ORDINANCE NO. 137

AN ORDINANCE OF THE CITY OF PATTISON ESTABLISHING PROCEDURES FOR FILING WITH THE CITY OF PATTISON PRELIMINARY AND FINAL PLATS FOR THE DEVELOPMENT OF SUBDIVISIONS WITHIN THE CITY AND WITHIN THE CITY'S EXTRATERRITORIAL JURISDICTION; PROVIDING FOR DEFINITIONS; ESTABLISHING BUILDING DESIGN STANDARDS; REPEALING ORDINANCE # 90 IN ITS ENTIRETY AND REPLACING ORDINANCE # 90 WITH THIS ORDINANCE; PROVIDING FOR PENALTIES FOR VIOLATIONS OF THIS ORDINANCE.

WHEREAS, it is the intention of the City of Pattison that the procedures, standards and requirements provided for in this ordinance shall be followed for the platting and developing of subdivisions in the City and its extraterritorial jurisdiction;

WHEREAS, pursuant to Texas Local Government Code, Chapter 212 a public hearing was held to adopt this ordinance governing plats of land within the limits and in the extraterritorial jurisdiction of the City of Pattison;

WHEREAS, it is the City Council's intention with this ordinance to provide for the orderly, safe, and healthful development of the area within the City and its extraterritorial jurisdiction and to promote the health, safety, morals and the general welfare of the community;

WHEREAS, it is the City Council's intention with this Ordinance to repeal Ordinance 90 and replaced said Ordinance with this Ordinance.

NOW, THEREFORE BE IT ORDAINED BY THE CITY COUNCIL FOR THE CITY OF PATTISON the following ordinance for subdivision platting process is hereby adopted.

Ordinance 90 is hereby repealed in its' entirety and replaced with this Ordinance.

ARTICLE I. GENERAL REQUIREMENTS.

Section 1. Interpretation.

The City Council at all times reserves to itself the power, duty and responsibility to provide such interpretation, meaning and understanding as shall be from time to time deemed desirable as to the intent, understanding and/or application of this ordinance or any provision of this ordinance, and the decision of the Council as may be expressed in any ordinance adopted from time to time shall be deemed controlling on all parties, as if the same had been repeated verbatim herein.

Section 2. Definitions.

For the purpose of this subdivision ordinance, the following terms, phrases, words and their derivations shall have the meaning given herein. Definitions not expressly prescribed herein are to be determined in accordance with customary usage in municipal planning and engineering practices. The word "shall" is always mandatory, while the word "may" is merely directory.

Access easement shall mean an easement designated on the final plat, whether or not so named, which provides access to platted tracts excepting single family and duplex residential. The easement shall meet all of the requirements as set forth for a dedicated street, including but not limited to construction standards, width, building lines, and function, but shall be privately maintained.

Alley shall mean a minor public right-of-way not intended to provide the primary means of access to abutting lots, which is used primarily for vehicular service access to the back or sides of properties otherwise abutting on a street.

Amending plat shall mean a plat which is controlling over the preceding plat without vacation of that plat, which is submitted for approval of certain dimensional and notational corrections and lot line adjustments under the provisions of the Texas Local Government Code. An amending plat is a final plat.

Approved means accepted by the majority vote of the City Council.

Base flood means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

Base flood elevation (BFE) means the elevation shown on the flood insurance map (FIRM) and found in the accompanying Flood Insurance Study (FIS) that indicates the water surface elevation resulting from the flood that has a one (1) percent chance of equaling or exceeding that level in any given year. Also called the base flood.

Block shall mean a tract or parcel of land designated as such on a duly recorded plat and may be entirely surrounded by public streets or by a combination of public streets and public parks, cemeteries, railroad rights-of-way, or natural or manmade physical features that disrupt what would otherwise be an unbroken landscape (for example, ditches, gullies, ridges, etc.).

Building shall mean any structure which is built for the support, shelter, or enclosure of persons, animals, chattels, machinery, equipment, or movable property of any kind.

Building line or building setback shall mean the line with the property defining the minimum horizontal distance between a building or other structure and the adjacent street line and other property lot lines, including side or rear property lines.

City Council shall mean the City Council for the City of Pattison.

City Engineer shall mean the registered professional engineer or firm of registered professional consulting engineers that has been specifically designated as such by the City.

Commission shall mean the Planning Commission of the City. The Commission is appointed by the City Council to act on subdivision plats, planning issues and such other matters as shall be from time to time referred to the Planning Commission by the City Council.

Comprehensive/Master plan shall mean the comprehensive plan, including all its revisions, of the City of Pattison and adjoining areas as adopted by the Council and the Commission as a guide to future development. This plan indicates the general locations recommended for various land uses, transportation routes, public and private buildings, streets, parks, water, sewer, and other private developments and improvements. The comprehensive plan may also be defined as a series of plans such as the thoroughfare plan, water and sewer plan, and annexation plan, among others.

Condominium shall mean a form of real property with portions of the real property designated for separate ownership or occupancy, and the remainder of the common elements are directly owned in undivided interests by the unit owners. Real property is not a condominium if all of the common elements are owned by a legal entity separate from the unity owners, such as a corporation, even if the separate legal entity is owned by the unit owners.

County shall mean Waller County, Texas.

County Commission shall mean the duly and constitutionally elected governing body of Waller County.

Crosswalk shall mean a public right-of-way not more than six (6) feet in width between property lines which provides pedestrian circulation.

Cul-de-sac shall mean a street having but one (1) outlet to another street and terminated on the opposite end by a vehicular turnaround.

