an appeal of an administrative decision, the board of adjustments and appeals may, in conformity with the provisions of this development code, reverse or affirm, wholly or partly, or may modify the order, requirements, decisions or determination of the administrative official, and to that end shall have the power to direct issuance of a permit.

Section 11.05. Inspections and enforcement.

11.05.01. Enforcement officer.

- a. The development official shall have the power to conduct such investigations as may reasonably be deemed necessary to assure or compel compliance with the requirements and provisions of this development code, and for this purpose to enter at reasonable times upon any property for the purpose of investigation and inspection.
- b. No person shall refuse entry or access to any authorized representative or agent of the city, the Georgia Soil and Water Conservation Commission, the Soil and Water Conservation District, or the Georgia Environmental Protection Division who requests entry for the purpose of inspection, and who presents appropriate credential, nor shall any person obstruct, hamper or interfere with any such representation while in the process of carrying out his official duties.

11.05.02. *Enforcement for floodplain matters.* Any action or inaction which violates the provisions of article VIII of this ordinance or the requirements of an approved stormwater management plan or permit may be subject to the enforcement actions outlines in this subsection 11.05.02. Any such action or inaction which is continuous with respect to time is deemed to be a public nuisance and may be abated by injunctive or other equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief. The imposition of any of the penalties described below shall not prevent such equitable relief.

- a. *Notice of violation.* If the development official determines that an applicant or other responsible person has failed to comply with the terms and conditions of a permit, an approved stormwater management plan or the provisions of this ordinance, it shall issue a written notice of violation shall be served on the owner or the responsible person in charge of the activity being conducted on site. The notice of violation shall contain:
 - 1) The name and address of the owner or the applicant or the responsible person;
 - 2) The address or other description of the site upon which the violation is occurring;
 - 3) A statement specifying the nature of the violation;
 - 4) A description of the remedial measures necessary to bring the action or inaction into compliance with the permit, the stormwater management plan or this ordinance and the date for the completion of such remedial action;
 - 5) A statement of the penalty or penalties that may be assessed against the person to whole the notice of violation is directed; and

- 6) A statement that the determination of violation may be appealed to the board of adjustments and appeals by filing a written notice of appeal within 30 days after the notice of violation (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours' notice shall be sufficient).

b. *Administrative penalties.* In the event the remedial measures described in the notice of violation have not been completed by the date set forth for such completion in the notice of violation, any or more of the following actions or administrative penalties may be taken or assessed against the person to whom the notice of violation was directed, in addition to any civil or criminal penalties authorized by this ordinance. Before taking any of the following actions or imposing any of the following penalties, the City of Temple shall first notify the applicant or other responsible person in writing of its intended action, and shall provide a reasonable opportunity, of not less than ten days (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours' notice shall be sufficient) to cure such violation. In the event the applicant or other responsible person fails to cure such violation after such notice and cure period, the City of Temple may take any one or more of the following actions or impose any one or more of the following administrative penalties:

- 1) *Stop-work order.* The City of Temple may issue a stop-work order which shall be served on the applicant or other responsible person. The stop-work order shall remain in effect until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the withdrawn or modified to enable the applicant or other responsible person to take the necessary remedial measures to cure such violation or violations.
- 2) *Withhold certificate of occupancy.* The City of Temple may refuse to issue a certificate of occupancy for the building or other improvements constructed or being constructed on the site until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.
- 3) *Suspension, revocation or modification of permit.* The City of Temple may suspend, revoke or modify the permit authorizing the development project. A suspended, revoked, or modified permit may be restrained after the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein, provided such permit may be restrained (upon such conditions as the City of Temple may deem necessary) to enable the applicant or other responsible person to take the necessary remedial measures to cure such violations.

11.05.03. *Enforcement for other matters.* Stop-work orders, permit modifications and suspension. The development official and the building official shall have the authority to issue the following:

- a. A stop-work order stopping work immediately for an entire project; or
- b. A cease and desist order stopping any activity within the project or to stop work on any portion of the project for a definite or indefinite period;
- c. Where work on any project is being done contrary to the provisions of this development code or other provisions of the Temple City Code, contrary to the provisions of the permit or in a dangerous or unsafe manner, and the permit, if any, shall be suspended or modified. All cease and desist orders issued for a duration of more than three days, and all stop-work orders, shall be issued in writing and shall be delivered to any responsible party present at the property, and shall state the conditions under which work may be resumed. Failure of personal delivery of the notice shall not constitute grounds for termination of the order. Said written notice shall further be mailed by certified mail to the owner within three working days of issuance of the order. Orders may be terminated by the development official or building official upon confirmed satisfaction of the stated conditions for resumption or for further good cause.

Where in the opinion of the development official or the building official in emergency exists, no written notice shall be required.

Section 11.06. Administrative and judicial review.

11.06.01. *Administrative review generally.*

- a. Issuance of any stop-work order shall be issued in writing, or the suspension, revocation, modification, or grant with condition of a permit by the city upon finding that the property conditions are not in compliance with:
 - 1) The approved erosion and sedimentation control plan;
 - 2) Permit conditions; or
 - 3) This or any other ordinance;

Shall entitle the person submitting the plan or holding the permit to written notice of the same.

- b. Within ten days of the issuance of such notice, the recipient shall have a right to make a written request for and to be heard at a review hearing before the board of adjustments and appeals on a date to be scheduled and held within ten days after the date the written request is received by the development official or the building official.

11.06.02. *Administrative review hearing.*

- a. At such hearing, the board of adjustments and appeals shall entertain the matter. Upon finding that:
 - 1) The conditions specified granting a permit are reasonably necessary for compliance with this chapter, if such conditions are in issue; or
 - 2) That the property is not in compliance with the approved plan, permit conditions, or this or any other ordinance;

Then the board may confirm or modify the initial action of the issuing authority and shall specify the nonconformity or reason for its decision. In the absence of such a finding, said action shall stand revoked and terminated.

