

CITY OF ANNETTA SOUTH

SUBDIVISION ORDINANCE

Ordinance 71

Adopted - June 21, 2011
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EXHIBITS ATTACHED AS SEPARATE DOCUMENTS

EXHIBIT E	City of Fort Worth iSWM Stormwater Criteria Manual dated September 29, 2014
EXHIBIT F	City of Fort Worth iSWM Technical Manual Construction Controls section dated September 2014
EXHIBIT G	City of Fort Worth iSWM Technical Manual Hydraulics section dated September 2014
EXHIBIT H	City of Fort Worth iSWM Technical Manual Manual Hydrology section dated September 2014
EXHIBIT I	City of Fort Worth iSWM Technical Manual Landscape section dated September 2014
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EXHIBIT K	City of Fort Worth iSWM Technical Manual Site Development Controls section dated September 2014
EXHIBIT L	City of Fort Worth iSWM Technical Manual Water Quality section dated September 2014
EXHIBIT M	City of Fort Worth iSWM Technical Manual Construction Control Standards Details dated 2018

PURPOSE AND POLICY

- (a) These subdivision regulations of the City are designed and intended to achieve the following purposes and shall be administered so as to:
- (1) promote the health, safety, morals and general welfare of the community and the safe, orderly and healthful development of the City;
 - (2) establish adequate policies and procedures to guide development of the City and its extraterritorial jurisdiction;
 - (3) provide for the establishment of minimum specifications for construction and engineering design criteria for public infrastructure improvements to maintain land values, reduce inconveniences to residents of the area, and to reduce related unnecessary costs to the City for correction of inadequate facilities that are designed to serve the public;
 - (4) ensure that development of land and subdivisions shall be of such nature, shape and location that utilization will not impair the general welfare;
 - (5) ensure against the dangers of fires, floods, erosion, drought, landslides, and other such menaces;
 - (6) preserve the natural beauty and topography of the City and to ensure appropriate development with regard to these natural features;
 - (7) realistically and harmoniously relate new development of adjacent properties;
 - (8) provide the most beneficial circulation of traffic throughout the City, having particular regard to the avoidance of congestion in the streets and highways, and pedestrian traffic movements; and to provide for the proper location and width of streets;
 - (9) ensure that public facilities for water supply, drainage, disposal of sanitary and industrial waste, and parks are available for every building site and with adequate capacity to serve the proposed subdivision before issuance of a certificate of occupancy or release of utility connections or final inspection within the boundaries of the plat;
 - (10) assure that new development adequately and fairly participates in the dedication and construction of public infrastructure improvements that are necessitated by or attributable to the development or that provide value or benefit that makes the development feasible;
 - (11) help prevent pollution, assure the adequacy of drainage facilities, control storm water runoff, safeguard the water table, and encourage the wise use and

management of natural resources throughout the City and its extraterritorial jurisdiction in order to preserve the integrity, stability, and beauty of the community and the value of the land; and

- (12) provide for open spaces through the most efficient design and layout of the land, while preserving the land use intensity as established in the Zoning Ordinance of the City.
- (b) To carry out the purposes hereinabove stated, it is declared to be the policy of the City to guide and regulate the subdivision and development of land in such a manner as to promote orderly growth both within the City and where applicable, within its extraterritorial jurisdiction.
- (c) Land must not be platted until proper provision has been made for adequate public facilities for roadways, drainage, water, wastewater, public utilities, capital improvements, parks, recreation facilities, and rights-of-way for streets and sidewalks.
- (d) Proposed plats or subdivisions which do not conform to the policies and regulations shall be denied, or, in lieu of denial, disapproved conditioned on conformance with conditions.
- (e) There shall be an essential nexus between the requirement to dedicate rights-of-way and easements and/or to construct public works improvements in connection with a new subdivision and the need to offset the impacts on the City's public facilities systems created by such new development.

ADEQUATE PUBLIC FACILITIES

- (a) Land proposed to be subdivided must be served adequately by essential public facilities and services, including water and wastewater facilities, roadway and pedestrian facilities, drainage facilities and park facilities. An application for a plat or development may be denied unless adequate public facilities necessary to support and serve the development exist or provision has been made for the facilities, whether the facilities are to be located within the property being platted or offsite.
- (b) It is necessary and desirable to provide for dedication of rights-of-way and easements for public works improvements to support new development at the earliest stage of the development process.
- (c) The City desires to assure both that impacts of new development are mitigated through contributions of rights-of-way, easements and construction of capital improvements, and that a new development be required to contribute not more than its proportionate share of such costs.
- (d) Proposed public works improvements serving new development shall conform to and be properly related to the public facilities elements of the City's adopted Master Plan, other

adopted master plans for public facilities and services, and applicable capital improvements plans, and shall meet the service levels specified in such plans.

MINIMUM STANDARDS

- (a) The standards established in this Ordinance for dedication and construction of public works improvements and infrastructure are based upon engineering studies and historical usages and demands by different categories of development. These regulations identify certain minimum requirements and sizes for utilities, roadways, parks and other facilities that the City Council has determined to be necessary in order to provide the minimum level of service necessary to protect or promote the public health, safety, and welfare and to assure the quality of life currently enjoyed by the citizens of Annetta South. It is the intent of these regulations that no development occur until and unless these minimum levels of service are met. Therefore, each subdivision in the City shall be required to dedicate, construct and/or upgrade required facilities and infrastructure to a capacity that meets these minimum levels.
- (b) For each category of public infrastructure, a minimum standard of infrastructure, and in some cases, service level, has been developed based upon historic studies and construction projects of the City and other cities. These minimum standards take into consideration the soil conditions and topographic configuration of the City, the use of the North Central Texas Council of Governments development, engineering and construction standards in developing standard specifications for public works installation, and other historical use and performance experiences of the City that reflect the minimum level of facilities and services that must be built to meet the health, safety and welfare of the citizens of Annetta South.
- (c) In order to maintain prescribed levels of public facilities and services for the health, safety and general welfare of its citizens, the City may require the dedication of easements and rights-of-way for or construction of on-site or off-site public works improvements for water, wastewater, road, drainage or park facilities to serve a proposed subdivision, or require the payment of fees in lieu thereof. If adequate levels of public facilities and services cannot be provided concurrent with the schedule of development proposed, the City may deny the subdivision until the public facilities and services can be provided, or require that the development be phased so that the availability and delivery of facilities and services coincides with the demands for the facilities created by the development.
- (d) Whenever the City Council determines that levels of service in excess of these minimum standards are necessary in order to promote the orderly development of the City, the owner shall qualify for reimbursement for any costs in excess of the minimum levels of service through City participation, to the extent funds are available by a pro rata reimbursement policy or other means adopted by the City.

ADEQUACY OF SPECIFIC FACILITIES

- (a) All lots to be platted shall be served by an approved means of groundwater or connection to a public water system which has capacity to provide water for domestic use and emergency purposes, including adequate fire protection.
- (b) All lots to be platted shall be served by an approved means of wastewater collection and treatment. The City Engineer shall be responsible for determining the approved means of wastewater collection and treatment. The City may require the phasing of development and/or improvements in order to maintain adequate wastewater capacity.
- (c) Proposed roads shall provide a safe system for vehicular, bicycle, and pedestrian circulation and shall be properly related to the City Thoroughfare Plan and any amendments thereto, and shall be appropriate for the particular traffic characteristics of each proposed subdivision or development. New subdivisions shall be supported by a thoroughfare network having adequate capacity, and safe and efficient traffic circulation. Each development shall have adequate access to the thoroughfare network.
- (d) Drainage improvements serving new development shall be designed to prevent overloading the capacity of the downstream drainage system. The City may require the phasing of development, the use of control methods such as retention or detention, the construction of off-site drainage improvements, or drainage impact fees in order to mitigate the impacts of the proposed subdivision.

IMPROVEMENT OF ADJACENT AND ABUTTING EXISTING STREETS AND UTILITIES

In the case of existing adjacent or abutting roads, the City may require that the entire right-of-way be dedicated and/or improved to the City's design standards, based upon factors including the impact of the proposed subdivision on the road, safety to the traveling public, conditions and life expectancy of the road, the impact of the proposed subdivision on other roads, the timing of this development in relation to need for improving the road, the impact of the traffic on the road and City's roadway system as a whole.

TIMING OF DEDICATION AND CONSTRUCTION

- (a) The City shall require an initial demonstration that a proposed subdivision shall be adequately served by public facilities and services at the time for approval of the first development application that portrays a specific plan of development, including but not limited to a petition for establishing a planned development zoning district, or other overlay zoning district; or a developer's agreement; or an application for a final plat.
- (b) The obligation to dedicate rights-of-way for or to construct one or more public works improvements to serve a new subdivision may be deferred until approval of a subsequent

phase of the subdivision, at the sole discretion of the City Engineer, upon written request of the property owner, or at the City's own initiative. As a condition of deferring the obligation, the City may require that the subdivider include provisions in the developer's agreement, specifying the time for dedication of rights-of-way for or construction of public works improvements serving the subdivision.

Section 1: Planning and Zoning Commission

There is hereby created a planning and zoning commission of the City which is sometime referred to herein as the "Commission."

The planning and zoning commission shall consist of five (5) members who shall be appointed for two-year terms by the City Council. Three of such members' terms shall expire on May 31 of even numbered years and two on May 31 of odd numbered years.

The planning and zoning commission shall hold an organizational meeting each November and elect a chairman and vice-chairman from its own membership, and shall adopt such procedural rules as it may deem necessary so long as such rules or regulations do not contravene the ordinances of this city or the laws of the state.

The planning and zoning commission shall have the power to make rules, regulations and bylaws for its own government, which shall conform as nearly as possible with those governing the City Council and same shall be subject to approval by such council. The commission shall be responsible for:

Three (3) members of the Commission shall constitute a quorum for the conduct of business. The members of the commission shall regularly attend meetings and public hearings of the Commission and shall serve without compensation, except for reimbursement for authorized and approved expenses attendant to the performance of their duties.

There is hereby created the position of "Executive Secretary" to the Commission. The City Secretary or a designated representative shall serve as the Executive Secretary.

The Executive Secretary shall have full care, custody, and control of the minutes and official records; shall attend to the correspondence of the commission; and shall give such notices as are required and in the manner prescribed by statute, ordinance, these rules, or vote of the Commission.

Section 2: Subdivision Regulations

Plats shall not be effective until approved by the City Council following recommendation by the planning and zoning commission.

The owner of a tract of land located within the City of Annetta South or within its extraterritorial jurisdiction who divides the tract into two or more parts to lay out a subdivision of the tract, including an addition to the City, or to lay out suburban, building, or other lots, or to lay out streets, alleys, squares, parks or other lots, or to lay out streets, alleys, squares, parks or other parts of the

tract intended to be dedicated to public use or for the use of purchasers or owners of lots fronting on or adjacent to the streets, alleys, squares, parks, or other parts must have a plat of the subdivision prepared. A division of a tract under this section includes a division regardless of whether it is made by using a metes and bounds description in a deed of conveyance or in a contract for a deed, by using a contract of sale or other executory contract to convey, or by using any other method. A division of land under this subsection does not include a division of land into parts greater than five acres, where each part has access and no public improvement is being dedicated. No permit for the erection of a structure or any improvement shall be granted prior to the approval of the City Council in compliance with the regulations of this ordinance. An owner may seek approval of a plat of a portion of his land, leaving the balance unplatted, but the City Council may require platting of all or a portion of the balance as a condition of approval of any portion in order to insure proper planning and installation of essential services.

A division of land within the City or the ETJ shall be exempt from the platting regulations where the division of land is into parts all greater than five (5) acres each, each part has access to a public street, and no public improvement is being dedicated.

Any parcel requiring a City permit must first be platted and recorded in accordance with this Ordinance regardless of the size.

Every application for final plat, amended plat, replat, vacation plat, right-of-way or easement shall be accompanied by a filing fee in an amount sufficient to defray the cost of reviewing the processing and posting the application. Such fees shall be established and amended by the City Council.