Dead end street shall mean a street, other than a cul-de-sac, with only one (1) outlet.

Design standards shall mean such general requirements as shall be from time to time promulgated by the City Engineer or the City Council for the design of public improvements, infrastructure and private improvements.

Developer and or subdivider shall mean any person subdividing a tract or parcel of land to be sold or otherwise handled for their own personal gain or use.

Development shall mean a planning or construction project involving substantial property involvement and usually including the subdivision of land and change in land use character.

Double front lot shall mean a building lot, not a corner lot, which has frontage on two (2) streets that are parallel or within forty-five (45) degrees of being parallel to each other.

Duplex shall mean a building containing two (2) dwelling units with a common wall, to be occupied by two (2) families living independently of each other.

Easement shall mean an area for restricted use on private property upon which a public utility shall have the right to remove and keep removed all or part of any building, fences, trees, shrubs, or other improvements or growths which in any way endanger, tend to endanger, or interfere with the construction or maintenance, or efficiency of its respective systems on any of these easements. The public utility shall at all times have the right of ingress and egress to, from and upon the said easement for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, and adding to or removing all or part of its respective systems without the necessity of procuring the permission of anyone. The ownership or title to the land encompassed by the easement is retained by the owner.

Engineer shall mean a person duly authorized under the provisions of the Texas Engineering Registration Act, as amended, to practice the profession of engineering and who is specifically qualified to design and prepare construction plans, specifications and documents for subdivision development.

Engineering Construction Plans shall mean engineering plans showing paving and design details of streets, alleys, culverts, bridges, storm sewers, water mains, sanitary sewers and other engineering details of the proposed subdivision prepared by a registered professional engineer conforming with current design standards, this ordinance, an applicable ordinances adopted by the City.

Extraterritorial jurisdiction shall mean the unincorporated territory extending beyond the corporate boundaries of the City established pursuant to Chapter 42 of the Texas Local Government Code, as may be amended from time; and within which the City has statutory authority to enforce this ordinance.

Filing date (Planning Commission) shall mean the date on which the subdivision plat is formally presented to the Planning Commission for its consideration as part of the Commission's official meeting agenda, which shall be considered as the initial date of the statutory 30-day period in which the Commission is required to act upon a subdivision plat submitted to it under the provisions of Chapter 212, of the Texas Local Government Code.

Filing date (City Council) shall mean the date on which a subdivision plat is formally presented to the City Council for its consideration as part of the Council's official meeting agenda which shall be within a 30-days after the date the plat is approved by the Planning Commission. Said

plan or plat is approved by the governing body unless it is approved with conditions or disapproved within that period.

Filing fee shall mean the prescribed fee rates, as shall from time to time be established by the Council to accompany the filing of preliminary and final subdivision plats.

Final plat shall mean a map or drawing of a proposed subdivision prepared to meet all of the requirements for approval by the Planning Commission and the City Council and which is recorded with the office of the County Clerk.

Fire lane shall mean a required access for emergency vehicles to be shown on the plat as a privately maintained easement providing public access.

Flood insurance rate map (FIRM) means an official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

Flood insurance study is the official report provided by the Federal Emergency Management Agency. The report contains flood profiles, water surface elevation of the base flood, as well as the Flood Boundary-Floodway map.

Floodplain or flood-prone area means any land area susceptible to being inundated by water from any source.

Floodplain management regulations means such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

Front or frontage shall mean that portion of a tract of land which abuts on a public street to which it has direct access. In a case where more than one side abuts a public street, the determination of the front shall be determined by the City Engineer.

Interior streets shall mean public streets not more than six hundred feet (600') long within a townhouse subdivision which are located and designed to serve a limited area within such subdivision and shall not serve other properties outside thesubdivision.

Land plan shall mean a map illustrating a general, conceptual or master plan for an area proposed for partial or complete subdivision. The land plan shall show the proposed locations of land uses, streets, phasing of development, important physical features, and other applicable information for the entire area to be subdivided.

Lot shall mean a divided or undivided parcel of land having frontage on at least one public street which is or in the future may be offered for sale, conveyance, transfer or improvement; which is designated as distinct and separate; and which is identified by lot number and block number or symbol in a duly approved subdivision plat which has been properly filed for record.

Lot area shall mean the total area, measured on a horizontal plane, included with the lot or property line.

Lot depth shall mean the length of a straight line connecting the midpoint of the front and rear lot lines.

Lot width shall mean the width of the lot at the front building setback line.

Major Thoroughfare Plan shall mean the comprehensive plan of highways, major thoroughfares, and collector streets as a part of the City's comprehensive plan and adaptations, amendments, or supplements thereto as adopted by the City Council.

Multi-family dwelling shall mean a structure designed to contain three or more complete separate living facilities for single family occupancy. Multi-family dwellings shall include apartments and condominiums and shall be platted accordingly.

One-foot reserve shall mean a buffer strip established within the public street right-of-way and adjacent un-subdivided acreage to prevent access to the public street right-of-way for a street on or parallel to the plat boundary. When the adjacent property is platted the one-foot (1') reserve becomes vested in the public for street right-of-way purposes.

Open space shall mean private property under common ownership designated for recreation area, private park, plat lot area, plaza area and ornamental area open to general view and within the subdivision. Open space does not include streets, alleys, utility easements, and required building setbacks. The primary function of this type of parkland is to preserve vegetated areas and tree lines as well as to conserve sensitive resources. Open space may be required for dedication to the public or restricted by conservation easement in the favor of the City.