- b. If the appealing party is still aggrieved after the decision of the board, then he may file a written appeal to the city council within ten days of receiving said adverse decision. Upon appeal to the city council, that body shall apply the same standards for review as those applicable to the board.

Section 11.07. Violation and penalties

11.07.01. *For floodplain.* The following provisions shall apply to violations of article VIII (floodplain):

- a. Civil penalties. In the event the applicant or other responsible person fails to take the remedial measures set forth in the notice of violation or otherwise fails to cure the violations described therein within ten days, or such greater period as the City of Temple shall deem appropriate (except, that in the event the violation constitutes an immediate danger to public health or public safety, 24 hours' notice shall be sufficient) after the City of Temple may impose a penalty not to exceed \$1,000.00 (depending on the severity of the violation) for each day the violation remains un-remedied after the receipt of the notice of violation.
- b. Criminal penalties. For intentional and flagrant violations of this ordinance, the City of Temple may issue a citation to the applicant or other responsible person, requiring such person to appear in municipal court to answer charges

for such violation. Upon conviction, such person shall be punished by a fine not to exceed \$1,000.00 or imprisonment for 60 days or both. Each act of violation and each day upon which a violation shall occur shall constitute a separate offense.

11.07.02. *Violation and penalties regarding other matters.*

- a. Failure to obtain a permit for land-disturbance or development activity. If any person commences, or any property owner allows commencement, of any land-disturbing or development activity requiring a land-disturbing or development permit without first obtaining said permit, he shall be subject to revocation of his business license, work permit or other authorization for the conduct of a business and associated work activities at the site of the property.
- b. Civil penalties. Any person violating any provisions of this Code, permit conditions, or stop-work order shall be liable for civil penalties consistent with this ordinance, the City Code, the City Charter and applicable state laws. Each day the violation continues shall constitute a separate offense.
- c. Bond forfeiture. If, through inspection, it is determined that a person engaged in any land-disturbing or development activity has failed to comply with the approved plan, a written notice to comply shall be furnished to such person. The notice shall set forth the requirements necessary to achieve compliance with the plan and shall state the time within which requirements must be completed. If the person engaged in the land-disturbing or other development activity fails to comply within time specified, he shall be deemed in violation of this Code and, in addition to other penalties, shall be deemed to have forfeited his performance bond or irrevocable letter of credit. The city may call the bond or letter of credit or any part thereof to be forfeited and may use the proceeds to stabilize the site and bring it to compliance.
- d. Additional remedies. Nothing contained in this section shall prevent the city from taking such other lawful actions as are necessary to prevent or remedy any violation, such as injunction, mandamus or other appropriate action.

ARTICLE XII. GLOSSARY OF DEFINITIONS

The following is a glossary of definitions specifically used in the text of this development code. Refer also to article I regarding the interpretation of figures, words and phrases as used in this Code.

12.01.01. *Access:* A way or means of approach to provide physical entrance to a property.

12.02.01. *Addition* (to an existing building): Any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a fire wall. Any walled and roofed addition which is connected by a fire wall or is separated by an independent perimeter load-bearing wall shall be considered new construction.

12.03.01. *Agricultural Activities*: The production, keeping, or maintenance, for sale, lease, or personal use, of plants and animals useful to man, including but not limited to: forages and sod crops; grains and seed crops; dairy animals and dairy products; poultry and poultry products; livestock, including beef, cattle sheep, swine, horses, ponies, mules or goats or any mutations or hybrids thereof, including the breeding and grazing of any or all such animals; bees and apiary products; fur animals; trees and forest products; fruits of all kinds, including grapes, nuts, and berries; vegetables, nursery, floral ornamental, and greenhouse products; or lands devoted to a soil erosion or forestry management program.

12.04.01. *Alley or Service Drive*: A minor, permanent, public service way which is used primarily for vehicle service access to the back or the side of properties otherwise abutting on a street.

12.05.01. *Antenna*: Any exterior apparatus designed for telephonic, radio, or television communications through the sending and/or receiving of electromagnetic waves.

12.05.02. *Appeal*: A request for a review of the development official's interpretation of any provision of this ordinance.

12.06.01. *Applicant*: A property owner or their authorized representative who has petitioned the city for approval of a land-disturbance permit, development permit, building permit, hardship variance, special exception or appeal, or any other authorization for the development of their property under the requirements of this development code.

12.07.01. *Application*: A petition for a land-disturbance permit, a development permit, building permit, hardship variance, special exception or appeal, or any other authorization for the development of a property under the requirements of this development code.

12.08.01. *Area of Shallow Flooding*: A designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths from one to three feet, and/or where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

12.08.02. *Area of Special Flood Hazard*: The land subject to a one percent or greater chance of flooding in a given year. This includes all floodplain and flood prone areas at or below the base flood elevation (including A, A1-30, A-99, AE, AO, AH, and

AR on the FHBM or the FIRM), all floodplain and flood prone areas at or below the future conditions flood elevation, and all other flood prone areas as referenced in this document. All streams with a drainage area of 100 acres or greater shall have the area of special flood hazard delineated.

12.09.01. *Arterial Street*. See under “Street Classifications”

12.10.01. *Record Survey Drawings*: Drawings specifying the dimensions, location, capacities, and operational capabilities of structures and facilities as they have been constructed.

12.11.01. *Available Head*: The depth of water that is present at the entrance to a pipe during a 100-year storm.

12.12.01. *Base Flood*: The flood having a one percent chance of being equaled or exceeded in any given year, also known as the 100-year flood.

12.12.02. *Base Flood Elevation*: For purposes of article VIII only, that portion of a building having its floor sub-grade (below ground level) on all sides.