Section 3: Rules, Regulations, Standards and Design Standards

- (1) The general plans, rules, and ordinances of the City concerning its current and future streets, sidewalks, alleys, parks, playgrounds, and public utility facilities;
- (2) The City's general plans and rules for the extension of improvement, or widening of its roads, streets, and public highways within the City and in its extraterritorial jurisdiction, taking into account access to and extension of sewer and water mains and the instrumentalities of public utilities; and
- (3) Any general plans, rules or ordinances hereunder.
- (4) Extraterritorial Jurisdiction. These rules and all previously adopted rules governing plats and subdivisions of land within the City of Annetta South shall be and are hereby extended to the extraterritorial jurisdiction of the City of Annetta South.
- (5) Plats shall identify the source or provider of water and sewer service for the land being platted. Lots within and without the town shall have adequate easements for water and sewer service, if such service will be provided offsite. If water and/or sewer service is to be provided on each individual lot, the minimum lot size shall be two acres without regard to minimums provided by zoning unless, prior to final

plat submission, Parker County first approves sanitary sewer service on each lot and the authority with jurisdiction over water wells gives written approval for service on each lot. If only sewer service is to be provided on individual lots, written approval by Parker County for such service shall be submitted prior to final plat approval. If only water service is to be provided on individual lots, then written approval by the authority with jurisdiction over such service shall be submitted prior to final plat approval. If any such water or sewer service is to be provided by an off-site provider, certification must be provided from the provider that such system meets state requirements for such service and has adequate capacity to serve the proposed subdivision.

- (6) The City Council shall approve a Subdivision Process Calendar for every calendar year. Such calendar shall prescribe at a minimum the "application deadline date" for submission of plats, the date applications are deemed accepted and Filed, and the meeting date on which plats will be considered.
- (7) Any plat applications and supporting required documents thereto and the information contained therein shall be consistent with each other. A failure to be consistent between one or more required documents shall be deemed a violation of this subsection as to all documents affected.
- (8) All plat submission must be made to the City Secretary in order to be processed. The City Council shall approve the physical address where submission shall be sent as well as the necessary number of physical copies of required documents that must be submitted. The City Council may approve any method of electronic submission they deem appropriate for submission to be made in lieu of physical submissions.

Section 4: Approval

The Commission and Council shall approve a plat that conforms to this ordinance and the general plans, rules, and ordinances of the City concerning its current and future streets, sidewalks, alleys, parks, playgrounds, and public utility facilities; and the extension, improvement, or widening of its roads, streets, and public highways within the City and in its extraterritorial jurisdiction, taking into account access to and extension of sewer and water mains and the instrumentalities of public utilities.

Section 5: Conditional Approval

The Commission may recommend conditional approval of a plan or plat where there is a rezoning application pending.

Conditional approval by City Council shall constitute disapproval until all the conditions are met. The revised plan or plat is subject to review and approval by the City Engineer for conformance with the conditions of approval.

Conditional Approval by the City Council shall not extend beyond one calendar year from the date of conditional approval unless the Commission grants an additional extension.

Section 6: Drainage Study

- A. A drainage Study shall be prepared by the Owner, submitted by the Owner, reviewed by the City Engineer, and approved by the City Engineer prior to submittal of any final plat or replat by the owner.
- B. Completeness Review of any plat submittal shall not be approved without prior approval of a Drainage Study by the City Engineer.
- C. No plat submittal shall be approved without prior approval of a Drainage Study by the City Engineer.
- D. Requirements and Contents
 - 1. Drainage Study shall be prepared, signed and sealed by a Professional Engineer licensed and registered in the State of Texas, whose license is active and in good standing with the Texas Board of Professional Engineer and Land Surveyors.
 - 2. Proposed site plan
 - 3. Pre-Development Drainage Area Map and Post-Development Drainage Area Map on separate sheets. Drainage areas contributing drainage to the proposed subdivision shall be shown. The information submitted shall include the area, slope, type of development in contributing area and calculations for the rate of runoff from that area to be carried through the proposed subdivision.
 - 4. The Proposed Site Plan, Pre-Development Drainage Area Map and Post-Development Drainage Area Map shall show Topography shown by contour lines on a basis of two feet (2') vertical intervals on flat land and five (5') feet on steep grade property. All elevations on the contour map shall be referenced to the latest U.S.C. and G.X. data.
 - 5. The following Existing Features shall be shown on the Proposed Site Plan, the Pre-Development Drainage Area Map and the Post-Development Drainage Area Map: City Limit Lines, ETJ Lines, Property Lines, Existing right-of-way lines, Existing Roadways, Existing Lot Lines, Existing Easements, Existing Drainage Ways, Existing Culverts, Existing Drainage Swales, Existing Open Channels, Existing Detention Basins, Existing Parks and Open Spaces, Existing structures such as existing walls, existing buildings, existing homes, existing barns, existing accessory buildings, existing fences, existing roads, existing driveways, existing wetlands. And Existing Floodplains and/or areas inundated by the 100-year storm including those identified by FEMA Firms and FIRMettes. Easement documents shall be provided for all existing easements for review.

6. The following proposed features shall be shown, identified and dimensioned on the Proposed Site Plan and the Post-Development Drainage Area Map: Proposed Lots, Proposed Roads, Proposed Right-of-way lines, Proposed Easements, Proposed Drainage Ways, Proposed Culverts, Proposed Open Channels, Proposed Drainage Swales, Proposed Detention Basins, Proposed Driveways, Proposed Walls, Proposed Fences, Proposed Entry Features, Proposed Utilities, Proposed Parks, Proposed Water Features, Proposed Wetlands, Proposed Public Areas, any Proposed Changes to the floodplain and/or areas inundated by the 100-yr storm, and Proposed Grading Topography shown by contour lines on a basis of two feet (2') vertical intervals on flat land and five (5') feet on steeper grade property. All elevations on the contour map shall be references to the latest U.S.C and G. S. data.
7. The location or locations of disposal of drainage from the Drainage Areas contributing to and including the proposed subdivision shall be shown together with the quantity of drainage totaled per exit discharge location in the calculations shown on the Pre-Development and Post-Development Drainage Area Maps.
8. Directional low arrows shall be shown on the Pre-Development and Post Development Drainage Area Maps to indicate direction of storm water flow.
9. Any increase in the rate of storm water runoff for pre-development to post development for each stormwater exit point shall be detained so that there is no increase in the rate of storm water runoff from pre-development to post development.
10. Detention structures and detention calculations shall be shown for detention volume, detention stage storage and the reduced rate of runoff for the 1-yr., 25-yr., and 100-yr. storms. Refer to the following sections of the Annetta South Subdivision Ordinance for guidance; Section 28: Storm Drainage Facilities; Section 28: Storm Drainage Facilities; EXHIBIT A: Storm Drainage EXHIBIT E: the City of Ft. Worth iSWM (integrated storm water management) Stormwater Criteria Manual dated September 29, 2015; EXHIBIT F: the City of Ft. Worth iSWM Technical Manual Construction Controls section dated September 2014; EXHIBIT G: City of Ft. Worth iSWM Technical Manual Hydraulics section dated September 2014, EXHIBIT H: City of Ft. Worth iSWM Technical Manual Hydrology section dated September 2014, EXHIBIT I: City of Ft. Worth iSWM Technical Manual Landscape section dated September 2014, EXHIBIT J: City of Ft. Worth iSWM Technical Planning section dated September 2014, EXHIBIT K: City of Ft. Worth Technical Manual Site Development Controls section dated September 2014; EXHIBIT L: City of Ft. Worth Water Quality section dated September 2014; EXHIBIT M: City of Ft. Worth: iSWM

Technical Manual iSWM Construction Control Standards Details dated 2018.

11. Any waiver requests that will be made in conjunction with the submitting of the Final Plat shall be noted the appropriate document.

Section 7: Processing Plats

- A. All plats processed by the City shall follow requirements and procedures set forth in this ordinance.
- B. All Replats shall be processed in the same manner and conform to the same requirements as a Final Plat.
- C. All Amending Plats, Correction Plats, Vacated Plats, Vacated Right-of-Way or Easements shall conform to the same application and approval process as a Final Plat.

Section 8: Prerequisite to filing of Final Plat

No Final Plat or Replat shall be submitted without prior approval, by the City Engineer, of a Drainage Study as required by Section 6. It is to be understood that the approval of the Drainage Study by the City Engineer does not constitute an official acceptance of the proposed subdivision by the City, but does constitute an authorization to begin and proceed with the preparation of the final subdivision plat. There shall be no work done in the field of the proposed subdivision until the final plat has been approved and accepted.

Section 9: Final Plat

- A. General
 1. No subdivision of land shall be accomplished without proper submittal, approval and adoption of a final plat prepared by a Registered Public Surveyor, and approval of construction plans for improvements prepared by a Professional Engineer in accordance with this Ordinance.
 2. The Final Plat shall consist of a set of drawings where the first sheet shall be an Index Map that shall be drawn at a scale of 200 feet to one (1) inch, followed by the Final Plat plan sheets drawn at a scale of 100 feet to one (1) inch. All sheets shall be drawn such that the drawing is aligned 90 degrees North and is not rotated. Each sheet shall be suitably indexed. For large subdivisions, the final plat may be submitted for approval progressively in contiguous sections.
 3. The final plat shall only be approved for filing at the Parker County Plat Records after all engineering plans have been reviewed and approved (or conditionally approved) by the City Engineer.

B. Application and Copies Required

1. A digital combined PDF set of the final plat and construction drawings shall be emailed to the City Secretary. Ten (10) copies of the PDF final plat, at half size, including the construction drawings that has been reviewed by the City Engineering and correctly dated shall be presented at the Planning and Zoning Commission meeting and the City Council meeting.
2. The original of the final plat, deed restrictions and other required data, and shall be executed and submitted to the City Secretary City's Subdivision Process Calendar. No plat will be considered by the City until the prescribed filing fees have been paid.
3. If final plats are submitted for approval by portions or sections of the proposed subdivision, each portion or section shall list the name of the entire subdivision but shall bear a distinguishing letter, number, or subtitle. Block letters shall run consecutively throughout the entire subdivision, even though such subdivision might be finally approved in sections.

C. Filing Fees and Certificates

1. When the final plat is filed with the City Secretary for consideration and adoption, it shall be accompanied by a filing fee as specified by City regulations. The deposit of such fees shall constitute formal request for plat approval.
2. The final plat submitted for signature of approval shall be accompanied by certificates from the City, School District and County Tax Collectors showing that all City, School District and County taxes on the land being subdivided have been paid to the current year.

D. Final Plat Exhibit

The final plat shall contain the following information:

1. Title or name of subdivision, written and graphic scale, north arrow, date of plat and key map to reference existing or proposed streets or highways.
2. Location of the subdivision by City, County and State.
3. Primary control points or descriptions and ties to such control points, to which dimensions, angles, bearings and similar data on the plat shall be referred. At least one corner of a subdivision shall be tied by course and distance to one or more of the following:

- a. A corner of the survey or tract or original corner of the original survey in which the property is located;
 - b. A corner of a platted lot; or
 - c. A block corner or subdivision corner of an adjacent or nearby platted subdivision.
4. A metes and bounds description of the tract, tract boundary lines, right-of-way lines to streets, easements and other rights of way, property lines and building setback lines. Such descriptions shall reference all field markers as either found or set by the surveyor. Description shall include size of subdivision in acres and square feet, official name of subdivision, abstract references, name of current owners, date of previous transfer and volume and page of previous transfer.
 5. Adequate relocation data in order to reproduce the subdivision on the ground. All lot corners, right of way and inflection points shall be field marked by a public surveyor registered in the State of Texas. Such markers shall be at least five-eighths inch (5/8") iron rods, six feet (6') deep or five-eighths Inch (5/8') Iron rods embedded to a depth of three feet (3') in concrete (6" minimum diameter). All markers shall be flagged with surveying marking tape.
 6. Approved name and right-of-way width of each street as measured from center line.
 7. Locations, dimensions and purposes of any easements or other rights of way
 8. Identification of each lot or site and block by letter or number.
 9. Boundary lines, dimensions and names of open spaces to be dedicated for public use or granted for the private use and private maintenance of the inhabitants of the subdivisions.
 10. Reference to recorded subdivision plats of adjoining platted land by record name, County Clerk's volume and page numbers and reference by record name of ownership of adjoining unplatted property.
 11. Total number of lots and total acreage contained in the subdivision and the area, in square feet, of each lot.
 12. Building lines shall be shown and shall provide the minimum set-back as required by this Ordinance, or, of greater, those established by the Zoning Ordinance.