Patio home shall mean a structure that is a series of dwelling units designed for single-family occupancy, which are constructed on a lot that shall have a minimum area of six thousand (6,000) square feet and shall have a zero offset on one (1) side of the lot. However, a patio home shall not include a mobile home, manufactured housing and/or travel trailer.

Patio home subdivision shall mean a single-family dwelling which is part of a unit of several houses attached to each other, typically with shared walls between units, and with exterior maintenance and landscaping provided through an association. However, a patio home shall not include a mobile home, manufactured housing and or travel trailer.

Parkland contribution refers to the actual dedication of parkland property to the City by way of plat note and/or general warranty deed.

Pavement width shall mean the portion of a street available for vehicular traffic, where curbs are laid it shall be from inside of curb to inside of curb.

Person shall mean any individual, partnership, co-partnership, association, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, political subdivision, or any other legal entity, or their legal representatives, agents or assigns. This definition includes all federal, state, and local governmental entities.

Plat shall mean a map, drawing, chart, or plan showing the layout of a proposed subdivision into lots, block, streets, parks, school sites, commercial or industrial sites, drainage ways, building lots, easements, alleys, or similar type of plat, which a developer submits for approval and a copy of which he intends to record in final form.

Plat certificate shall mean a certificate issued upon approval and recordation of the subdivision certifying that the subdivision has met all the requirements for a plat.

Plat (Preliminary) shall mean a map or drawing of a proposed subdivision illustrating features of the development for review and recommendation by the commission, but not suitable for recordation in the county records.

Plat (final) shall mean a map or drawing of prosed subdivision prepared to meet all of the requirements for approval by the Planning Commission and the City Council and which is recorded with the office of the County Clerk.

Private park is one that is owned in fee and fully maintained by a homeowners' association or other designated organization. They are designed and constructed by the developer and for the use of residents within the neighborhood.

Private street shall mean a private right-of-way, not dedicated to public use, which provides vehicular access to two or more residential dwelling units, or two or more commercial or industrial buildings or parking areas. The right- of-way and pavement shall meet all of the requirements as set forth for a street dedicated to public use, including but not limited to construction standards, width, building lines, and function, but shall be privately maintained.

Public easement shall mean a right granted or dedicated to the public or governmental agency in, on, across, over, or under property for a specified use by an instrument or map duly recorded in the records of the County.

Public street shall mean a right-of-way dedicated to public use for pedestrian and vehicular traffic and public utility purposes.

Recorded plat shall mean a plat of any lot, tract or parcel of land that is recorded with the County Clerk following final approval by the City Council.

Replat shall mean the resubdivision of all or any part of any block or lots of a previously platted subdivision.

Reserve shall mean a tract, parcel, lot or unit of land not physically divided, which may have frontage on a public street, and which is, or in the future may be, offered for sale, conveyance, transfer, lease, or improvement which is designated as a distinct separate tract and which is identified by a reserve symbol on a duly approved subdivision plat that has been properly recorded with the County.

Re-subdivision shall mean the division of any existing subdivision, together with any change of lot size therein, or the relocation of any street lines.

Sidewalk shall mean a paved pedestrian walkway parallel to a street right-of- way line or street pavement edge, which walkway shall be constructed within the right-of-way of any public street.

Single family dwelling unit shall mean a building containing one (1) dwelling unit that is designed to be occupied by one family, and there shall be only one (1) such dwelling unit per platted lot.

Start of construction includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement was within one hundred and eighty (180) days of the permit date. The actual start means either the placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building whether or not that alteration affects the external dimensions of the building.

Street shall mean a public right-of-way, however designated, which provides vehicular circulation and access to adjacent property:

a. A **major thoroughfare** means a principal traffic artery or traffic way, usually of more or less continuous routing over long distances, whose function is to serve as a principal connecting street with state and federal highways, and shall include each street designated as a major thoroughfare on the major thoroughfare plan of the City. Minimum paving width of a major thoroughfare shall be two (2) twenty-four (24)foot lanes of paved width measured inside curb to inside curb, with fifteen (15) foot median for a four-lane divided roadway; or fifty (50) one-foot paved width measured inside curb to inside curb for a four-lane undivided roadway. Minimum width of right-of-way shall be one hundred (100) feet.

b. An **arterial street** means a main road or thoroughfare usually used to deliver traffic from collector streets to a major thoroughfare.

c. A **collector street** means a street whose function is: (a) to collect and distribute traffic between major thoroughfares and minor streets, (b) to collect and distribute traffic between multiple subdivisions, (c) to serve commercial tracts or other nonresidential tracts, or (d) to serve multi-family residential. It is not necessarily of continuous routing for long distances, has intersections at grades, provides direct access to abutting property, and shall include each street designated as a collector street on the thoroughfare plan or so designated by the City Council. Minimum paving width of a collector street shall be forty (40) feet measured inside curb to inside curb. Minimum width of right-of-way shall be eighty (80) feet.

d. A **minor street** means a street whose function is to provide access to abutting residential

property within neighborhoods, with all intersections at grade, and not of continuous routing for any great distance so as to discourage heavy, through traffic and shall include any public street which is not classified as a major thoroughfare or a collector street. Minimum width of a minor street shall be twenty-seven (27) feet measured inside curb to inside curb. Minimum width of right-of-way shall be sixty (60) feet.

e. An **access street** means a public street within or bounding a townhouse or patio home subdivision which serves a townhouse or patio home subdivision and other adjacent property.

f. An **interior street** means a public street not more than six hundred feet (600') long within a townhouse or patio home subdivision which is located and designed to serve a limited area within such subdivision and shall not serve other properties outside the subdivision.

g. A **local street** means a street that is not a major thoroughfare or a major collector street.