12.12.03. *Basement*: For purposes of article VIII only, the highest water surface elevation anticipated at any given point during the base flood.

12.13.01. *Berm*: A mound of earth, or the act of pushing earth into a mound.

12.14.01. *Reserved*.

12.15.01. *Block*: An area of land surrounded by streets.

12.16.01. *Bond*: A bond, letter of credit or approved surety method approved by the city attorney.

12.17.01. *Breakaway Wall*: A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or the supporting foundation system.

12.18.01. *Building*: For purpose of article VIII only, any structure built for support, shelter, or enclosure for any occupancy or storage.

12.19.01. *Caliper*: The diameter of a tree (usually nursery stock) measured at a point six inches above the ground or top of root ball for up to and including 4-inch caliper trees, and at a point 12 inches above the ground or top of root ball for larger sizes.

12.20.01. *Canopy trees*: A species of tree that normally reaches a height in maturity in excess of 50 feet and is used primarily for shade, such as red oak, shumark

oak, Chinese elm, river birch, white oak, water oak, American elm, trident maple, pin oak, American beech, pecan, southern magnolia, and willow oak.

12.20.02 *Car Wash*:

- a. Conveyor car wash: A commercial car wash where the car moves on a conveyor belt during the wash. The driver of the vehicle can remain in the vehicle or wait outside of the vehicle.
- b. In-bay automotive car wash: A commercial car wash where the driver pulls into the bay and parks the car; the vehicle remains stationary while a machine moves back and forth over the vehicle to clean it, instead of the vehicle moving through the tunnel.
- c. Self-serve car wash: A commercial car wash where the customers wash their cars themselves with spray and wands and brushes.

12.21.01. *Cellular Tower or Antenna*: See “Transmission Tower.”

12.22.01. *Center Line*: That line connecting the succession of midpoints between the identifiable limits of any improvements on the ground or of any easement, or between the banks of any river, creek, or stream.

12.23.01. *City Arborist*: The Development Official or his/her designee responsible for administering the provisions of this Development Code with respect to trees and landscaping.

12.24.01. *Clearing*: The removal of vegetation from a property, whether by cutting or other means.

12.25.01. *Collector Street*: See under “Street Classifications.”

12.26.01. *Construction*: Any building or erection of a structure or preparation of a property for the same.

12.27.01. *Construction Contractor*: An establishment engaged in the construction of buildings, engaged in heavy construction (such as streets, bridges, or utilities) or specialized in such construction trades as plumbing, heating, and air-conditioning, electrical wiring, masonry, roofing or gutters, well drilling, or house painting.

12.28.01. *Construction Sign*: A sign identifying the contractors, engineers, architects or financial institution involved in the building construction or development of a property.

12.29.01. *Critical Root Zone*: The land area circular in shape and centered on the bank of a tree, the radius of which circle is determined by the farthest extent of the drip line from the trunk.

12.30.01. *Crosswalk*: A right-of-way or public easement within a block dedicated to public use, ten feet or more in width, intended primarily for pedestrians and from which motor-propelled vehicles are excluded.

12.31.01. *Cul-de-Sac*: A dead-end street that terminates in a permanent turnaround and not intended for future extension.

12.32.01. *Curb Break or Curb Cut*: Any interruption or break in the line of a street curb for the purpose of connecting a driveway to a street, or otherwise to provide vehicular access to abutting property.

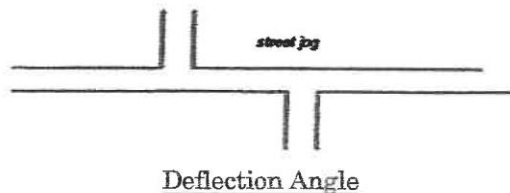
12.33.01. *Cut*: A portion of land surface or area from which earth has been removed or will be removed by excavation; the depth below the original ground surface to excavated surface. Also known as “excavation”.

12.34.01. *Cutting*: The removal of any soil or other soil material.

12.35.01. *Dead-end Street*: A Street connected to another street at only one end.

12.36.01. *Dead plant or Tree*: Any living plant matter that has lost 35 percent or more of its branches or leaves, shall be considered dead.

12.37.01. *Deflection Angle*: The angle between a deviation in the direction of the center line of a street and the extension of the center line along a straight course from the point from which the center line changed direction.



12.38.01. *Detention Facility*: See “Stormwater Detention Facility”

12.39.01. *Developed Property*; Any lot which contains any building or structure for which a certificate of occupancy has been issued and is current.

12.40.01. *Developer*: The person, corporation or other legal entity that undertakes the subdivision of property, the alteration of land or vegetation in preparation for construction activity, or the construction of streets, utilities, buildings, or other improvements required for the habitation or use of the property.

12.41.01. *Development*:

- a. For purpose of article VIII only, any manmade change to improved or unimproved real estate including but not limited to buildings or other structures, mining, dredging, filling, clearing, grubbing, grading, paving, or any other installation of impervious cover, excavation or drilling operations or storage of equipment or materials;
- b. For all other purpose of this ordinance:
 - 1) A land development project involving the construction of streets, utilities, buildings, or other improvements required for the habitation or use of property, such as residential neighborhood, an apartment complex, a store, or a shoppingcenter;
 - 2) Any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of materials or equipment;
 - 3) The act of constructing or carrying out a land development project, including the alteration of land or vegetation in preparation for construction activity.

12.42.01. *Development Permit*: The authorization necessary to carry out the planned development of land and construction of such site improvements as streets, utilities, drainage structures and parking lots, and which may include authorization to initiate and conduct such land-disturbing activities as clearing, grubbing, and grading. See also “Land-disturbance Permit.”

12.43.01. *Development Site*: That portion of a tract of land that will be dedicated to a proposed development, including the land containing trees that will be counted toward satisfying the requirements of these provisions.