13. For dams regulated by Chapter 299 of Texas Government Code, no Final Plat shall be approved without the applicant providing all documentation, calculations, and reports to verify and prove that all requirements of TCEQ and State of Texas have been satisfied.
14. Any other information requested by the Commission of Council.

F. Certificates or Restrictions

1. Certifications by a land surveyor to the effect that the plat represents a survey made or certified by him and that all required monuments and markers actually exist, or will be installed in accordance with the provisions of these regulations, and that their location, size, and material are correctly shown on the plat. (See sample certificate).
2. Certification of title and statement signed and acknowledged by the owner, and of all others having interest in the free title of the subdivision, dedicating streets, alleys, easements, parks and other spaces to public use, or when the subdivider has made provision acceptable to the City Council for perpetual maintenance thereof to the inhabitants of the subdivision.(See sample).
3. Spaces for signatures of the Chairman of the Planning and Zoning Commission, Mayor and City Secretary, attesting approval of the plat.

Sample Certificate of Surveyor Who Prepared Plat

STATE OF TEXAS

COUNTY OF PARKER

I, _____, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that I prepared this plat from an actual and accurate survey of the land and that the corner monuments shown thereon were properly placed, under my personal supervision, in accordance with the subdivision regulations of the City of Annetta South, Texas.

(Surveyor's Seal)

Registered Professional Land Surveyor
Registration No. _____

Date: _____

Sample Owner's Acknowledgment And Dedication

STATE OF TEXAS

COUNTY OF PARKER

I (we), the undersigned, owner(s) of the land shown on this plat within the area described by metes and bounds as follows:

(Metes and Bounds Description of Bound)

and designated herein as the _____ subdivision to the City of Annetta South, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements, rights-of-way and public places thereon shown for the purpose and consideration therein expressed.

OWNER

Date: _____

STATE OF TEXAS

COUNTY OF PARKER

BEFORE ME, the undersigned authority, on this day personally appeared _____, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and considerations therein stated.

Given under my hand and seal of office this ____ day of _____, 20____.

Notary Public
_____ County, Texas

CITY APPROVAL BLOCK

City of Annetta South Approval:

Planning & Zoning Date: _____

Planning & Zoning Chairman: _____

City Council Date: _____

Mayor: _____

City Secretary: _____

G. Water supply and sanitary sewer service certification

1. Every plat subdividing land into two or more parcels shall indicate the source of water therefore, and if the source of water supply intended for the subdivision is groundwater under that land, it shall include with the application for plat, a Groundwater Certification from the upper Trinity Groundwater District if such water supply is to be provided by wells not a part of a public water supply system with a Certificate of Public Convenience and Necessity issued by the State of Texas. Groundwater Certification is governed by §212.0101 of the Texas Local Government Code.
2. If any water or sewer service is to be provided by an off-site provider, certification must be provided from the State of Texas that such provider holds a certificate of public convenience and necessity for such service and from the provider that such system meets state requirements for such service and has adequate capacity to serve the proposed subdivision.
3. If sewer service is to be provided on any individual lot, the minimum lot size shall be two acres without regard to minimums provided by zoning unless, prior to final plat submission, proof is provided that Parker County has approved sanitary sewer service on each such lot.

Section 10: (Reserved.)

Reserved.

Section 11: Replat

1. A Replat does not vacate the previous plat of record governing the remainder of the subdivision.
2. Replats shall be processed in accordance with Texas Local Government Code §§ 212.014, 212.0145 and 212.015. If a proposed replat does not require a variance, written notice of the approval shall be provided within 15 days of approval by mail to each property owner within 200 feet of the lots to be replatted. This does not apply if a public hearing is held related to a variance where proper notice to property owners is provided.

Section 12: Amending Plat

A plat of record may be amended without public notice, a public hearing, or approval of other lot owners and is controlling over the preceding plat without vacation for one or more of the following purposes:

1. To correct errors in course or distance;
2. To add any course or distance that was omitted;
3. To correct an error in the description of the real property;
4. To indicate monuments set after death, disability, or retirement from practice of the engineer or surveyor charged with responsibility for setting monuments;
5. To show the location or character of any monument that has been changed or was incorrectly shown;
6. To correct any other type of scrivener or clerical error or omission including lot numbers, acreage, street names, and identification of adjacent recorded plats;
7. To correct an error in courses and distances of lot lines between two adjacent lots if both lot owners join in the application for amending the plat; neither lot is abolished; the amendment does not attempt to remove recorded covenants or restrictions; and the amendment does not have a material adverse affect on the property rights of the other owners in the plat;
8. To relocate a lot line to eliminate an inadvertent encroachment of a building or other improvement on a lot line or easement;
9. To relocate one or more lot lines between one or more adjacent lots if the owners of all those lots join in the application for amending the plat; the amendment does not attempt to remove recorded covenants and restrictions; and the amendment does not increase the number of lots.

An Amending Plat is filed for record in the county of jurisdiction upon approval by the City Council

Section 13: Correction Plat

A plat may be corrected without public notice, a public hearing, or approval of other lot owners and is controlling over the preceding plat without vacation for one or more of the purposes listed in 1 through 7 in Subsection E, “Amending Plats” above.

A Correction Plat is filed for record in the county of jurisdiction upon approval by the City Council

Section 14: Vacated Plat

A recorded plat may only be vacated per the provisions of Section 212.013 of the Texas Local Government Code. A Vacated Plat must meet the following requirements:

1. If any lot has been sold to an individual property owner, the vacation application shall include the signatures of 100% of all property owners within the recorded subdivision.
2. No partial plat may be vacated without the consent of all property owners encompassed by the prevailing recorded plat.
3. No plat may be vacated unless access is provided to individual platted lots and public street and alley rights of way, parks, public sites and facilities, and utility and drainage easements and improvements are provided in the accompanying replat.
4. No Vacated Plat may be recorded in the county of jurisdiction without a public hearing and approval of the City Council.

Section 15: Vacated Right-of-Way or Easements

Dedicated public Right-of-Way may be considered for vacation when an application is received requesting same signed by all adjacent property owners accompanied by an exhibit and legal description to be included in the City Vacation Ordinance if approved by Council after hearing and recommendation from Planning & Zoning Commission. Written concurrence is required from all franchise utility companies and any other likely utility company effected by subject vacation.

Section 16: Form and Content of Construction Plans and Calculations

A. General

All improvements shall be designed in accordance with this Ordinance.

B. Roadway Plans

A plan and profile of each street with top of curb grades, existing and proposed ground line, and topographic contours shall be shown. Each sheet shall include north arrow, scale, date, and bench mark description to sea level datum. The sheet shall be oriented so that the required north arrow points 90 degrees to the top of the page or 90 degrees to the right edge of page. Scales shall be one (1) inch equals 40 or 50 feet horizontally and 1-inch

equals 4, 5, or 10 feet vertically. The typical cross-section of proposed streets showing the width of roadways and type of pavement and location and width of sidewalk shall be shown. Each plan shall show the seal and signature of the Licensed and Registered Texas Professional Civil Engineer registered professional civil engineer who prepared the plans.

C. Sanitary Sewer and Water Plans

A plan and profile of proposed sanitary sewers, with grades and pipe sizes indicated and showing topographic contours, locations of manholes, cleanouts, etc., and a plan of the proposed water distribution system showing topographic contours, pipe sizes and location of valves, fire hydrants, and fittings, etc., in conformance with the criteria as shown in the part of the Ordinance listed as “Design Standards”. Each plan shall show the seal and signature of the Licensed and Registered Texas Professional Civil Engineer who prepared tile plans. The sheet shall be oriented so that the required north arrow points 90 degrees to the top of the page or 90 degrees to the right edge of page.

D. Stormwater Drainage Plans

1. A plan and profile of proposed storm sewers or channels, showing topographic contours hydraulic data, pipe grades and sizes, manholes, inlets, pipe connections, outlet structures, etc., in conformance with the criteria as shown in this Ordinance. The sheet shall be oriented so that the required north arrow points 90 degrees to the top of the page or 90 degrees to the right edge of page. Each plan shall show the seal and signature of the Licensed and Registered Texas Professional Civil Engineer who prepared the plans. Each sheet shall include north point, scale, date, and bench mark description to sea level datum.
2. A general location map of the subdivision showing the entire watershed (a U.S.G.S. quadrangle is satisfactory).
3. Calculations showing the anticipated storm water flow, including watershed area, percent runoff, and time of concentrations shall be submitted showing basis for-design.
4. Detailed plans shall be submitted for any bridges, culverts, catch basins, detention basins, retention basins, dams, lakes, open channels, rain gardens, swales, and any other drainage structures, or any other improvements to be made.

E. Utilities

The subdivider must furnish a written statement to the City designating that the subdivision will be served with gas or will be totally electric service. If a gas distribution system is to be installed then all distribution mains and service lines shall be installed before street construction is completed.

Section 17: Processing of Final Plat and Construction Plans

An applicant shall file a final plat application with the City Secretary on or before the "application deadline date" in accordance with the approved Subdivision Process Calendar. In addition, such final plat application shall be accompanied by the required final plat document and construction plans. The initial filing fee is due with the application.

If any application is incomplete, meaning missing any required documents, the City Secretary shall notify the applicant in writing within ten business days of the date of the application that the application is incomplete. An incomplete application will not be accepted as filed, as provided in the Subdivision Process Calendar.

The City Secretary shall forward the final plat documents to the City Engineer, who will check same for conformity with applicable engineering standards and specifications set forth herein. The City Engineer shall return the final plat to the City Secretary with any suggestions as to modifications, additions, alterations or other matters pertinent to the plat. The City Secretary shall make these suggestions available to the Planning and Zoning Commission.

Within thirty (30) days after the application is Filed, the Planning and Zoning Commission shall review and recommend approval, approval with conditions or disapproval the final plat. Failure to act within thirty (30) days shall be deemed a recommendation of approval of the final plat. After Planning and Zoning Commission action on the final plat, it shall be sent to the City Council for review. Such review shall be completed within 30 days after Planning and Zoning Commission action.

The City Council shall review the final plat and may approve, approve with conditions, or deny with or without comment within 30 days of the date the Planning and Zoning Commission approves or denies. The City shall provide the reasons for any such denial or approval with conditions, in writing to the applicant.

No construction shall be commenced on the subdivision prior to City Council approval of the final plat and construction plans, and the applicant providing any required bonds, and payment of any third-party review fees.

If the final plat is approved, the Mayor shall execute the approval certificate on the plat and have it attested by the City Secretary. Any associated required third-party review fees are due at this time prior to the City providing an applicant with an approved final plat.

After the final plat and plans have been approved by the City Council, but before construction of water, sewer, street or drainage improvements as stated, the subdivider shall furnish the City with six (6) sets of the completed detailed plans and specifications.

Block corners shall be set prior to construction of public facilities and all lot corners shall be set prior to the issuance of any building permits.

The final plat shall be recorded by the City Secretary in the office of the County Clerk of the County only when the detailed plans and specifications for construction of required public improvements have been filed with the City, and the performance bond required by Section 17 hereof has been provided to the City.

Upon filing the plat in the County Records, the City Secretary shall have three (3) photostatic copies made by the County Recording Clerk on standard 18 inch by 25-inch sheets showing the Volume and Page where filed. One (1) copy will be placed in the permanent plat record book at the City Hall, one will be furnished to the City Engineer and one will be furnished to the surveyor.

Section 18: Requirements for Construction, Bonds, Drawings, Acceptance

A. Inspection

1. All construction of street grading, street paving, drainage structures, curb and gutter, and storm sewers shall be subject to inspection during the construction period by the proper authorities of the City, and shall be constructed in accordance with the approved final construction plans and specifications.
2. All construction of sanitary sewers and water mains shall be subject to inspection by the holder of the certificate of public convenience and necessity of the sanitary sewer and water and the City, and shall be constructed in accordance with the approved final construction plans and specifications.