Subdivision shall mean the division of any lot, tract or parcel of land by plat, map or description into two (2) or more parts, lots or sites for the purpose, whether immediate or future, of sale, rental or lease, or division of ownership. Any dedication in the laying or realignment of new streets, or other public or private accessways, with or without lots, shall constitute a subdivision. Subdivision shall also include the resubdivision and replatting of land or lots which are part of a previously recorded subdivision. The term subdivision shall also include the division of land, whether by plat or by metes and bounds description in a deed of conveyance or in a contract for deed, by using a contract of sale or other executory contract to convey or by using any other method that relates to the process of dividing land. A subdivision does not include a division of land into parts greater than five acres, where each part has access to public street and not public improvement is required to be dedicated.

Surveyor shall mean a registered professional land surveyor, as authorized by statutes, to practice the profession of surveying.

Title report shall mean a report, prepared and executed by a title company authorized to do business in the state or an attorney licensed in the state, certifying the true owner of the property and describing all encumbrances of record which affect the property.

Townhouse, row house or condominium shall mean a structure which is one (1) of a series of dwelling units designed for single-family occupancy, which are connected or immediately adjacent to each other. However, a townhouse or row house shall not include a mobile home, manufactured housing and/or travel trailer.

Townhouse, row house or condominium subdivision shall mean those developments in which it is proposed to partition land into individual lots and construct townhouses, row houses, or condominiums which may be individually owned.

Tract shall mean the same as a parcel or lot and shall be subject to the same platting requirements.

Variance shall mean a City Council approved deviation from the requirements of this ordinance.

Section 3. Special Provisions.

a. No plat of a subdivision within the corporate limits or extraterritorial jurisdiction necessary for recording with the County Clerk shall be approved by the City Council or any City official unless the same has been recommended by the Commission and approved by the City Council. It shall accurately describe the property to be conveyed or developed and be prepared in accordance with the subdivision regulations of this ordinance, current design standards and other applicable ordinances notwithstanding any other provisions in this ordinance to the contrary.

b. No building permit, certificate of occupancy, plumbing permit, electrical permit, utility tap, or any other permit or authority required or permitted under this ordinance shall be issued or granted, nor shall acceptance of public improvements within the corporate limits be permitted, without a recorded plat as provided herein.

c. A subdivision within the City and its extraterritorial jurisdiction shall conform to the subdivision regulations, current design standards applicable from the date of final enactment of this chapter or any standards of the City, and other applicable ordinances and standards that may exist and the amendments thereto that may be from time to time adopted that are applicable to a subdivision within the extraterritorial jurisdiction of the City.

d. No building, repair, plumbing, or electrical permit shall be issued by the City for any structure on a lot in a subdivision for which a final plat has not been approved and filed for record, nor any structure on a lot within a subdivision in which the standards contained herein or referred to herein have not been complied with in full.

e. The City shall not repair, maintain, install, or provide or approve any streets or public utility services in any subdivision for which a final plat has not been approved and filed for record, nor in which the standards contained herein or referred to herein have not been complied with in full.

f. The City shall not permit, sell or supply water, electricity, gas or sewerage service within a subdivision for which a final plat has not been approved and filed for record, nor in which the standards contained herein or referred to herein have not been complied within full.

g. The City attorney or their designee shall, when directed by the City Council, institute appropriate action in a court of competent jurisdiction to enforce the provisions of this ordinance or the standards referred to herein with respect to any violation thereof which occurs within the City, or within the extra-territorial jurisdiction of the City.

Section 4. Interpretation and purpose.

a. In the interpretation and application of the provisions of these regulations, it is the intention of the City Council that the principles, standards and requirements provided for herein shall be minimum requirements for the platting and developing of subdivisions in the City and its extraterritorial jurisdiction. It is the purpose of this Ordinance to provide for the orderly, safe, and healthful development of the area within the City and its extraterritorial jurisdiction and to promote the health, safety, morals and welfare of the community.

b. The City Council at all times reserves to itself the power, duty and responsibility to provide such interpretation, meaning and understanding as shall be from time to time deemed desirable as to the intent, understanding and/or application of this Ordinance or any provision hereof, and the decision of the City Council as may be expressed in any ordinance adopted from time to time shall be deemed controlling on all parties hereto as if the same had been repeated verbatim herein.

Section 5. Penalty.

a. Violation of any provision(s) of this Ordinance that governs fire safety, zoning, or public health and sanitation, including dumping or refuse shall be subject to a fine not to exceed two thousand dollars ($2,000.00). All other violations of this ordinance shall be subject to a fine not to exceed five hundred dollars ($500.00). Each day of the occurrence of any such violation or failure to perform such act shall constitute a separate offense.

b. The imposition of a fine upon conviction shall not prevent the revocation or suspension of any license, franchise or permit issued or granted by the City, nor shall it be deemed to prevent, impede or delay the rights of the City to proceed in any other court of competent jurisdiction to secure other equitable relief, including but not limited to, injunctions or to file suits in the name of the City or as a member of a class for damages or other relief as provided by law.

c. Any person, who permits, aids, assists or employs another person in doing any prohibited act or failing to do any act as shall be required in this ordinance shall be deemed in violation as if such person had actually committed such act or failed to actually perform such act as herein required. Such person need not actually be present at the time of the violation; and a person may be deemed in violation whenever the act of permitting, aiding, assisting or employing occurs before or after the violation. Under Chapter 7 of the Texas Penal Code, a person may be responsible as a party to an offense if the person (acting with intent to promote or assist the commission of the offense) solicits, encourages, directs, aids, or attempts to aid another person to commit the offense. Thus, a real estate agent or broker, a lender, an attorney, a surveyor, an engineer, a title insurer, or any other person who assists in violating any provision of this Ordinance may also face criminal penalties.

d. In addition to the penalties hereinabove provided, any condition caused or permitted to exist in violation of any of the provisions of this Ordinance shall be deemed a public nuisance and may be abated by the City as provided by law by filing a civil action to enjoin any violation or threatened violation of this Ordinance.