12.44.01. *Diameter Breast Height (DBH)*: The diameter of a tree trunk, (usually a mature tree) measured at height of four and one-half feet above the ground. If a tree splits into multiple trunks below four and one-half feet, the trunk is measured at its most narrow point beneath the split.

12.45.01. *Directional Sign*: A permanent sign, which is supported by one or more columns, uprights or braces in or upon the ground and is not attached to a building

and is not mobile or temporary, is not taller than 30 inches in height, and is not attached to a wall, with an area not greater than 48 square inches, located not closer than 12 feet from all rights-of-way and all property lines unless otherwise permitted by the building official.

12.46.01. *Drainage*: A general term applied to the removal of surface or subsurface water from a given area either by gravity or by pumping; most commonly applied to surface water.

12.47.01. *Drainage Structure*: A device composed of virtually non erodible material such as concrete, steel, plastic or other such material that conveys water from one place to another by intercepting the flow and carrying it to a release point for stormwater management, drainage control or flood control purposes.

12.48.01. *Drainage System*: The surface and subsurface system for the removal of water from the land, including both natural elements of the streams, marshes, swales and ponds, whether of an intermittent or continuous nature, and the manmade element which includes culverts, ditches, channels, detention facilities, and the storm sewer system.

12.49.01. *Drip Line*: A line on the ground established by a vertical plane extending from a tree's outermost branch tips down to the ground, i.e., the line enclosing the area directly beneath the tree's crown from which rainfall would drip.

12.50.01. *Easement*: A strip of land on which the property owner has granted to another entity the right to use such land for specific purposes.

12.51.01. *Elevated Building*: A non-basement building built to have the lowest floor of the lowest enclosed area elevated above the ground level by means of fill, solid foundation perimeter walls, piling, columns, piers, or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

12.52.01. *Erosion*: The process by which land surfaces are worn away by the action of wind, water, ice, or gravity.

12.53.01. *Erosion and sedimentation control plan*: A plan for the control of soil erosion and sedimentation resulting from land-disturbing or other development activity.

12.54.01. *Excavation*: The mechanical removal of earth material.

12.55.01. *Existing Grade*: See under: "Grade."

12.56.01. *Existing Manufactured Home Park or Subdivision*: A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum the installation of utilities, the construction of streets, and final site grading or the pouring of concrete pads) was completed before the adoption of this development code.

12.57.01. *Expansion to an Existing Manufactured Home Park or Subdivision*: The preparation of additional site by the construction of facilities to service the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads.

12.58.01. *Fill*: A portion of land surface to which soil or other solid materials has been added; the depth above the original ground.

12.59.01. *Filling*: The placement of any soil or other soiled material, either organic or inorganic, on a natural ground surface or excavation.

12.60.01. *Finished Grade*: See under “Grade.”

12.61.02. *Flood or Flooding*: A general and temporary condition of particular or complete inundation of normally dry land areas from:

- a. The overflow of inland or tidal waters; or
- b. The rapid accumulation or runoff of surface waters from any source.

12.62.01. *Flood Hazard Boundary Map or FHBM*: An official map of a community, issued by the Federal Insurance Administration, where the boundaries of areas of special flood hazard have been defined as Zone A.

12.63.01. *Flood Insurance Rate Map or FIRM*: An official map of a community, issued by the Federal Insurance Administration, delineating the areas of special flood hazard and/or risk premium zones applicable to the community.

12.64.01. *Flood Insurance Study or FIS*: The official report by the Federal Insurance Administration evaluating flood hazards and delineating flood profiles and water surface elevations of the base flood.

12.65.01. *Floodplain*: Any land area susceptible to flooding.

12.66.01. *Floodproofing*: Any combination of structural and non structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

12.67.01. *Flood-Resistant Materials*: Building materials capable of withstanding direct and prolonged contact with floodwaters, without sustaining damage. The term “prolonged contact” means at least 72 hours, and the term “significant damage” means any damage requiring more than low-cost cosmetic repair (such as painting). See FEMA Technical Bulletin 2-93 and subsequent revisions thereto.

12.68.01. *Floodway or Regulatory Floodway*: The channel of a stream or other watercourse and the adjacent areas of the floodplain which is necessary to contain and discharge the base flood flow without cumulatively increasing the base flood elevation more than one foot.

12.69.01. *Floor*: The top surface of an enclosed area in a building, including basement, i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles or storage, or the floor area of an attic used exclusively for storage.

12.71.01. *Flowering Ornamental Tree*: A tree, other than a canopy tree, that produces seasonal flowers and blossoms and is used primarily for aesthetic or ornamental purposes.

12.72.01. *Functional Dependent Use*: A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water.

12.72.02. *Future Conditions Flood*: The flood having a one percent chance of being equaled or exceeded in any given year based on future condition hydrology. Also known as the 100-year future conditions flood.

12.72.03. *Future conditions Flood Elevation*: The flood standard equal to or higher than the base flood elevation. The future conditions flood elevation is defined at the highest water surface anticipated at any given point during the future conditions flood.

12.72.04. *Future Conditions Floodplain*: Any land area susceptible to flooding by the future conditions flood.

12.72.05. *Future Conditions Hydrology*: The flood discharges associated with projected land-use conditions based on the city’s zoning map, comprehensive land-use plan, and/or watershed study projections, and without consideration of projected future construction of flood detention structures or projected future hydraulic modifications within a stream or other waterway, such as bridge and culvert construction, fill, excavation.

12.73.01. *Gated Community*: A subdivision requiring permitted entry through a gate or other device and approved as such, which may be served by private streets.

12.74.01. *Grade*: The level of surface of the ground.

- a. Existing Grade: The original elevation of the ground surface prior to cutting or filling.
- b. Finished Grade: The final elevation and contour of the ground after cutting or filling and conforming to the proposed design.
- c. Highest Adjacent Grade: The highest natural elevation of the ground surface, prior to construction, next to the proposed walls of a building. If fill has been placed, it refers to the original ground level beneath the fill.