B. Bonds

A performance bond and payment band shall be issued, each in an amount equal to one hundred ten percent (110%) of the full amount of the cost of constructing all streets, drainage, utilities and other public facilities required by the approved final construction plans and payable to the City and to the holder of any holder of a certificate of public convenience and necessity for service to be provided for such subdivision. Such bonds be issued by a corporate surety satisfactory to the City's attorney conditioned as he may require. The subdivider shall furnish a good and sufficient maintenance bond, in an amount equal to one hundred ten percent (110%) of the costs of the improvements required, executed by a reputable and solvent corporate surety, holding a license to do business in the State of Texas, in favor of the City and the holder of any certificate of public convenience and necessity which will serve the subdivision, to indemnify the City and such CCN holder against any repairs which may become necessary to any part of the construction work performed in connection with the subdivision, arising from defective workmanship or materials used therein, for a full period of two (2) years from the date of final acceptance of the entire project. Final acceptance will be withheld until said maintenance bond is furnished to the City. Such Bond to be approved as to form and legality by the City Attorney.

C. As-Built Drawings

After all improvements required of the City have been completed by the owner or subdivider of the proposed subdivision, the City will be provided one (1) set of as-built

drawings of all underground utilities and street improvements that have been constructed, the same to be filed within thirty (30) days after completion of all required improvements.

D. Acceptance by City

Acceptance by the City after receipt of as-built drawings shall be in the form of a letter from the Mayor or other authorized city official and the holder of the CCN for water and sewer service to the Subdivider stating that inspections were conducted as the facilities were completed in accordance with specifications and standards provided for herein or approved by the City Council at the time the final plat was approved for said subdivision.

E. Issuance of Building Permits

No required building permit, water, sewer, plumbing or electrical permit or service shall be issued or allowed to a Subdivider, owner or any other person with respect to any property in any subdivision covered by this Ordinance until such time as all of the applicable requirements of the Ordinance have been satisfactorily completed and the construction accepted by the City.

Section 19: Minimum Subdivision Requirements and Design Criteria

Exhibits A through D to this ordinance are hereby adopted. This Section and such Exhibits establish the minimum requirements and design criteria for subdivisions.

This part of the Subdivision Ordinance is primarily intended for the use of the Subdivider's Engineer to enable him to design required community facilities which will be acceptable to the City. There may be special circumstances which would dictate requirements in excess of those outlined; however, in most cases, these exceptions will be apparent to the Subdivider's Engineer while preparing the plans for the subdivision.

The City Council may refuse to approve a plat when there is evidence that the same cannot be served with adequate water, sewer, street and drainage facilities within a period of two (2) years. It is anticipated that the subdivider will have the burden of showing how he proposes to furnish water, sewer, street and drainage services within such time if such are not immediately adjacent to such proposed subdivision.

A. General Requirements

1. The arrangement, character, extent, width, grade, and location of all streets shall conform to the City Plan and shall be considered in their relation to existing and planned streets, to topographical conditions, to drainage in and through subdivisions, to public convenience and safety and their appropriate relation to the proposed uses of land to be served by such street. Specific consideration shall be given to producing desirable lots .of maximum usability and streets of reasonable gradient.

2. Where a residential subdivision abuts or contains the right-of-way of a railroad or a limited access highway, or abuts a commercial or industrial land use, a street may be required approximately parallel to and on each side of such right-of-way. The location of such right-of-way shall be determined with due regard for approach grades, drainage, bridges or future grade separations, and the appropriate development of abutting land.
3. The reservation in private ownership of strips of land at the end or alongside offered or existing streets and intended solely or primarily for the purpose of controlling access to property not included in the subdivision shall be prohibited.
4. Half streets shall be prohibited, except where essential to tile reasonable development of the subdivision in conformity with the other requirements of these regulations, and where the City Council finds it will be practicable to require the dedication of the other half when the adjoining land is subdivided, the other half of tile street shall be platted within such tract.

B. Street Class Requirements

1. Street layout shall provide for the continuation of existing collector streets in surrounding areas. Where adjoining land is not subdivided, these streets shall be projected in such manner as to assure adequate neighborhood circulation.
2. Local streets shall be so arranged as to discourage their use by through traffic originating outside the neighborhood.
3. The reservation in private ownership of strips of land at the end or alongside offered or existing streets and intended solely or primarily for the purpose of controlling access to property not included in the subdivision shall be prohibited.
4. At least some streets proposed shall be extended to the tract boundary to provide future connection with adjoining unplatted lands. In general, these extensions should be at such intervals as necessary to facilitate internal vehicular circulation with adjoining unplatted lands.
5. Where a subdivision abuts or contains an existing or proposed major street, frontage streets may be required to separate through and local traffic, or reverse frontage with screen planting contained in a non-access reservation along the rear property line, deep lots with rear service alleys, or equivalent treatment as may be necessary for adequate protection of residential properties.

C. General Provisions

1. Streets shall be designed in accordance with this Ordinance.
2. The minimum width of a street R.O.W. within the subdivision shall be sixty (60) feet; the minimum gradient shall be five-tenths (0.5) percent and the maximum gradient shall be ten (10) percent. Where an unimproved road abuts the subdivision, the Owner shall set back the subdivision line thirty (30) feet from the centerline of the unimproved County Road.
3. A cul-de-sac street shall be not longer than one thousand (1000) feet and shall be provided at the closed end with a turnaround having an outside roadway diameter of at least 100 hundred--(100) feet, and a street property line diameter of at least one hundred twenty (120) feet. A cul-de-sac street shall be limited to serve no more than twenty-four (24) low density residential lots.
4. All streets shall be designed, constructed, and paved in accordance with this Ordinance.

D. Street Grades

1. Except where grades exceeding the maximums and minimums below are recommended by the City Engineer the following street grades shall apply. Street grades shall not exceed the following:

<u>Street Type</u>	<u>Maximum Percent Grade</u>
Major	6
Collector	8
Local	12

E. Horizontal Alignment

Horizontal alignment of streets shall satisfy the following criteria:

1. Major street as determined in the City Comprehensive Plan or City Thoroughfare Plan or as otherwise recommended by the City Engineer with concurrence of the City Council.
2. When tangent center lines deflect from each other more than ten (10) degrees and less than fifty (50) degrees, they shall be connected by a curve with a minimum centerline radius of five hundred (500) feet for collector streets, or two hundred (200) feet for local streets.

3. Between reverse curves there shall be a tangent section of centerline not less than one hundred (100) feet long.
4. No street intersecting a major street shall vary from a ninety (90) degree angle of intersection by more than five (5) degrees. Intersections of collector or local streets shall not vary from ninety (90) degrees by more than fifteen (15) degrees.
5. Street jog with center line offsets of less than one hundred thirty-five (135) feet shall not be permitted.
6. Local streets intersecting a collector street or major street shall have a tangent section of centerline at least fifty (50) feet in length measured from the right-of-way line of the collector or major street; however, no such tangent is required when the minor street curve has a centerline radius greater than four hundred (400) feet with the center located on the collector street or major street right-of-way line.
7. At local street intersections, the property line corner shall be rounded by an arc having a radius of twelve (12) feet. This radius shall be increased when the smallest angle of intersection is less than eighty (80) degrees. At intersections of streets with major and collector streets, the property line corners shall be rounded by an arc having a radius of twenty-five (25) feet. Comparable cut-offs or chords in place of rounded corners may be permitted with approval of the Planning and Zoning Commission and City Council.

F. Minimum Pavement Widths and Right-of-Way for Streets

Classification	Pavement	Right-of-Way
Collector Streets	24	60
Local Commercial	24	60
Residential – over one acre lot size	22	60
Residential – one acre or less lot size	38	60

1. Collector streets are those designated as a collector or thoroughfare by the City’s Plan.
2. Streets may be required to be wider if adjacent to commercial or multifamily land-use where, in the opinion of the City’s Engineer, additional street width is indicated for proper access and circulation.

G. Subgrade Stabilization

The developer shall be required to furnish soil tests on the subgrade soils at 500 foot intervals, or more frequently if material changes are encountered. Such data shall include,

but is not necessarily limited to: Liquid Limit, Plasticity Index (P.I.), and Percent Passing No. 200 sieve. Tests shall be performed by an independent testing laboratory.

Classification of the subgrade for evaluating the supporting qualities shall generally apply to the top 6" layer of soil measured down from proposed subgrade surface. In all cases, the requirements set forth in this criteria are minimum and the City reserves the right to require further additional precautions or treatments consistent with sound engineering practice when necessary to provide for other conditions not specifically covered by this criteria.

If the subgrade soils have a P.I. of 16 or more, lime (or other approved material) series tests shall be required to determine the percent of lime application necessary to lower the P.I. of the subgrade soils below 16. All subgrades having subgrade soils with a P.I. greater than 16 shall be stabilized.

H. Standard Pavement Sections

1. The minimum standard pavement section to be used for residential streets in a subdivision containing lots of one acre or less shall be the following:

6" thick of reinforced Portland cement concrete on 6" thick Crushed Stone Base with a 6" depth Stabilized Subgrade.

2. The minimum standard pavement section to be used for all residential type streets in the City in a subdivision containing lots greater than one acre shall be the following:

2" thick Hot Mix Asphaltic concrete Paving on 6" thick (HMAC) Crushed Stone Base with a 6" depth Stabilized Subgrade.

Section 20: Alleys and Easements

A. Alleys

1. Alleys shall be provided in commercial and industrial districts and at the rear of multi-family residential building sites. In lieu of an alley an emergency access easement as provided below shall be dedicated to provide circulation and access for emergency, health, and fire and safety vehicles.
2. Alleys shall have right-of-way widths of not less than: sixteen (16) feet where residential building sites are provided on both sides and all alley-located utilities are installed before recordation of the final plat; twenty (20) feet where all alley utility installations are not completed prior to recordation of the final plat; twenty (20) feet wherever residential development abuts commercial or industrial areas; twenty-four (24) feet where commercial or industrial development abuts on both sides.

3. Alleys should intersect streets at right angles or radially to curved streets where sharp changes in alignment cannot be avoided; property line corners shall be cut off fifteen (15) feet on each side to permit safe vehicular movement. Dead-end alleys shall be prohibited except where prior development of land adjoining the subdivision permits no other reasonable design; under such circumstances, alleys shall be provided with turnaround or back-around facilities at the dead-end adequate to permit clear maneuvering of sanitation trucks and utility service equipment.

B. Easements Along Alleys

Where alleys are provided and where underground utility installations are determined by the City Council to be infeasible an aerial easement five (5) feet in width shall be furnished on each side of the alley. This easement may be provided by dedications and not delineated on the drawing of the final plat.

Section 21: Easements - Other Locations

Easements for utility services shall all be planned for underground installations except where the City Council expressly approves otherwise for reasons of public convenience or necessity. Easements for utility construction, service, and maintenance shall be provided in locations approved by the City and affected utilities according to the following standards:

1. Utility easements shall be a minimum of 15 feet in width. In addition to the utility easement a temporary construction easement of 15 feet in width shall be provided.
2. Emergency access easements shall have a clear unobstructed width of twenty-four (24) feet, shall connect at each end to a dedicated public street or shall have a suitable size turn-around at the dead-end, and appropriate turning space at inside corners to permit free movement of fire trucks. An emergency access easement may be used as a driveway to gain access to parking or loading spaces, but shall not be used for parking.

Section 22: Blocks

Block lengths and width shall be determined with due regard to:

- A. Provision of sites suitable to the class of use contemplated.
- B. Limitations and opportunities of topography.
- C. Pedestrian and vehicular circulation within the subdivision, control and safety of street traffic.
- D. Convenience of access to community facilities serving the neighborhood in which the subdivision is located.

Residential and industrial blocks shall be not longer than sixteen hundred (1600) feet and business blocks not longer than one thousand (1000) feet.