Section 6. Subject developments.

The provisions of this Ordinance and the current design standards shall apply to the following forms of land:

a. All subdivisions within the City of Pattison or within its extraterritorial jurisdiction where authorized by law;

b. All subdivision of land which was outside the jurisdiction of the subdivision regulations of the City and which subsequently came within the jurisdiction of the subdivisions regulations of the City through annexation or extension of the extraterritorial jurisdiction of the City;

c. The division of land previously subdivided or platted into tracts, sites or parcels, and not recorded;

d. The dedication or vacation, when no appropriation by use, entry or improvement has been made, of streets, fire lanes and alleys through any tract of land regardless of the area involved;

e. The vacation of previously recorded subdivision plat;

f. Permanent public or semi-public spaces such as golf courses, recreational uses, institutional uses, schools, open spaces or park areas, and similar uses; and

g. Any other development on an undeveloped or semi-developed site within the corporate limits or extraterritorial jurisdiction of the City.

h. In the event a reasonable question shall exist at any time as to whether a proposed division of land is subject to the provision of this Ordinance, the City Council is hereby vested with full power and authority to make such determination and the decision shall be on the property owner thereof.

Section 7. Exemptions.

The provisions of the subdivision regulations of this Ordinance shall not apply to:

a. The combining of two contiguous tracts, lots or parcels for the purpose of creating one legal lot, provided that the two contiguous tracts have been previously legally platted and recorded and no easements need to be abandoned;

b. Existing cemeteries complying with all state and local laws and regulations (exemptions do not apply to new cemeteries or expansion of existing cemeteries);

c. Division of land created by order of a court of competent jurisdiction;

d. Divisions of land into parts greater than five (5) acres where each part has access and no public improvement is being dedicated pursuant to Chapter 212 section 212.004(a) of the Texas Local Government Code; and

e. Subdivision development that is exempt by other law.

Section 8. Variances.

a. The Planning Commission shall review all variance requests and make a recommendation to the City Council. The City Council may then authorize a variance from these regulations when in its opinion undue hardship will result from requiring strict compliance. The applicant shall have the responsibility of proving that compliance would create a hardship. In granting a variance, the City Council may prescribe conditions that it deems necessary or desirable to the public interest. Any conditions that are prescribed shall be deemed continuing and shall be placed of record in the office of the County Clerk either on the face of the subdivision plat or as an attachment thereto. The City Council shall take into account the nature of the proposed use of land involved and existing uses of the land in the vicinity, the number of persons who reside or work in the proposed subdivision and the probable effect of such variance upon traffic conditions and upon public health, safety, convenience, and welfare in the vicinity. No variance will be granted unless the City Council finds that an undue hardship exists. The following conditions must be present for consideration:

1. There are special circumstances or conditions affecting the land involved such that the strict application of the provisions of this chapter would deprive the applicant of the reasonable use of his land;

2. The granting of the variance will not be detrimental to the public safety or welfare, or injurious to other property in the area;

3. The granting of the variance will not have the effect of preventing the orderly subdivision of other lands in the area in accordance with the provisions of this Ordinance;

4. A more appropriate design solution exists which is not currently allowed in this Ordinance.

b. A variance may not be granted in such cases where the only evidence for the granting of the variance is the loss of a potential profit at the time of the lot development and build out. Economic hardship to the subdivider, standing alone, shall not be deemed to constitute undue hardship.

c. Such recommendations of the Planning Commission and findings of the City Council, together with the specific facts on which such findings are based, shall be incorporated in the official minutes of the Planning Commission and the City Council meetings at which such variance is recommended or granted. Variances may be granted only when in harmony

with the general purpose and intent of this Ordinance so that the public health, safety and welfare may be secured. The City Council may reach a conclusion that a hardship exists if it finds that:

1. The applicant complies strictly with the provisions of this Ordinance, and no other reasonable use of the property may be made except for the use that is proposed and recommended;

2. The hardship to which the applicant complains is one suffered by the applicant rather than by neighbors or the general public;

3. The hardship relates to the applicant's land, rather than personal circumstances;

4. The hardship is unique to the property, rather than one shared by many surrounding properties; and

5. The hardship is not the result of the applicant's own actions or neglectful conduct.

d. In granting variances, the City may impose such reasonable conditions as will ensure that the use of the property to which the variance applies will be as compatible as practicable with the surrounding properties. All conditions as are imposed shall be placed of record on the face of the subdivision plat or may, as an alternative thereof, be placed of record by separate instrument duly filed for record with the subdivision plat in the office of the County Clerk.

e. A variance may, at the sole discretion of the City Council, be issued for an indefinite duration or for a specified period of time.

f. All conditions imposed by the City Council are enforceable in the same manner as any other applicable requirement of this Ordinance.