12.75.01. *Grading*: Altering the shape of ground surfaces to a predetermined condition; this includes stripping, cutting, filling, stockpiling, and shaping, or any combination thereof, and shall include the land in its cut or filled condition.

12.76.01. *Grading Permit*: Authorization necessary but limited to the invitation and conduct of a land-disturbing activity on a property.

12.77.01. *Greenway*: An area along the course of any state waters to be maintained in an undisturbed and natural condition.

12.78.01. *Ground Cover*: A low growing plant, other than turf grass, which forms a continuous cover over the ground surface.

12.79.01. *Ground Elevation*: See under “Grade.”

12.80.01. *Guy Tower*: See under “Transmission Tower.”

12.81.01. *Handicapped Parking Space*: A space laid out and designated by signage in accordance with the requirements of the Federal Americans with Disabilities Act.

12.82.01. *Hardwood Tree*: Any leaf bearing (not-needle-bearing) tree that is not coniferous (cone-bearing). This definition is based on a colloquialism, and does not reflect any true qualities of the tree.

12.83.01. *Heavily Landscaped Area*: An area planted with a combination of shade and flowering trees, deciduous and evergreen shrubs, flowering perennials such that the entire area is covered with landscape materials. The green space designated to be heavily landscaped shall have no more than 25 percent of its area covered in turf (seed or sod). The remaining 75 percent shall contain shade trees

(two-inch caliper minimum), flowering ornamental trees (one-inch caliper minimum), ever green shrubs(three-gallon minimum), deciduous shrubs (three-gallon minimum), and perennials or non-turf ground-covers (two and one-half-inch pot minimum). All plant materials shall be mulched.

12.84.01. *Highest Adjacent Grade*: The highest natural elevation of the ground surface, prior to construction, adjacent to the proposed foundation of a building.

12.85.01. *Historic Structure*: For purpose of article VIII only, any structure that is:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- c. Individually listed on a state inventory of historic places and determined as eligible by state with historic preservation programs which have been approved by the Secretary of the Interior; or
- d. Individually listed on the local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either:
 - 1) By an approved state program as determined by the Secretary of the Interior, or
 - 2) Directly by the Secretary of the Interior in states without approved programs.

12.86.01. *Impermeable*: Something that water cannot pass through or be absorbed by, such as a layer of rock.

12.87.01. *Impervious Surface*: Manmade structures, improvements and surfaces that prevent or significantly limit the infiltration of storm water. Examples of impervious structures and improvements are: buildings, structures, roads, driveways, parking lots, decks, swimming pools, patios and sidewalks. Example of impervious material often used to construct such improvements are asphalts, concrete, brick, stone, wood, asphalt shingles, metal, and composite materials.

12.88.01. *Improvements*: The physical addition and changes to land that may be necessary to produce usable, desirable, and acceptable lots or building sites.

12.89.01. *Intersection*:

- 1) The place where two streets cross;
- 2) The point at which the centerline of a street intersects the center line of another street or railway.

12.90.01. *Land-Disturbing Activity*: Any activity that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands within the state, including, but not limited to, clearing, dredging, grading, excavating, transporting and filling of land, but not including agricultural practices that are exempt under the “Erosion and Sedimentation control” article of this development code.

12.91.01. *Land-disturbance Permit*: Any permit other than a building permit used by the city that authorizes clearing or grading activities or any other land-disturbing activity on a site or portion of a site. Said permit may be a clearing, clearing and grubbing or grading permit as defined and authorized under any regulations of the city. See also “Development Permit”.

12.92.01. *Landscape Materials*: Any combination of living plant materials and non- living materials such as rock, pebbles, wood chips, mulch and pavers, and decorative features, including sculpture, patterned walks, fountains, and pools.

12.93.01. *Landscape Plan*: A component of a development plan on which it is shown: the scale at one inch; the North reference; the location and size of all utilities on the site; the location of all existing and proposed parking areas, sidewalks and other paved surfaces; the location of all existing and proposed building structures; the boundaries of each required landscape strip or area; a planting plan showing the location, size, and common name of proposed plant materials; the location, size, and common name of all existing plant materials to be retained that meet the minimum requirements of this Code for landscaping; and any other information that can reasonably be required in order that an informed decision can be made by the Development Official.

12.94.01. *Landscaping*:

- 1) An expanse of natural scenery;
- 2) Lawns, trees, plants, and other natural materials, such as rock and wood chips, and decorative features, including sculpture, patterned walks, fountains, and pools.

12.95.01. *Lattice Tower*: See under “Transmission Tower”.

12.96.01. *Live Detention*: The quantity of water capable of being effectively contained by a stormwater detention facility for a specified period of time.

12.97.02. *Lot*: A parcel or tract of land held in single ownership.

- a. Corner Lot: Any lot bounded by two streets at their intersection
- b. Double- Frontage Lot: A lot bounding on two or more streets, but not at their intersection, so that is it not a corner lot.
- c. Interior-Lot: A lot having frontage on only one street.

12.98.03. *Lot Line*: The boundary dividing a given lot from the street or adjacent lots; the boundary defining the limit of ownership of a property.

- a. Front Lot Line: Any boundary line of a lot that abuts a street right-of-way line. A lot adjacent to more than one street will have more than one front lot line.
- b. Rear Lot Line: Any boundary line of a lot that does not intersect with a street right-of-way line and is not a front lot line.
- c. Side Lot Line: Any boundary line of a lot that intersects with a street right-of-way line and is not a front lot line.

12.98.04. *Lowest Floor*: The lowest floor of the lowest enclosed area, including basement. An unfinished or flood-resistant enclosure, used solely for parking of vehicles, building access, or storage, in an area other than a basement, is not considered a building’s lowest floor, provided that such enclosure is not built so as to render the structure in violation of other provisions of this ordinance.