Section 23: Lots

Lot design and orientation shall be determined with due regard to the following standards:

- A. Lots within and without the City shall have adequate easements for stormwater drainage, water and sewer service.
- B. Lot sizes shall be consistent with zoning regulations.
- C. Except as may be authorized under other City regulations every lot within the City shall have a width of not less than eighty (80) feet at the building line in accordance the City Zoning Ordinance and shall abut on a public street. The buildable area of every corner lot shall be equal to or greater than the average buildable area of interior lots in the subdivision designated for the same class of use.
- D. Building Setbacks. For lots within the City front, side and rear setback lines shall be in accordance with the City Zoning Ordinance.

Section 24: Recreation and Public Lands

Providing adequate sites for recreation parks, open space and other community facilities is a public necessity in an urban area where lot sizes are less than two acres. The acquisition and improvement of these sites in step with private development of the area served by them is of mutual benefit to the subdivider and to the public. Therefore, the subdivider shall include in his design sites for such purposes. Park and public space shall be dedicated as a part of the final plat. The requirement for park land dedication is 1 acre minimum for the first 5 lots plus 0.1 acres of land for all lots over 5. All land dedicated for parks or open space shall be in the vicinity of the property being platted. If the subdivider of land within the City desires to do so, the requirement for parks and open space may, with the concurrence of the Council, be satisfied by a contribution to the City of funds adequate to purchase land to be used for parks, playgrounds or open space.

Section 25: Street Names and Signs

- A. Street Names

Names of new streets shall not duplicate or cause confusion with the names of existing streets, unless the new streets are a continuation of or in alignment with existing streets, in which case names of existing streets shall be used. All street names shall be approved by the Parker County 911 coordinator prior to plat approval by the City of Annetta South.

B. Street Signs

Street signs or the total cost thereof, shall be furnished to the City by the Subdivider for all intersections within or abutting the subdivision. Such signs shall be of a type approved by the City, and will be installed by the City.

Section 26: Water Facilities

A. General

All water supply, distribution, pumping, and storage improvements shall be designed in accordance with this Ordinance the standards of the American Water Works Association, the standards of the City of Fort Worth Water Department, and the North Texas Council of Government Standards.

B. Basic Requirements

1. All water mains shall be a minimum of eight inches (8") in size and looped where possible.
2. The City of Annetta South may participate in the cost of any oversize lines required to serve land areas and improvements beyond the subdivision and the terms of such participation will be determined by the City Council. The City's participation is contingent on compliance with applicable competitive bidding statutes.
3. The cost of mains larger than eight inches (8") must be borne by the developer if such larger main is required to adequately serve the subdivision or is required by the City's Comprehensive Plan.
4. Standard fire hydrants shall be installed as part of the water distribution system and so located so that all structures are within 300 feet of a hydrant for residential and 300 feet for commercial.
5. Valves of approved design shall be installed at the intersections of all water mains so as to provide for proper maintenance and operation of the system and to provide a means of shutting off the supply to portions of the system for repairs. Sufficient valves shall be installed to minimize interruption of service.
6. The depth of cover shall be a minimum of 36 inches below finished grade.
7. Corporation stops and meter boxes shall be provided at all services.
8. Adequate Air Relief, draining, and flushing valves must be provided for flushing, disinfection, daily operation requirements, and repairs.

9. A backflow prevention assembly shall be installed on all water services.

Section 27: Sanitary Sewerage Facilities

A. General

All subdivisions developed subsequent to this Ordinance must be served by sanitary sewerage collection, treatment, and disposal systems approved by the City Engineer, the entity in possession of the CCN and the Texas Council on Environmental Quality.

B. Design Criteria

The improvements shall be designed in accordance with criteria specified in this Ordinance, and in accordance with the “North Central Texas Council of Governments – Public Works Construction Standards North Central Texas, Fifth Edition (2017); and City of Fort Worth Water Department, Installation Policy and Design Criteria for Water, Wastewater, and Reclaimed Water Infrastructure, May 2019”.

C. Basic Requirements

1. No sewer main shall be less than eight (8) inches in nominal diameter.
2. All sewers shall be designed with consideration for serving the full drainage area subject to collection by the sewer in question.
3. Manholes shall be located at all intersections of other sewers and at intermediate spacings along the line. Generally, the maximum spacing should not exceed 500 feet. Manholes should be located at all changes in grade at the ends of all sewers that will be extended.
4. Sewers should be designed with straight alignment whenever possible. When horizontal curvatures must be used, the smallest radius should be determined by the pipe manufacturer’s data, but in no case less than one hundred (100) foot radius shall be used.
5. All sewers shall be designed with hydraulic slopes sufficient to give mean velocities, when flowing full or half full, of not less than two (2’) feet per second on Kutter’s or Manning’s formulas using an “n” value of 0.013.
6. No connection shall be made to any sanitary sewerage system within the City which will permit the entrance of ground water, surface water, or waste of other than domestic sewage characteristics.
7. All materials and workmanship incorporated in the sewage system extensions shall be in accordance with this Ordinance.

8. All lateral and sewer mains installed within a subdivision must extend to the borders of the subdivision as required for future extensions of the collecting system regardless of whether or not such extensions are required for service within the subdivision.

Section 28: Storm Drainage Facilities

A. General

Drainage facilities shall be provided and designed in accordance with this Ordinance which includes Section 28: Storm Drainage Facilities; EXHIBIT A: Storm Drainage EXHIBIT E: the City of Ft. Worth iSWM (integrated storm water management) Stormwater Criteria Manual dated September 29, 2015; EXHIBIT F: the City of Ft. Worth iSWM Technical Manual Construction Controls section dated September 2014; EXHIBIT G: City of Ft. Worth iSWM Technical Manual Hydraulics section dated September 2014, EXHIBIT H: City of Ft. Worth iSWM Technical Manual Hydrology section dated September 2014, EXHIBIT I: City of Ft. Worth iSWM Technical Manual Landscape section dated September 2014, EXHIBIT J: City of Ft. Worth iSWM Technical Planning section dated September 2014, EXHIBIT K: City of Ft. Worth Technical Manual Site Development Controls section dated September 2014; EXHIBIT L: City of Ft. Worth Water Quality section dated September 2014; EXHIBIT M: City of Ft. Worth: iSWM Technical Manual iSWM Construction Control Standards Details dated 2018.

B. Design of Facilities

1. Where a subdivision is traversed by a water course, drainage way, natural channel or stream, there shall be provided an easement or right-of-way conforming substantially to the limit of the 100-year flood level, plus additional width to accommodate future needs.

In the new subdivisions the developer shall provide all the necessary easement and right-of-way required for drainage structures, including storm sewers and open channels. Stormwater easement width for storm sewer pipe shall be not less than 20 feet, and easement width for open channels shall be at least 20 feet wider than the top of the channel, 15 feet of which shall be on one side to serve as access way for maintenance purposes.

2. Bridges are to be constructed at all street crossings over the major streams in the City and shall have the proper dimensions to fit the existing channel sections.
3. Curb height on all streets are to be not more than seven (7) inches and at least equal to the depth of water at design flow.

4. Maximum depth of water to be allowed in residential streets at 5-year design flow is one-inch above top of crown, but not more than seven (7) inches at the gutter line.
5. Maximum spread of water in collector streets at 5-year design flow shall allow for one clear lane of traffic open.
6. If concrete valley gutters shall be provided where the gutter flow must be carried across intersections of curbed streets. Minimum width of valley gutters shall be eight (8) feet.
7. The combined capacity of storm drain pipe, street and surface drainage shall contain the 100-year design flow within the street right-of-way.
8. The finish floor elevation of all structures shall be at least one foot (1') above the 100-year flood elevation.

Section 29: Waivers of General Requirements

- A. Waiver of the general requirements outlined in this Ordinance may be made by the City Council when, in its judgment, special or peculiar factors and conditions warrant such variations and do not affect the general application, the spirit of the rules and regulations or the other plans for the City. The City Council shall be the judge in all cases regarding the application of the foregoing rules and regulations.
- B. An applicant who desires a waiver from any specific term or regulation of this ordinance shall file a written request with the City Secretary. The written request shall:
 1. State the specific provision of this Ordinance for which a waiver is sought;
 2. If applicable, state any excessive conditions that the applicant believes are being improperly or unfairly imposed on the development that do not bear a rough proportionality to the requirements necessary to serve the development;
 3. State the nature of the waiver request and include a justification for the waiver;
 4. Present documentation necessary to show that the granting of the waiver will not result in any danger to the public health, safety, and welfare of the City and the property immediately surrounding the site for which the waiver is sought; and
 5. Show that the City will not incur any unnecessary and inappropriate expense from the granting of the waiver.

- C. The City Council shall review all waiver requests in conjunction with consideration of the Final Plat. Any waiver request to a required document of a completed application must be presented to the City Council prior to a submission in accordance with Subdivision Process Calendar.

Section 30: Authority

The City, pursuant to Section 212.0115(f), Texas Local Government Code, delegated to the City secretary the authority to certify in writing to an owner of land or to a utility provider whether a plat is required and whether such a plat has been approved. Such shall be appealable to the City Council.

Section 31: (Reserved)

Reserved.

Section 32: Fees

All subdivision related fees shall be listed within the City's Fee Ordinance.

Section 33: Proportionality Determination

- (a) Prior to a decision by the Planning and Zoning Commission on a final plat application, or any other application for which an exaction requirement is approved as a condition of approval, the City Engineer shall prepare a written statement affirming that each exaction requirement to be imposed as a condition of plat approval or permit approval is roughly proportionate to the demand created by the subdivision or development on the applicable public facilities system of the City, taking into consideration the nature and extent of the development proposed. In making this determination, the City Engineer may consider:
 - (1) categorical findings of the North Central Texas Council of Governments in developing standard specifications for public infrastructure improvements;
 - (2) the proposed and potential use of the land;
 - (3) the timing and sequence of development in relation to availability of adequate levels of public facilities systems;
 - (4) impact fee studies, traffic impact studies, drainage studies or other studies that measure the demand for services created by developments and the impact on the City's public facilities system;
 - (5) the function of the public infrastructure improvements in serving the proposed subdivision or development;

- (6) the degree to which public infrastructure improvements necessary to serve the proposed subdivision are supplied by other developments;
 - (7) the anticipated participation by the City in the costs of necessary public infrastructure improvements;
 - (8) the degree to which acceptable private infrastructure improvements to be constructed and maintained by the applicant will offset the need for public infrastructure improvements;
 - (9) any reimbursements for the costs of public infrastructure improvements for which the proposed subdivision is eligible; and/or
 - (10) any other information relating to the impacts created by the proposed subdivision or development on the City's public facilities systems.
- (b) Based upon the proportionality determination, the City Engineer shall affirm that the exaction requirements of the Subdivision Ordinance, or other ordinance requiring the permit, as applied to the proposed subdivision or development, do not impose costs on the applicant for public infrastructure improvements that exceed those roughly proportionate to the impact of the proposed subdivision or development.
 - (c) The City Engineer may require that the applicant, at its expense, submit any information or studies that may assist in making the proportionality determination.

Section 34: Definitions

For purposes of this ordinance, the following terms have the following definitions:

EXACTION REQUIREMENT: a requirement imposed as a condition for approval of a plat, building permit, planned development district or other development permit application to:

- (1) dedicate an interest in land for a public infrastructure improvement;
- (2) construct a public infrastructure improvement; or
- (3) pay a fee in lieu of constructing a public infrastructure improvement.

FILED: The date a plat application is deemed filed according to the Subdivision Process Calendar. Such a date will be the date filed subject to Chapter 212 of the Texas

PUBLIC INFRASTRUCTURE IMPROVEMENT: a water, wastewater, roadway, drainage or park facility that is a part of one or more of the City's public facilities systems.

PUBLIC FACILITIES SYSTEM: with respect to water, wastewater, roadway, drainage or parks, the facilities owned or operated by or on behalf of the City to provide services to the public, including existing and new developments and subdivisions.

SUBDIVISION PROCESS CALENDAR: The City Council approved calendar proscribing the process for plat review and approval.