Section 9. Responsibility of Subdivider.

It is the responsibility of the applicant for a subdivision plat to obtain such information and/or documentation as shall be necessary to ensure that the application is in accord with the provisions of this Ordinance and all other law. In this regard, it is suggested that the applicant for a subdivision plat first confer with the City and obtain such written information as may be available from the City prior to making an application for subdivision plat approval and/or submitting any documents to the City for approval. The applicant shall be solely responsible for knowledge of all applicable law, policies and/or procedures as may be then promulgated by the City.

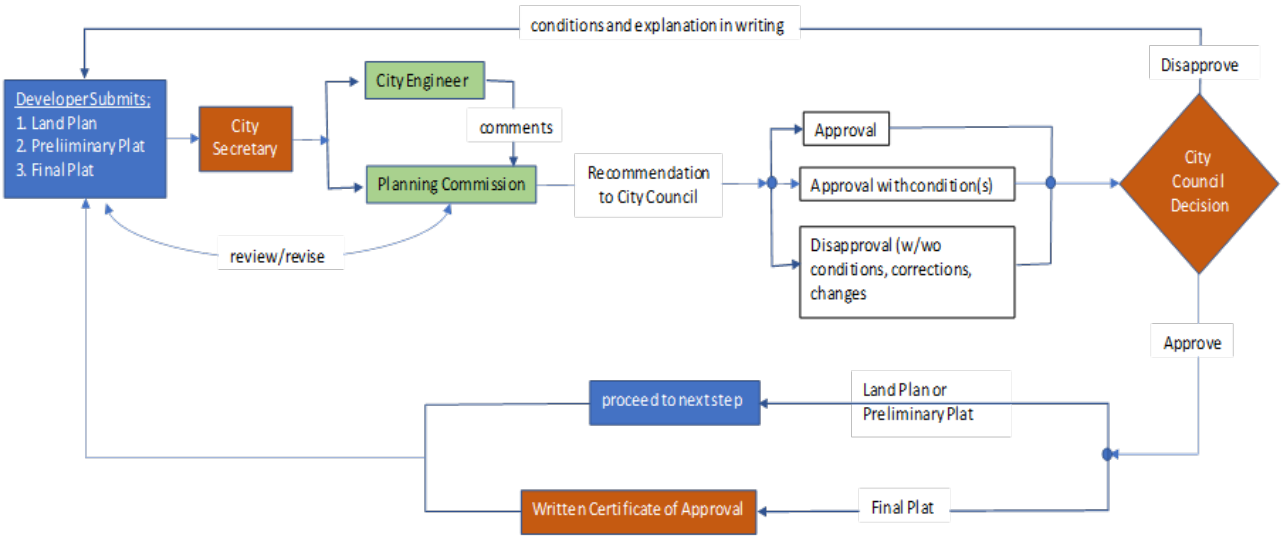
ARTICLE II. PROCEDURES AND REQUIREMENTS FOR PRELIMINARY AND FINAL PLATS.

Section 1. Purpose.

The purpose of this Article is to establish the procedures and requirements for the submittal, review, recommendation, consideration and action by the Planning Commission and the City Council on a request for subdivision plat approval and to provide the procedures necessary to ensure the orderly processing of the application for subdivision plat approval in the City and its extraterritorial jurisdiction.

Section 2. Process Map.

The process map shows the interactions between the Developer, City Engineer, Planning Commission, and the City Council to get a final subdivision plat approved. The process starts when the Developer submits the Land Plan, Preliminary or Final plat to the City Secretary.



The Developer works with the Planning Commission to prepare a recommendation to City Council for approval for each; the Land Plan, Preliminary Plat, and Final Plat. The Planning Commission recommendation to City Council will be to Approve, Approve with Conditions, or Disapprove based on the submittal's compliance with existing Ordinances and Design Standards. The requirements for the Land Plan, Preliminary Plat, and Final Plat are described in detail in the Ordinance.

Section 3. Land plan.

The land plan shall be accompanied by the completed application and appropriate fees at least twenty-one (21) calendar days to the City Engineer and at least fifteen (15) calendar days prior to the Planning Commission regularly or special meeting at which it is to be considered.

a. Two (2) copies of prints of the proposed land plan, drawn on sheets at a size of twenty-two inches by thirty-four inches (22"x34") and twelve (12) copies of the print reduced to a size of eleven inches by seventeen inches (11"x17") shall be submitted. After a review of the land plan, a revised submittal may be required. If required, the revised land plan shall be submitted seven (7) days prior to the Planning Commission meeting and shall include seven (7) copies of the plat drawn on sheets at a size of twenty-two inches by thirty-four inches (22"x34") and eleven (11) copies of the plan reduced to a size of eleven inches by seventeen inches (11"x17").

b. **Effect of Approval**. The recommendation by the Planning Commission to proceed in relation to the land plan shall not be deemed to grant or vest in the applicant approvals or grants other than as specifically provided in this Ordinance and does not constitute approval of the subsequent plats within the plan boundaries.

c. Recommendation of the Planning Commission of a land plan does not exempt a developer from meeting all Ordinances in effect at the time of the recommendation on the land plan and any and all amendments or newly-adopted Ordinances after recommendation and prior to final plat approval, unless agreed to by the City Council under a separate development or utility agreement.

d. Unless agreed to by the City Council under a separate development or utility agreement, the recommendation of approval by the Planning Commission of a land plan shall be valid for a period of twelve (12) months. Extension(s) may be approved by the Planning Commission for up to an additional six (6) months for a total of two (2) years. Upon approval by the City Council of a final plat of individual sections of the development approval of the land plan is automatically extended for an additional twelve (12) months. However, unless agreed to by the City Council under a separate development or utility agreement, the approval of a land plan shall not be valid for a combined period of more than five (5) years.

e. **Not required**. A land plan shall not be required if the preliminary plat(s) contains sufficient information to provide for the proper coordination of development.