12.99.01. *Major Street*: A street, thoroughfare or highway classified as an arterial or collector in the comprehensive plan.

12.100.01. *Manual for Erosion and Sediment Control in Georgia*: A publication of the same name published by the Georgia Soil and Water Conservation Commission, and as amended or supplemented from time to time.

12.100.02. *Manufactured Home*: For the purposes of this ordinance only, a building, transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term includes any structure commonly referred to as a “mobile home” regardless

of the date of manufacture. The term also includes parked trailers, travel trailers and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.

12.101.01. *Mean Sea Level*: The average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of article VIII the term is synonymous with National Geodetic Vertical Datum (NGVD) and/or the North American Vertical Datum (NAVD) of 1968.

12.102.01. *Reserved*

12.103.01. *Monopole Tower*: See under “Transmission Tower.”

12.104.01. *Motel*: See “Hotel or Motel”.

12.105.01. *Mulch*: Pine straw, pine bark, pebbles, lava rock, or processed cypress trees. By-products of unprocessed grinding operations may not be used for mulching under landscape plants or trees.

12.106.01. *National Geodetic Vertical Datum (NGVD)*: As corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the floodplain.

12.109.01. *National Ground Surface*: The ground surface in its original state before any grading, excavation or filling.

12.110.01. *Reserved*

12.111.01. *New Construction*: Any structure (see definition) for which the “start of construction” commenced after the adoption of this development code, and includes any subsequent improvements to the structure.

12.112.01. *New manufactured Home Park or Subdivision*: For purposes of article VIII only, a manufactured home park or subdivision for which the construction of facilities for servicing installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after adoption of this development code.

12.113.01. *Non-safe-Fall Tower*: See under “Transmission Tower”

12.113.02. *North American Vertical Datum (NAVD) of 1988*: A vertical control used as a reference for establishing varying elevations within the floodplain.

12.114.01. *One- Hundred-Year Flood Plain*: A land area adjoining a river, stream, water-course or lake that has a probability of flooding once every 100 years and thus has a one percent chance of flooding each year.

12.115.01. *Reserved.*

12.116.01. *Opaque:* Impenetrable to view, or so obscuring to view that features, buildings, structures, and uses become visually indistinguishable.

12.117.01. *Overstory Tree:* Any deciduous or evergreen tree that has the potential to grow to a mature height of 40 feet or more (Reference Landscape Plant Material for Georgia, Cooperative Extension Service, The University of Georgia College of Agriculture, Bulletin No. 625 or any similar publication.) Reference may also be made to the Manual of Woody Landscape Plants (Micheal Dirr, 1983, Castle Books.)

12.118.01. *Owner:*

- a. For purpose of article VIII only, the legal or beneficial owner of a site, including but not limited to, a mortgagee or vendor in possession, receiver, executor, trustee, lessee or other person firm or corporation in control of the site;
- b. For all other purposes, a person having or controlling any ownership or possessory interest in a property, or their authorized representative.

12.119.01. *Parking Aisle:* The traveled way, which is not the public right-of-way, by which cars enter and depart parking spaces.

12.120.01. *Parking Area:* Any public or private area at grade or within a structure used for the express purpose of temporarily parking automobiles and other vehicles otherwise in operation for personal or business use.

12.121.01. *Parking Bay:* Three or more parking spaces adjacent to one another and aligned side-by-side.

12.122.01. *Permit:* Any of the permits issued by the city hereunder to the applicant which is required prior to undertaking any development activity.

12.123.01. *Pervious Surfaces:* Surfaces capable of being significantly infiltrated by stormwater.

12.124.01. *Professional Engineer:* An engineer licensed and registered to perform the duties of a Professional Engineer (P.E.) by the State of Georgia.

12.125.01. *Project:* The entire proposed development project regardless of the size of the area of land to be disturbed.

12.126.01. *Project Entrance Sign*: A sign located at a discernible entrance into a particular subdivision, development or office or industrial park.

12.127.01. *Projecting Sign*: See “Building Sign”.

12.128.01. *Public Improvement*: The construction, enlargement, extension or other construction of a facility for dedication to the public, including but not limited to a street, curb and gutter, sidewalk, cross drain, catch basin, traffic control and street name sign, or other roadway appurtenances other than a driveway apron connection; domestic water supply system main, fire hydrant, valve or other appurtenance other than a supply line to a building; or sanitary sewerage main or outfall, lift station, force main, manhole or other appurtenance other than a drain line from a building.

12.129.01. *Public Utility*: A utility owned and operated by a government or public authority.

- a. *Public Sewerage System*: A sanitary sewerage system for the collection of water-borne wastes complete with a sewerage treatment plant that is owned and operated by a public agency or authority.
- b. *Public Water System*: A system for the intake, treatment, and distribution of potable water that is owned and operated by a public agency or authority.

12.130.01. *Recreational Vehicle*: A vehicle which is:

- a. Built on a single chassis;
- b. Four hundred square feet or less when measured at the largest horizontal projection;
- c. Designed to be self-propelled or permanently towable by light duty truck; and,
- d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

12.131.01. *Recycled Water System*: A water system for a commercial car wash that captures and reuses water previously used in wash or rinse cycles.

12.132.02. *Registered Land Surveyor*: A land surveyor licensed and registered to perform the duties of a registered land surveyor (R.L.S.) by the State of Georgia.

12.132.01. *Reserve Strip*: A strip or tract of land reserved for the purpose of controlling or limiting access from properties to abutting streets.

12.133.01. *Restaurant, Family*: A Custom Service Restaurant primarily oriented to sit-down service, occasionally with take-out service but no drive-in or drive-through facilities, and having an average turnover rate generally of less than one hour.