Section 35: Rough Proportionality Determination

- (a) The Planning and Zoning Commission and City Council shall consider the City Engineer's report concerning the proportionality of the exaction requirements in making a decision on a plat application. The Commission and the City Council may consider the City Engineer's report in granting a variance to the requirements of the Subdivision Ordinance.
- (b) The City official responsible for issuing a permit for which an exaction requirement is imposed as a condition of approval shall consider the City Engineer's report concerning the proportionality of the exaction requirements in making its decision as to whether to grant the permit.

Section 36: Rough Proportionality Appeal

- (a) An applicant for a final plat or for a permit which imposes an exaction requirement as a condition of approval may file an appeal to contest any exaction requirement, other than impact fees, imposed as a condition of approval or in which the failure to comply is grounds for denying the plat application pursuant to the Subdivision Ordinance.
- (b) The purpose of a proportionality appeal is to assure that an exaction requirement imposed on a proposed plat or development as a condition of approval does not result in a disproportionate cost burden on the applicant, taking into consideration the nature and extent of the demands created by the proposed subdivision or development on the City's public facilities systems.

Section 37: Appeals Procedure

- (a) An applicant for a final plat or an applicant seeking approval for any other permit or zoning for which an exaction requirement is imposed shall file a written appeal with the City Secretary within 10 days of the date the Planning and Zoning Commission or the City official responsible for issuing the permit takes action applying the exaction requirement. This may include denial of the permit or plat. The applicant shall submit 15 copies of the appeal.
- (b) A separate appeal form shall be submitted for each exaction requirement for which relief is sought. The City Secretary shall forward the appeal to the City Council for consideration.

- (c) The applicant may request postponement of consideration of the applicant's plat application by the City Council pending preparation of the study required by subsection (f), in which case the applicant shall also waive the statutory period for acting upon a plat for the time necessary for the City Council to decide the appeal.
- (d) No developer's agreement may be executed by the City until the time for appeal has expired or, if an appeal is filed, until the City Council has made a determination with respect to the appeal.
- (e) The appeal shall state the reasons that application of the exaction requirement is not roughly proportional to the nature and extent of the impact created by the proposed subdivision or development on the City's public facilities systems and does not reasonably benefit the proposed subdivision or development.
- (f) The appellant shall submit to the City Engineer 15 copies of a study in support of the appeal that includes, with respect to each specific exaction requirement appealed, the following information within 30 days of the date of appeal, unless a longer time is requested:
 - (1) total capacity of the City's water, wastewater, roadway, drainage, or park system, as applicable, to be utilized by the proposed subdivision or development, employing standard measures of capacity and equivalency tables relating the type of development proposed to the quantity of system capacity to be consumed by the subdivision. If the proposed subdivision is to be developed in phases, such information also shall be provided for the entire development, including any phases already developed;
 - (2) total capacity to be supplied to the City's public facilities systems for water, wastewater, roadway, drainage or parks, as applicable, by the exaction requirement. This information shall include any capacity supplied by prior exaction requirements imposed on the development;
 - (3) comparison of the capacity of the applicable City public facilities systems to be consumed by the proposed subdivision or development with the capacity to be supplied to such systems by the proposed exaction requirement. In making this comparison, the impacts on the City's public facilities systems from the entire subdivision or development shall be considered;
 - (4) the amount of any City participation in the costs of oversizing the public infrastructure improvements to be constructed by the applicant in accordance with the City's requirements;
 - (5) comparison of the minimum size and capacity required by City standards for the applicable public facilities systems to be utilized by the proposed

subdivision or development with the size and capacity to be supplied by the proposed exaction requirement; and

- (6) any other information that shows the alleged disproportionality between the impacts created by the proposed development and the exaction requirement imposed by the City.
- (g) The City Engineer shall evaluate the appeal and supporting study and shall make a recommendation to the City Council based upon the City Engineer's analysis of the information contained in the study and utilizing the same factors considered by the Engineer in making the original proportionality determination.

Section 38: City Council Decision

- (a) The City Council shall decide the appeal within 30 days of the date of final submission of any evidence by the applicant. Upon receipt of the final submission of evidence from the applicant, the City Secretary shall schedule a time and date for the City Council to consider the appeal and shall cause the applicant to be notified at the address specified in the appeal form of the time, date and location at which the City Council shall consider the appeal.
- (b) The applicant shall be allotted time, not to exceed 30 minutes, to present testimony at the City Council meeting. The Council shall base its decision on the criteria listed in Sections 2(a) and 6(f) and may:
 - (1) deny the appeal and impose the exaction requirement in accordance with the City Engineer's recommendation or the Planning and Zoning Commission's decision on the plat or other development application; or
 - (2) grant the appeal, and waive in whole or in part an exaction requirement to the extent necessary to achieve proportionality; or
 - (3) grant the appeal, and direct that the City participate in the costs of acquiring land for or constructing the public infrastructure improvement.
- (c) In deciding an appeal, the City Council shall determine whether application of the exaction requirement is roughly proportional to the nature and extent of the impact created by the proposed subdivision on the City's public facilities systems for water, wastewater, roadway, drainage, or park facilities, as applicable, and reasonably benefits the subdivision. In making such determination, the Council shall consider:
 - (1) the evidence submitted by the applicant;
 - (2) the City Engineer's report and recommendation, considering in particular the factors identified in Sections 2(a) and 6(f); and

- (3) if the property is located within the City's extraterritorial jurisdiction, any recommendations from the county.
- (d) The City Council may require the applicant or the City Engineer to submit additional information that it deems relevant in making its decision.

Section 39: Action Following Decision of City Council

- (a) If the City Council finds in favor of the applicant and waives the exaction requirement as a condition of plat approval, or modifies the exaction requirement to the extent necessary to achieve rough proportionality, the applicant shall resubmit the plat application to the Planning and Zoning Commission or City official responsible for issuing the permit within 30 days of the date the City Council takes action, with any modifications necessary to conform the plat with the City Council's decision. The applicant shall not be deemed to have prevailed in the event that the City Council modifies the exaction requirement.
- (b) If the City Council finds in favor of an applicant for any other permit and waives the exaction requirement as a condition of permit approval, or modifies the exaction requirement to the extent necessary to achieve rough proportionality, the applicant shall resubmit the permit application to the responsible official within 30 days of the date the City Council takes action, with any modifications necessary to conform the application with the City Council's decision. Failure to do so will result in the expiration of any relief granted by the City Council.
- (c) If the City Council denies the appeal and the applicant has executed a waiver of the statutory period for acting upon a plat, the City shall place the plat application on the agenda of the Planning and Zoning Commission within 30 days of the City Council's decision.
- (d) If the rough proportionality appeal was submitted appealing the imposition of an exaction requirement for a plat application, and City Council grants relief to an applicant but the applicant fails to conform the plat to the City Council's decision within the 30 day period provided, the relief granted by the City Council on the appeal shall expire.
- (e) If the plat application is modified to increase the number of residential dwelling units or the intensity of non-residential uses, the Mayor or City Engineer may require a new study to validate the relief granted by the City Council.
- (f) If the plat application for which relief was granted is denied on other grounds, a new appeal shall be required on any subsequent application.

Section 40: Appeal of City Council Decision

An applicant may appeal the decision of the City Council to the county or district court of the county in which the development is located within 30 days of the date that the Council issues its final decision. In the event that the applicant prevails in such action, the applicant will be entitled to attorneys' fees and costs, including expert witness fees.

Section 41: Penalty

Any person, firm or corporation violating any provision of this ordinance shall be deemed guilty of a misdemeanor and upon final conviction thereof fined in an amount not to exceed Five hundred Dollars (\$500.00) unless it is a violation of health, safety or zoning in which case such fine shall not exceed Two Thousand Dollars (\$2,000.00). Each day any such violation shall be allowed to continue shall constitute a separate violation and punishable hereunder. The City shall also have the authority to enforce this ordinance by civil action pursuant to Subchapter B of Chapter 54, Texas Local Government Code, including but not limited to injunctive relief and, after notice pursuant to Section 54.017, Texas Local Government Code, civil penalties.

**EXHIBIT A
STORM DRAINAGE**

A. METHOD OF CALCULATION RUN-OFF

Storm water run-off for drainage basins up to 750 acres in size shall be computed by the rational method which is an analysis of the run-off problem for each drainage area along rational lines and includes the analysis of the flow of storm water from the surface on which it falls to the inlet that leads to the storm sewer and then through the storm sewer, culvert and/or channel to the point of disposal. The formula for calculation of run-off by the rational method is $Q = CIA$. For drainage basins larger than 750 acres in size, the synthetic unit hydrograph or other approved method shall be used.

Q = the maximum of run-off discharge expressed as cubic feet per second.

C = a run-off coefficient which varies with the topography, land use and moisture content of the soil at the time the run-off coefficient shall be based on the ultimate use of the land and shall be selected from Table I below:

Business areas	0.80
Industrial areas	0.75
Urban Residential less than 1 ac	0.65
Residential areas (1 to 3 ac)	0.55
Large Residential (3+ acres)	0.40
Park areas	0.30

I = rainfall intensity in inches per hour from the applicable curves of a current intensity information for Parker County provided by the National Weather Bureau. Time of concentration or duration of rainfall for use in Figure 1 shall be calculated by data shown from U.S. weather bureau Table 42 and current amendments.

A = the drainage area, in acres, tributary to the point under design calculated from the drainage map of the area. This drainage map shall be submitted with drainage plans and calculations submitted for consideration by the City Engineer.

TABLE II

Description of Water Course	Velocity of Run-off in F.P.S. For Slope in Percent			
	0% to 3% V. in f.p.s	4% to 7% V. in f.p.s.	8% to 11% V. in f.p.s.	Over 12% V. in f.p.s.
Surface Drainage	5	10	15	18
Channels	Determine V by Mannings Formula			
Storm Sewers	Determine V by Mannings Formula			

Average velocity of the run-off for calculating time of concentration or duration of rainfall for use in Figure 1. These average velocities in this table shall be used unless the designer shows calculation of velocities by streets using the gutter velocities as follows:

<u>% Slope of Gutter</u>	<u>Assumed Velocity – Ft./Sec.</u>
0.4%	1.4
1.0%	2.2
2.0%	3.1
3.0%	3.8
4.0%	4.3
5.0%	4.9
6.0%	5.3
8.0%	6.1
10.0%	6.9

Using the average velocities from this table, the designer shall calculate the line of concentration by the following formula unless more data is shown on the plans for calculating time of concentration:

$$T = \text{“Inlet Time”} + \frac{D}{V \times 60} \text{ where:}$$

T = Time of concentration in minutes for use in Figure 1.

D = Distance in feet from point of concentration to upper end of drainage area under consideration.

V = Velocity in feet per second from this table of velocity calculated by designer by streets and/or storm sewers.

“Inlet Time” = Five (5) minutes for property zoned for urban residential (less than 1 ac), multiple family, local business central business, commercial or industrial.

“Inlet Time” = Ten (10) minutes for property zoned for parks, schools, single family residential and duplex.

B. Design of Facilities

1. Streets and underground storm drains shall be designed to accommodate a ten (10) year frequency storm with adequate overland relief for the one hundred (100) year storm. Design of all bridges, culverts, underpasses and open channels are to be based on the 100 year frequency with a one (1') foot freeboard. All public storm water shall be contained within a dedicated public Right-of-Way or Drainage Easement.
2. Curb height on all streets are to be not more than six inches (6") and not less than four (4)".
3. Maximum depth of water to be allowed in residential streets at design flow is two inches (2") above top of crown, but not more than eight inches (7") at the gutter line.
4. Maximum spread of water in collector streets at design flow shall allow for two (2) clear lane of traffic open.
5. Water in excess of that permissible in streets with allowable depth or spread of water shall be carried in storm sewers. Capacity of storm sewers shall be calculated by Manning's Formula.
6. The developer shall be required to install at his own expense all storm sewers and drainage structures.
7. Where storm sewers are designed an overland swale shall be provided to accommodate the excess run-off to be expected during the 100 year storm unless the storm sewer is enlarged to a 100 year frequency design.
8. Sufficient and adequate catch basins are to be installed to allow entry of required quantity of water into storm sewers. Catch basin inlet openings shall be seven inches (7") high.
9. Street grades shall be such that excessive sand deposition from too low a water velocity or pavement scouring from too high a velocity is to be avoided as far as practical. Street grades are normally to be not less than five (5') nor more than seventy feet (70') fall per thousand linear feet.
10. In new subdivisions, the developer shall provide all the necessary easement and right-of-way required for drainage structures, including storm sewers and open channels. Easement width for storm sewer pipe shall not be less than fifteen feet (15'), and easement width for open channels shall be at least twenty feet (20') wider than the top of the channel, fifteen feet (15') of which shall be one (1) side to serve as access way for maintenance purposes.
11. Bridges are to be constructed at all street crossings over the major streams in the City and shall have the proper dimensions to fit the proposed channel sections.