Section 4. Land plan purpose and intent and content.

A Land Plan is a map illustrating a general, conceptual or master plan for an area proposed for partial or complete subdivision. The land plan shall show the proposed locations of land uses, streets, phasing of development, important physical features, and other applicable information for the entire area to be subdivided.

a. The purpose of the land plan is to allow the Planning Commission to review the proposed major thoroughfare and collector street patterns, land use, environmental issues, conformance to the comprehensive master plan, the property's relationship to adjoining subdivisions or properties, as well as such additional developmental or infrastructure

review as deemed necessary by the City.

b. A land plan consisting of a general plan, master plan, and/or concept plan shall be submitted to the Planning Commission for review prior to or in conjunction with the submittal of any preliminary plat, except as noted below, for any tract of land over fifty (50) acres in size. If the Planning Commission determines that an area less than fifty (50) acres contains unique features or is surrounded by existing or proposed subdivisions with potential limited access, a land plan may be required to be reviewed prior to the preliminary or final plat submittal. The decision by the Planning Commission to require a land plan shall be deemed final and binding as a condition prerequisite to further review of the proposed subdivision plan.

c. Partial development. Where a phased or partial development is proposed, the land plan shall include the entire property from which the initial or any subsequent phase is being subdivided. Where the subdivider can demonstrate that natural or manmade features, such as creeks and thoroughfares, make unnecessary the inclusion of the entire property in the land plan to adequately review the proposed subdivision for compliance with all of the terms and provision of this Ordinance, the subdivider may request approval from the Planning Commission for a submittal of a smaller land plan area. Boundaries such as thoroughfares (existing or proposed), creeks, political subdivisions, or other such natural or man-made features may be used to delineate the smaller land plan area.

d. Changes to the land plan may be acceptable up through the platting procedures as long as the changes are minor and are not critical or greatly affect the configuration of thoroughfares and collector streets, drainage or other infrastructure, entrances, land uses, etc. The City Engineer or his designee will determine if a change is minor or if there is a need for a new land plan.

e. Traffic impact analysis. Any land plan or subdivision plat involving a change to a proposed thoroughfare plan must be preceded by submission for approval of a traffic impact analysis if required by the Planning Commission and such format and under such procedures as the Planning Commission may from time to time require or specify. Failure to provide a traffic impact analysis and/or traffic study or to meet any other requirements that may be imposed by the Planning Commission shall be grounds to deny the filing of any subdivision plat tendered or offered for filing.

Section 5. Land plan graphic requirements.

a. The City shall be provided with an electronic file of the land plan in the format(s) designated by the City Engineer.

b. Graphic requirements. The following are the graphic requirements of a land plan:

1. A scale of 1"= 100' or 1" = 200'.

2. A title block within the lower right corner of the land plan.

3. A vicinity or location map, drawn to scale, that delineates the location of the proposed subdivision with respect to major thoroughfares, freeways, water courses and ditches. The vicinity map shall be located in the upper right corner of the drawing or map.

4. Proposed name of the development.

5. The name and address of the subdivider and the land planner, engineer, or surveyor responsible for the design or survey.

6. A graphic scale indicating the scale at which the drawing is prepared.

7. Date of the drawing.

8. The legal description of the tract according to the abstract and survey records of the county.

9. North clearly indicated to the top or left of the plan.

10. The perimeter of the boundary drawn in a bold solid line.

11. The names of adjacent additions or subdivisions with respective recording information and/or owners of adjoining parcels of unplatted land with respective recording information.

12. The existing zoning on adjoining land where applicable.

13. The recommended land use on adjoining land; if owned by the same applicant.

14. The location, width and names of all existing or platted streets or other public rights-of-way within and/or adjacent to the tract.

15. Existing permanent buildings.

16. Railroad rights-of-way.

17. Existing drainage channels or creeks and other important natural features.

18. Existing pipelines, fee strips and easements.

19. Adjacent political subdivisions and corporate limits.

20. Applicable district boundaries.

21. The proposed layout and width of proposed thoroughfares, collector streets and minor streets. Designation of tracts as lots or reserves in accordance with anticipated usage.

Section 6. Planning Commission action on preliminary plats.

The purpose of the preliminary plat is to facilitate approval of the final plat before significant spending is done. The Planning Commission will review the preliminary pat and work with the developer to ensure compliance with this Ordinance.

a. A preliminary plat of any proposed subdivision shall be submitted for the Planning Commission review and recommendation for approval in compliance with the schedule and requirements set forth in this Ordinance and as set forth below.

b. The preliminary plat shall be accompanied by the completed application and appropriate fees at least twenty-one (21) calendar days prior to a regularly or special scheduled Commission meeting at which they are to be considered.

c. The Planning Commission may make one of the following recommendation actions within 30 days after the date the plan or plat is filed:

1. Recommend approval;

2. Recommend approval contingent upon corrections or changes to be made to the plat; or

3. Recommend disapproval with written explanation.

d. Recommendation of approval of a preliminary plat by the commission shall be deemed an expression of conditional recommended approval to the layouts submitted on the preliminary plat as a guide for the preparation of the final plat and the future installation of streets, water, sewer, and other required improvements and utilities and to the preparation of construction plans.