12.134.011. *Restaurant, Fast Food*: Any establishment, building or structures where food or drink are served for consumption, either on or off the premises, by order from or service to persons either over an interior counter, outside the structure or from an outdoor service window or automobile service window, or by delivery. This definition shall not include otherwise permitted restaurants where outdoor table service is provided incidental to a family restaurant or a quality restaurant (custom service restaurants).

12.135.01. *Restaurant, Quality*: A Custom Service Restaurant primarily oriented to fine dining and often associated with a particular cuisine. Quality restaurants are characterized by table settings of better silverware, china, glassware, and cloth table clothes, and have average turnover rates generally of one hour or more.

12.136.01. *Right-of-Way*: Land reserved for and immediately available for use as a street or other public purpose.

12.137.01. *Roadbed*: That portion of a street improved for vehicular travel, including the curbs and shoulders.

12.138.01. *Roadway*: The paved portion of a street improved for vehicular travel, measured from back of curb, or from edge of pavement for swale ditch roads.

12.139.01. *Roadway Drainage Structure*: A device such as a bridge, culvert or ditch, composed of virtually non erodible material such as concrete, steel, plastic or other such material that conveys water under a roadway by intercepting the flow on one side of a traveled way consisting of one or more defined lanes, with or without shoulder areas, and carrying water to a release point on the other side.

12.140.01. *Runoff*: The portion of precipitation on the land that reaches the drainage system.

12.141.01. *Runoff Rate Coefficient*: The numerical factor which, when multiplied with the average slope for a particular site, will give the release rate of water from that site.

12.142.01. *Safe-Fall Tower*; See under “Transmission Tower.”

12.143.01. *Sediment*: Solid material, both organic and inorganic that is in suspension, is being transported or has been moved from its site of origin by air, water, ice or gravity as a product of erosion.

12.144.01. *Sedimentation*: The process by which eroded material is transported and deposited by the action of water, wind, ice or gravity.

12.145.01. *Shade Tree*: A broadleaf hardwood tree having an average height of maturity of at least 20 feet and having a broad spread relative to its height (excluding trees with pyramidal conical or columnar crowns) and a dense canopy, so as to provide shade to structures or parking areas in the summer months.

12.145.02. *Site*: The parcel of land being developed, or the portion thereof on which the development project is located.

12.146.01. *Slope*: The degree of deviation of a surface from the horizontal, usually expressed in percent or degree.

12.147.01. *Soil and Water Conservation District Approved Plan*: An erosion and sediment control plan approved in writing by the Soil and Water Conservation District.

12.148.01. *Soils*: The upper layer of earth that can be dug or plowed; the loose surface material of the earth in which vegetation normally grows.

12.149.01. *Specimen tree*: Any tree which qualifies for special consideration for preservation due to size, type and condition as follows:

- a. Any tree in fair or better condition which equals or exceeds the following diameter breast height (DBH) sizes:
 - 1) 20-inch DBH- Overstory hardwoods such as oaks, hickories, yellow poplars, sweetgums, etc.
 - 2) 30-inch DBH- Overstory softwoods such as pines, etc.
 - 3) 4-inch DBH- understory small trees such as dogwoods, redbuds, sourwoods, etc.
- b. A tree in fair or better condition must meet the following minimum standards:
 - 1) A life expectancy of greater than 15 years.
 - 2) A structurally sound trunk, not hollow and having no extensive decay, and less than 20 percent radial trunk dieback.
 - 3) No more than one major and several minor dead limbs (hardwoods only).
 - 4) No major insect or pathological problem.
- c. A lesser-sized tree can be considered a specimen tree if it is a rare or unusual species, or of exceptional or unique quality, subject to approval of the Development Official pursuant to the standards set forth in this article.

- d. A lesser-sized tree can be considered a specimen tree if it is specifically used by a builder, developer, or design professional as a focal point in a landscape project, subject to approval of the Development Official pursuant to the standards set forth in this article.

12.150.01. *Specimen tree stand*: A contiguous grouping of trees which has been determined to be of high value in the opinion of City Director of Development Services. Determination is based upon the following criteria:

- a. A relatively mature, even-aged stand.
- b. A stand with purity of species composition or of a rare or unusual nature.
- c. A stand of historical significance.
- d. A stand with exceptional aesthetic quality.

12.151.01. *Reserved*.

12.152.01. *Start of Construction*: The date the permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within 180 days of the permit date. The actual start means the first placement of permanent construction of structure such as the pouring of slabs, or excavation, and includes the placement of a manufactured home on a foundation. Permanent construction does not include initial land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include excavation for a basement, footings, piers or foundation or the erection of temporary forms; nor does it include the installation on the property of buildings appurtenant to the permitted structure, such as garages or sheds not occupied as dwelling units or part of the main structure. (NOTE: Accessory structures are not exempt from any ordinance requirements). For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alternation affects the external dimensions of the building.

12.153.01. *State Waters*: Any and all rivers, streams, creeks, branches, lakes, reservoirs, pond, drainage systems, springs, wells and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the State which are not entirely confined and retained completely upon the property of a single individual, partnership or corporation. "State Waters" excludes channels and drainage ways which have water in them only during immediately after rainfall events and intermittent streams which do not have water in them year-round.

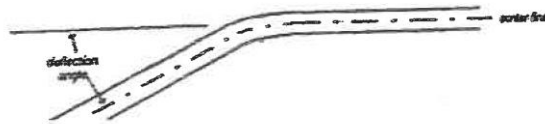
12.154.01. *Stormwater Detention Facility*: A facility that provides storage and controlled release of stormwater runoff during and after a flood or storm.

12.155.01. *Stream*: A natural, free-flowing watercourse with either constant or intermittent flow sufficient to wrest the vegetation and form a defined channel.