12. Developers will be responsible throughout their development activities for obtaining compliance with the provisions of Texas Water Code, Sec. 11.086, and this shall include having appropriate drainage studies and plans prepared and sealed pursuant to the PROFESSIONAL ENGINEERS DISCIPLINARY RULES DR 1.1, 2.2 and 3.1 and ETHICAL CONSIDERATIONS EC 6.3 and 6.4. Water concentrated in streets, pipes, drains, culverts and channels will be moved to a recognized water course without damage to intervening structures or undue spreading across intervening land.

A “recognized water course” shall herein be defined as either an open channel with hydraulic characteristics which provide capacity for at least a ten (10) year frequency storm after ultimate development of its watershed, or an underground storm drain with capacity for at least a ten (10) year frequency storm plus overland relief sufficient to safely discharge up to a combined ten (10) year frequency flow (based on ultimate watershed development) without damage to adjacent property. Such ten (10) year capacity shall extend downstream from the point of discharge or the developer’s property line whichever is greater, a distance of at least one hundred feet (100’). The developer is responsible for constructing all off-site channelization or underground storm drain with overland relief, required to discharge concentrated storm water from the low end of his development to the recognized watercourse. The developer will also obtain all necessary easements from intervening land owners and will be required to show that connecting off-site drainageways are capable of handling any increase in run-off due to development, concentration or diversion for at least the ten (10) year storm frequency.

13. Developers of property downstream on a drainage basin which is undeveloped, or only partially developed, will insure that drainage facilities through their development are adequately sized to handle run-off from higher lands when the higher are fully developed. Run-off coefficients assumed for higher undeveloped property will take due note of current zoning and the most probable use of the property and these assumptions will be clearly spelled out in development plans.

**EXHIBIT B
DESIGN CRITERIA FOR WATER PROJECTS**

GENERAL

The following is approved as the usual Standard Design Criteria for all improvements for the Annetta South Water System or privately operated water systems in the City of Annetta South and its ETJ. Privately operated water systems shall comply with the Rules and Regulations for Public Water Systems as published by the Texas Department of Health.

1. Average Day Water Use: 215 GPCD
2. Maximum Day: For “maximum day” unrestricted, multiply the annual average day by 2.25.
3. Maximum Hour: For “maximum hour” unrestricted use, multiply the maximum day by 2.00.
4. Personal Per Residential Connections: 3.5
5. Maximum rate of loss due to friction in a transmission main should not exceed 5-7 feet/thousand feet.
6. Water mains should be sized to meet max. hr. or (max. day + fire flow).
7. Fire flow should be designed at 500 GPM in residential areas.
8. Computations:

$$\text{Max. Day/Connection} = \frac{(2.25)(215)(3.5)}{1,000,000} = 0.00169 \text{ MGD}$$

$$\text{Max. Hr./Connection} = (2.00)(0.00169) = 0.00338 \text{ MGD}$$

TABLE I

TABULATION OF MAIN SIZE REQUIREMENTS FOR RESIDENTIAL DEVELOPMENTS OF VARYING SIZES

<u>Number Residences</u>	<u>Number People</u>	<u>Max. Hr. MGD</u>	<u>Max. Day & F.F. (MGD)</u>	<u>Pipe Size & Loss per</u>
100	350	0.34	1.61	10" @
300	1050	1.01	1.98	12" @
500	1750	1.69	2.29	16" @
700	2450	2.37	2.62	16" @
1000	3500	3.38	3.13	16" @
1500	5250	5.07	3.97	16" @
2000	7000	6.76	4.82	24" @
3000	10,500	10.14	6.51	24" @
4000	14,000	13.52	8.20	24" @

9. Supply Storage vs. Pumping:

The maximum hour demand should be supplied with not less than sixty percent (60%) from pumping capacity and not more than forty percent (40%) from available elevated or pressurized ground storage.

10. Elevated Storage Depletion:

Elevated storage should be maintained not less than thirty three percent (33%) full during the maximum hour demand period.

11. Pipe Class:

Either C900 Polyvinyl Chloride (PVC) which will withstand a minimum pressure of one hundred fifty (150) psi or ductile steel pipe meeting similar criteria.

12. Quick Closing Valves:

Quick closing valves will not be permitted in any water facility connected to the City of Annetta South and its ETJ or private systems operating within the city.

Minimum Working Pressure

In residential areas, the working pressure in mains shall not be less than forty (40) psi, except in isolated high areas where the pressure shall not be less than (30) psi.

Looping Mains

All feeder mains shall be looped and all laterals in excess of one thousand feet (1,000') in length shall be looped. Nothing less than six inch (6") mains shall be used for looping purposes, except that four inch (4") mains may be used to loop dead ends to provide circulation. Dead-end mains shall be avoided if at all possible.

Each water main shall be valved in such a manner as to enable initial sterilization and testing after construction and to enable repairs to pipe with a minimum interruption to customer service.

Minimum Size Water Lines

1. Design Criteria: The following design criteria shall be considered to be a minimum basis for sizing water lines in various locations within the City of Annetta South and its extraterritorial jurisdiction (ETJ).

a. The minimum residential water service line shall be three-fourths inch (3/4"). The normal location of water service lines shall be in the parkway in front of the property and five feet (5') east or north of the center of the property frontage.

b. The normal location of water mains shall be in the north or east one-quarter of the street, as appropriate.

c. Four inch (4") mains may be installed in cul-de-sacs to serve not more than six (6) residential customers, provided that no fire hydrants are required in the cul-de-sac.

d. If a fire hydrant is required in the cul-de-sac, the minimum line size shall be six inches (6"). Streets longer than three hundred fifty feet (350') which end in cul-de-sacs must have a fire hydrant in the cul-de-sac. Cul-de-sacs three hundred feet (300') or less from the center of the connecting street must be served by a fire hydrant located at the connecting street intersection.

e. If a water main extends for an unsupported length of one thousand feet (1,000'), the minimum size shall be 8 inches, except where street layout is composed of essentially parallel streets consistently longer than one thousand feet (1,000') between looping connections, but not more than one thousand five hundred feet (1,500') between such connections. In these parallel street systems, lines six inches (6") in nominal diameter may be alternated with eight inch (8") lines to provide an alternating pattern of 6"-8"-6"-8", etc.

f. For water mains less than one thousand feet (1,000') long between looping connections, six inch (6") pipe may be used, except in cases when fire coverage requires installation of more than one fire hydrant between looping connections.

g. Provisions shall be provided for flushing dead-end mains, such as through a fire hydrant placed near the terminal end of the line.

h. If two fire hydrants are required between looping connections, the minimum main size shall be eight inches (8").

- i. The minimum size main in commercial or industrial developments shall be eight inches (8”).
2. Double Mains: To prevent cutting of pavement, a system of double mains may be used, but the carrying capacity of the two mains shall not be less than the carrying capacity of a single main designed to serve the area. In areas where development requires service connection to mains in major thoroughfares, double mains shall be used, with one behind either outside curb.

3. Sizing Water Systems:

- a. For large industrial sites or areas, water mains will be sized to meet projected demand for both industrial requirements and fire coverage.
- b. Peak demand for apartments shall be determined on the basis of not less than required under the following formula published in the June, 1967, AWWA Journal.

$$Q = U + 15\sqrt{U}$$

Where: U set equal to the number of family units, results in Q equal to gallons per minute (GPM).

- c. For large residential and commercial developments, the water main design shall be based on the total ultimate development as projected from the proposed development platting and/or street layout. Further, for large residential areas, the normal water service maximum hour demand to be used for feeder main design shall be considered to be not less than 2.0 GPM per lot.
 - d. For smaller such areas, the normal water service maximum hour demand will be greater, so that in the sizing of individual service mains, the demand shall be taken as not less than 5.0 GPM per service.
 - e. In addition to normal maximum hour water service requirements, full consideration shall be given to fire flow requirements as superimposed on maximum day demand conditions, elevation, and the type of development proposed, in arriving at the final water main capacity design demands to be used in pipe sizing.
4. Fire Hydrants: Fire hydrants shall be spaced so that every insurable risk shall be not more than five hundred feet (500’) air-line distance from the fire hydrant, and not more than eight hundred feet (800’) hose-line route distance from a fire hydrant. Hose-line route shall be considered as following public streets and/or dedicated fire lanes.

- a. Fire hydrants located along major thoroughfares or streets subject to high traffic density shall incorporate a gate valve in the lead, even though the attaching lateral main may be less than twelve inches (12") in diameter.
 - b. Locations for fire hydrants shall be selected where possible to provide the shortest possible lead under street pavement.
 - c. Under specific conditions where fire hydrant placement requires the hydrant be set further into a parkway than standard dimensional requirements, such distance shall not exceed nine (9') perpendicular distance from adjacent hard surface, to allow for fire department pumper hose attachment.
 - d. All fire provisions must be approved by Annetta South Fire Department.
 - e. The ground line on fire hydrants in a standard installation shall be set even with the elevation of the top of adjacent existing or proposed curb (elevation specified). When parkways are to be developed with a rolling or irregular slope, the ground line index on the fire hydrant shall be set to the proposed ground elevation (specified) at the point of installation.
5. Pressure Regulators: In low areas where pressures may exceed one hundred (100) psi, builders and plumbers will be advised that in such locations, pressure reducing devices will be installed as part of plumbing.
 6. Air and Vacuum Relief: Air and vacuum relief valves shall be installed in high points along feeder mains, transmission mains or major mains to exhaust trapped air or relieve vacuum from the system.
 7. Blow Offs: In low points along transmission mains, blow off vaults may be required in the system to drain the mains.
 8. Clean Out Wyes: In strategic locations along lateral lines, feeder mains, transmission mains, etc., cleaning wyes shall be provided for passing "Polly Pigs" through to sweep trash and debris from the pipe. These shall be supplemented with chlorination and sampling points, as required for the proper sterilization of the main. Locations for these wyes will be determined through conference with the City Engineer.

EXHIBIT C
DESIGN CRITERIA FOR SEWER PROJECTS

GENERAL

The following are minimum standard design criteria that must be met for all sanitary improvements in the City of Annetta South and in its extraterritorial jurisdiction.

PRIVATE SEWAGE FACILITIES

On-site wastewater systems are to be aerobic type system designed in accordance with the “Construction Standards for Private Sewage Facilities” as published by the Texas Department of Environmental Health and Texas Commission on Environmental Quality (TCEQ). The minimum lot size shall be twenty two thousand (22,000) square feet.

Treatment plant systems shall be designed in accordance with the “Design Criteria for Sewerage Systems” as published by the Texas Department of Health.

SANITARY SEWER MAINS AND/OR SUB-MAINS

1. Basic Preliminary Information

- a. Determine the area within the natural drainage limits to be served by the proposed mains from information assembled from:
 - (1) Contour maps;
 - (2) Field surveys;
 - (3) Highway drainage information; or
 - (4) Other suitable sources.
- b. Estimate the population load to be served by the main less than the population obtained by multiplying the gross area in areas obtained under (1) above, by 3.0 houses per acre times 3.5 people per house. However, this minimum computation shall not be employed in the face of sound information relating to the particular area in question indicating a higher population than the minimum.
- c. Prepare a preliminary map of the area to be served by the main, both present and future, on which shall be shown:
 - (1) Limits of the drainage area concerned;
 - (2) All recorded subdivisions;
 - (3) All known proposed subdivisions;
 - (4) Location of all water courses;
 - (5) Tentative location of proposed main, showing probable point of connection to existing sanitary sewer (a check should be made at this time to establish whether

or not “per connection charges” are applicable for connection to the existing sanitary sewer);

- (6) All state, county and city roads and streets dedicated for public use; and
- (7) Property lines of all tracts in vicinity of main location with present owners shown.