12.156.01. *Street*: An improved way for the conveyance of motor driven, rubber-tired vehicles, such as automobiles and trucks.

12.157.01. *Street Classifications*: Streets and roads are shown in the comprehensive plan according to their classification.

12.158.01. *Street Jog*: The incidence where two streets or two portions of a single street are separated by a relatively short distance, usually at their intersection with another street.



12.159.01. *Structures*: For purposes of this ordinance only, a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank.

12.160.01. *Subdivider*: Any person dividing or proposing to divide land under their ownership into two or more tracts or lots including any agent of the property owner.

12.161.01. *Subdivision*:

- a. For purposes of article VIII and related definitions only, the division of a tract or parcel of land resulting in one or more new lots or building sites for the purpose, whether immediately or in the future, of sale, other transfer of ownership or land development, and includes division of land resulting from or made in connection with the layout or development of a new street or roadway or a change in an existing street or roadway;
- b. For all other purposes of this ordinance:
 - 1) The division of a property or tract of land into two or more tracts or lots; or

- 2) A land development project in which two or more lots are created, along with streets and utilities needed to support construction of buildings on the lots.

12.162.01. *Substantial Damage*: Damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

12.163.01. *Substantial Improvement*: Any combination of repairs, reconstruction, alternations, or improvements to a building, taking place during a ten-year period, in which the cumulative cost equals or exceeds 50 percent of the market value of the structure prior to the improvement. The market value of the building means (1) the appraised value of the structure prior to the start of initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring. This term includes structures which have incurred "substantial damage" regardless of the actual amount of repair work performed. For the purpose of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. The term does not, however, include those improvements of a building required to comply with existing health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, which have been pre-identified by this development code, and not solely triggered by an improvement or repair project.

12.164.01. *Substantially Improved Existing Manufactured Home Park or Subdivision*: Where the repair, reconstruction, rehabilitation, or improvement of the streets, utilities, and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction, or improvement commenced.

12.165.01. *Tangent*: the straight-line distance between the ending of one curve of a line (center line of a street) and the beginning of another curve of the same line (center line).

12.166.01. *Ten-Year, 25-Year, and 100-Year Storms*: Rainfall events having a probability of occurrence once every 10,25, or 100 years, respectively, or a ten percent, four percent or one percent chance of occurring each year, respectively.

12.167.01. *Transmission Tower*: A structure constructed as a freestanding structure or in association with a building, other permanent structure or equipment, on which is located one or more antennae intended for transmitting or receiving television, AM/FM radio, digital, microwave, cellular, telephone, or similar forms of electronic communication. The term includes radio and television transmission towers, microwave towers, common carrier towers, and cellular telephone towers. The term excludes any tower and antenna under 70 feet in total height and owned and operated by an amateur radio operator licensed by the Federal Communications Commission, and satellite earth

station antenna two meters or less in diameter which is located in a commercial or industrial zoning district.

12.168.01. *Tree*: Any self-supporting woody perennial plant, usually having a main stem or trunk and branches, and at maturity normally attaining a trunk diameter greater than three inches at any point and a height of over ten feet.

12.169.01. *Tree Bank*: An account, maintained by the Finance Director of the City of Temple, of funds contributed from developers as a form of alternative compliance to the tree density requirements set forth in this article. Funds from the Tree Bank are to be used solely for the purchase and planting of trees on public property.

12.170.01. *Tree conservation plan*: A plan that identifies tree protection areas, existing trees to be retained and proposed trees to be planted on a property to meet minimum requirements, as well as methods of tree conservation to be undertaken on the site and other pertinent information/

12.171.01. *Tree Density Standard*: The minimum number of tree density units per acre that much be achieved on a property after development.

12.172.01. *Tree diameter*: The cross-sectional dimension of a tree trunk measured at four and one-half feet above the ground for existing trees or at the ball for newly planted trees. If a tree has more than one trunk, only the largest trunk shall be used to establish the tree diameter for the tree.

12.173.01. *Tree Protection Area*: Any portion of a site wherein are located existing trees which are proposed to be retained in order to comply with the requirements of this article. The tree protection area shall include no less than the total area beneath the tree canopy as designed by the dripline of the tree or group of trees collectively, plus an additional three feet.

12.174.01. *Tree Save Area*: An area designated for the purpose of meeting tree density requirements, saving natural trees, preserving the root system of natural trees and/or preserving natural buffers.

12.175.01. *Reserved*.

12.176.01. *Understory Tree*: Trees that grows beneath the over-story and will generally reach a mature height of under 40 feet.

12.177.01. *Utilities*: All public and private, above or below ground, infrastructure systems providing water, stormwater, sewer, gas, telephone, or cable television, and any other service controlled by the Georgia Public Services Commission.

12.178.01. *Vegetation*: All plant growth, such as trees, shrubs, mosses, and grasses.

12.178.02. *Violation*: For purposes of this article VIII and related provisions only, the failure of a structure or other development to be fully compliant with the City of Temple's floodplain management regulations. A structure or other development without the elevation certificate, other certificates, or other evidence of compliance required in article VIII is presumed to be in violation until such time as that documentation is provided to adopt provisions of the Model Floodplain Management/Flood Damage Prevention Ordinance.

12.179.01. *Reserved*.

12.180.01. *Watercourse*: Any natural or artificial watercourse, stream, river, creek, channel, ditch, canal, conduit, culvert, drain, waterway, gully, ravine, or wash in which water flows either continuously or intermittently and which has a definite channel, bed and banks, and including any area adjacent thereto subject to inundation by reason or overflow of floodwater.

12.181.01. *Yard*: An area that lies between the principal building on a lot and the nearest lot line

- a. Front yard: A yard situated along any public street right-of-way or private street easement.
- b. Rear yard: A yard situated along a rear lot line.
- c. Side Yard: A yard situated along a side lot line, but not extending into a front or rear yard.