2. Preliminary Design Procedure

- a. Make a preliminary survey of the tentative main location, along with such alternate locations as this field survey might indicate as desirable, this survey to include:
 - (1) Plan survey showing relation between property corners and proposed sewer main center line; this information to be in sufficient detail to properly locate the proposed main on the preliminary map and determine the number of properties involved for securing the necessary right-of-way; and
 - (2) Profile survey showing:
 - (a) Field determined elevation of any existing manhole invert, stub or sewer main to which the proposed sewer line is to connect;
 - (b) Elevation of ground at center line of proposed main at each station, half station and/or ground break;
 - (c) Elevation of ground one hundred feet (100') left and right of center line at each station;
 - (d) Elevation of any draw, creek, depression, pond, lake or watercourse within three hundred feet (300') of any portion of the center line at intervals not to exceed one hundred feet (100'), with proper reference made as to location with respect to center line; and
 - (e) Elevation of stub out of each existing house or building to be served directly by the main if available. In case stub is not available, ground elevations should be shown at the front and back of the house. In any event, care should be taken to properly locate the existing house and points of elevation taken with relation to center line.
- b. Prepare preliminary plan and profile drawings for the mains showing the information obtained from the preliminary survey:
 - (1) Station 0+00 of the proposed main shall be equated to the interceptor main station at the point of connection;
 - (2) The plot of the main on the profile sheet shall be from left to right, beginning at 0+00 (lowest flow line elevation) progressing right in increasing stations to the highest flow line elevation.
- c. Analyze the data obtained in the foregoing steps. Determine the points where each increment of load will be added to the proposed main and prepare a tabulation showing

the estimated magnitude of the population load under ultimate conditions at each of those points, showing both the incremental and cumulative load.

- d. Adjust preliminary grade on the profile, keeping mind that this grade should be sufficiently deep to accept not only the normal direct connections, but in general, the top of the proposed main should be not less than:
 - (1) Two feet (2') below the bottom of the drainage course being paralleled;
 - (2) Far enough below the bottom of such drainage course to permit a four inch (4") service line to pass under the drainage course with one foot (1') of cover, approach the proposed main on at least a 1.00% grade, and match tops with the proposed main at the point of connecting; or
 - (3) Five feet (5') below the finished grade of the street in which it is to be located, whichever condition results in the greatest depth.
- e. Determine the limiting or flattest gradient between each point of load increment.
- f. Recheck all the steps in the Preliminary Design Procedure to be sure that the location and grade selected for the proposed main as the end result of this procedure are the best possible combinations obtainable under the governing circumstances.

DESIGN PRACTICE

1. Basic Design Requirements

The following basic design practices are considered as standard requirements by the City of Annetta South. Under isolated conditions, warranted only by special situations, the City Engineer may recommend and/or approve variations to some of these standards.

- a. The normal location of the sewer line shall be in the south or west one-quarter (1/4) of the street, as appropriate.
- b. Sewer services shall be omitted from any sanitary sewer line for lots adjacent thereto which are approved for installation in parkways or in utility easements.
- c. Sewer Services:
 - (1) For lots with frontages of seventy-five feet (75') or less:

Sanitary Sewer Services shall be located ten feet (10') south or west of the center of the lot frontage, as appropriate, except where the grade of the sewer serving the lot is three percent (3%) or more. Where the sewer grade is three percent (3%) or greater, the sanitary sewer service shall be located five feet (5') upstream from the lower lot front corner.
 - (2) For lots with frontages exceeding seventy-five feet (75'):

Sanitary Sewer Services shall be located five feet (5') south or west of the center of the lot frontage, as appropriate, except where the grade of the sewer serving the lot is three percent (3%) or more. Where the sewer grade is three percent (3%) or greater, the sanitary sewer services shall be located five feet (5') upstream from the lower lot front corner.

- d. On sanitary sewer lines smaller than twenty-four inches (24"), locate manholes three hundred feet (300') apart. Manholes may be spaced five hundred feet (500') on lines twenty-four inches (24") and larger.
- e. Provide manholes on sewer lines when horizontal angles are greater than five degrees (5°).
- f. No gravity sewer conveying raw sewage shall be less than eight inches (8") in diameter.
- g. Clean-outs must be supplied at each street connection.
- h. No inverted siphons.
- i. Where topography requires that a sanitary sewer line be installed with less than two and one-half feet (2-1/2') of cover, the pipe shall either be encased in concrete or constructed of cast iron pipe through the restricted area.
- j. Auxiliary power is required at sewage plant and lift stations.
- k. Under the City of Annetta South's standards, sanitary sewer pipe is required to be tested by air or water to a specified condition and the pipe is required to be examined by television camera. To be able to accomplish these test phases, the system shall incorporate the following features:
 - (1) Where steep grades in sanitary sewer pipe between normally spaced manholes impose excessive test pressure in the lower pipe segments and the contractor tests with water, the pipe shall incorporate tees for test purposes at appropriate intervals between the manholes. Such tees shall have the branches the same size as the run diameter; the branch shall be oriented up: the run shall be wrapped to just below the branch bell with concrete encasement; and the branch shall incorporate a plug. After test, the tees shall be plugged and then blocked with concrete.
 - (2) Project requirements shall contain provisions for the City Engineer to install television camera equipment at the end of all sanitary sewer lines. In some instances, this may require that a manhole be placed at the end of the sanitary sewer line for that and other maintenance purposes.
- l. Water lines and sanitary sewers shall be installed no closer to each other than nine feet (9'). Where the nine foot (9') separation distance cannot be achieved, the sanitary

sewer shall be constructed of cast iron ductile iron, or PVC pipe meeting AWWA specifications, having a minimum working pressure rating of one hundred fifty (150) pounds per square inch (psi) or greater.

2. Sanitary Sewer Laterals

The design of sanitary sewer laterals follows the same basic design procedures as those outlined for mains and sub-mains, except that the information required is reduced in complexity to conform to the reduced function of a lateral. The preliminary map prepared for the main may easily be utilized to show the lateral system required also.

3. Final Design Procedure

a. Sizing

(1) Using the cumulative population load at each point of load increment, determine the load on the section below that point in gallons per minute (GPM) using:

a. Load per person per day: 100 gallons

b. Average load per person per day:

$$\frac{100}{1440} = 0.0694 \text{ GPM}$$

c. Average load for a given population:

$$(0.0694) \times (\text{population}) = \text{GPM}$$

d. Ratio of design load to average load is expressed by:

$$M = 1 \frac{14}{4 + \sqrt{P}} \text{ (Harmon's Formula)}$$

Where: M = Ratio of design load to average load
P = Population in thousands

e. Design load = M times the average load generated by the ultimate population to be served by the main being designed.

b. Final Plan and Profile

Prepare a final plan and profile incorporating all information accumulated in accordance with the basic design requirements. Such final plans shall be prepared in accordance with the requirements for assembling information on plans provided under Section 1 of these policies and procedures. In addition, developer's engineers shall provide:

- (1) The latest development platting in the event that the platting has not been recorded;
- (2) All information needed for processing rights-of-way across private and public properties;
- (3) Test hole data: and
- (4) Engineer's cost estimate.

GENERAL DATA ON SEWER LOADS

Approximate Number of Houses Served	Population Served	Peak Load in G.P.M.	Pipe Size & Gradient Required	Pipe Capacity on Given Grade
290 or less	1000	266	8" on 0.40%	306
572	2000	504	8" on 1.00%	497
			10" on 0.30%	486
858	3000	725	10" on 0.70%	761
			12" on 0.20%	818
1144	4000	935	12" on 0.40%	952
			15" on 0.20%	1259
1430	5000	1140	15" on 0.20%	1259

Notes:

- a. Peak loads computed using formula:

$$M + 1 + \frac{14}{4 + \sqrt{P}}$$

Where:

M = Ratio of peak load to average load

P = Population in thousands

- b. Number of persons used per house = 3.5
- c. Load per person = 100 gallons per day
- d. Recommended minimum gradients:

8" on 0.40%

10" on 0.29%

12" on 0.22%

15" on 0.16%

18" on 0.12"

24" and larger on 0.08%

EXHIBIT D STREET STANDARDS

INTRODUCTION

The Master Thoroughfare Plan (MTP) and “Roadway Standards” is a guide for the roadway decisions in planning and development of the City’s infrastructure. The purpose of these street standards is to provide for the safety, health, and well being of the general public by providing adequate streets and drainage facilities in all subdivisions within the City and its extraterritorial jurisdiction (ETJ). Existing infrastructure is utilized to the extent possible.

The standards are based on fundamental principles. The first is that residential neighborhood streets should have low speeds and low vehicular traffic volumes. Second, arterial streets should be designed and located to move higher volumes of traffic at higher speeds.

The streets in a subdivision containing lots with a size of one acre or less shall have a minimum of sixty feet (60’) in width and the roadway shall consist of a minimum 6” thick reinforced cement concrete pavement with concrete curbs on each side with a minimum street width of thirty eight (38’) feet and in accordance with the residential street design standards in Section 19 of this Ordinance. Residential streets for lots more than one acre will be constructed on a 60 right-of-way with a minimum 22” wide and 2” thick H.M.A.C. asphalt surface on a 30’ wide, 6” thick crushed stone base with a 6” depth stabilized subgrade and with open drainage on each side with all applicable provisions of Parker County standards and specifications and referenced by the City of Annetta South’s street standards in Section 19 of this Ordinance.

RIGHT-OF-WAY DEDICATION

Right-of-way (ROW) refers to the width of land necessary to construct roadways, open drains, medians, parking lanes and utilities. The expanding use of public rights of way by utilities and telecommunication networks places greater demands on public spaces. Most ROW is dedicated during final subdivision platting. If the roadway is a border street, each adjacent owner is expected to dedicate a maximum of one-half of the required ROW. Additional ROW may be required at major intersections and interchanges for turning lanes. The amount and location of right of way required are reflective of the specific roadway and its environment.

ARTERIAL STREET INTERSECTIONS

The main objective of intersection design is to increase traffic flow and reduce the severity of potential conflicts between vehicles and/or pedestrians while increasing safety and convenience of pedestrians crossing the intersection. Intersections along any arterial street may require additional right turn lanes and/or left turn lanes. These standards provide for necessary traffic capacity while minimizing the streets’ basic right-of-way requirements. “Small lot high density” areas are defined as a development containing ten (10) or more lots smaller than 2 acre in size.

SIDEWALKS

Sidewalks shall be constructed on new streets in small lot high density residential areas. “Small lot high density” areas are defined as a development containing ten (10) or more lots of one (1) acre or less in size. In order to provide a buffer between pedestrians and moving vehicles, sidewalks will be constructed along the property line. The standard width of sidewalks is 4 feet except when it is adjacent to the curb. At this location, it would be a minimum of 5 feet wide. Sidewalks may meander in the parkway, but should come no closer to the curb than 4 feet.

Walks are required on streets leading to schools for a distance of 1,000 plus or minus as determined by City Council.

DRIVEWAYS

Driveways provide access to adjacent private property. The number and location of driveways can affect the safety and operation of the adjacent roadway. Commercial driveways along streets with low pedestrian traffic should have larger (36’ to 48’) widths with 15’ to 30’ turning radii. Industrial street driveways should also have large widths and curb radii to reflect the type of vehicles using them. Construction easements may be used to construct driveways with larger curb radii. Depending on the volume and type of vehicles utilizing it, the driveway may be built and operated as a “street” intersection. All commercial access driveways that are signalized must be designed as a “street” cross section.

Residential driveways may vary in width at the property line from a minimum of 12 feet to a maximum of 24 feet.

Minimum driveway approach standards shall be as per Ordinance 2020-6-9 as amended.