e. Approval of a preliminary plat shall be effective for one hundred and eighty (180) days. The applicant who submitted the preliminary plat may request a one-time extension of the previously recommended preliminary plat. The request shall be in writing and submitted at least thirty (30) days before the preliminary plat's expiration. The request shall state the reasons for the extension, the amount of time needed to accommodate the need and an acknowledgement that there are no additional extensions. The maximum extension shall not exceed one hundred and eighty (180) days. The request for all extensions shall be submitted to the City Engineer and the City Council for approval.

f. All objections made to the preliminary plat, or conditions imposed, shall be in writing and

provided to the applicant.

g. No construction work shall begin on the proposed improvements in the proposed subdivision prior to the approval by the Planning Commission and the City Council of the final plat.

h. All variance requests shall be made on the application form and presented to the City Council for approval.

i. Any plat within the extraterritorial jurisdiction of the City shall also be subject to the County platting requirements and the more restrictive requirements shall govern.

Section 7. Preliminary plat general requirements.

a. All preliminary plats shall be submitted in electronic file and computer storage device format(s) designated by the City Engineer (AutoCAD .DWG file or compatible .DXF file) along with ten (10) printed hard copies on legible format on a good grade blue line or black line paper.

b. The preliminary plat shall be prepared by a licensed professional engineer, licensed professional land surveyor and/or land planner.

c. The preliminary plat shall include preliminary plans for the following:

1. Water distribution system;

2. Sewerage collection system; and

3. On-site and off site drainage system.

d. The Planning Commission (through the City Secretary) shall be furnished with copies of letters from the officers and individuals named herein verifying contact and specifying that review has occurred and the activity as herein specified has been successfully completed:

1. The City Engineer stating the proposed subdivision is in compliance with the drainage, road and Ordinance requirements of the City.

2. All applicable utility companies including gas, electrical and telephone, stating that these companies have knowledge of the proposed subdivision and are currently negotiating the necessary service easements and acknowledging receipt of the preliminary plat for the purpose of establishing easements.

3. Any other applicable district or entity with jurisdiction in the area verifying adequate capacities and applicable fees.

e. These verification letters must be received by the Planning Commission prior to final plat

approval by the Commission.

Section 8. Graphic requirements.

a. Preliminary plats which do not include the following data and information will be considered incomplete and may not be accepted for submission by the Planning Commission. The required copies or prints of the proposed subdivision shall include the following:

1. Two (2) copies of prints of the proposed subdivision on sheets at a size of twenty-two inches by thirty-four inches (22" x 34") and twelve (12) copies of the print reduced to a size of eleven inches by seventeen inches (11" x 17") shall be submitted. An electronic file of the preliminary plat and related drawings in the format(s) designated by the City shall also be submitted.

2. In cases of large developments which would exceed the dimensions of the sheet of one hundred feet to the inch (1" = 100') scale, preliminary plats may be two hundred feet to the inch (1" = 200'). A graphic scale shall be shown on the plat.

3. All designated land uses, lots or reserves, on the face of the plat and all approved comprehensive, water, sewer, and thoroughfare plans.

4. Location(s) of any existing structures to be retained shall be shown on the plat.

5. A vicinity or location map that delineates the location of the proposed subdivision with respect to major thoroughfares, freeways, water courses and ditches. The vicinity map shall be located in the upper right corner of the drawing.

6. Boundary lines, abstract lines, survey lines, corporate boundaries, district boundaries, existing or proposed highways and streets.

7. Names and location of all adjoining subdivisions or property owners shall be drawn to the same scale and shown in dashed lines adjacent to the tract proposed for subdivision in sufficient detail to show accurately the existing streets, easements and alleys and other features that may influence the layout of development of the proposed subdivision. Adjacent unplatted land shall show property lines and owners of record, and recording information.

8. Location and widths of all streets, alleys, railroads and easements existing or proposed within the subdivision limits and the manner in which such streets, alleys and easements may eventually connect with those of the nearest existing subdivision.

9. A copy of the proposed subdivision restrictions and/or covenants that are anticipated by be filed for record and will constitute encumbrances on the subject property.

10. Proposed street names are suggested but not required for the preliminary plat.

11. Location of all existing property lines, existing lot and block numbers and date recorded; existing buildings; existing drainage facilities, utilities, and pipelines showing pipe sizes and capacities of sewer or water mains, gas mains, or other underground structures, whether public or private, easements of record; or other existing features within the area proposed for subdivision.

12. Proposed arrangement of lots, including lot and block numbers in accordance with a systematic, consecutive numbering arrangement and proposed use of same and their relationship to streets, alleys and easements in adjacent subdivisions. Any nonresidential reserves shall also be shown.

13. The title under which the proposed subdivision is to be recorded; the name of the city, county and state in which the subdivision is located; the name and complete address of the owner; and the name and complete address of the land planner, engineer, or registered professional land surveyor preparing the drawing shall be located in the lower right corner. The subdivision name shall not be duplicated, but phasing identification is allowed.

14. Sites reserved for parks, playgrounds, schools, or other private or public use.

15. North arrow, date, scale and other pertinent data oriented to the top of the sheet.

16. Contours with intervals of one foot (1') or less for the area with all elevation on the contour map referenced to the latest U.S.C.&G.S. and City data. If no contours exist on-site or immediately adjacent to the site, spot elevations may be used as a substitute for contour lines. Spot elevations shall be no further than five hundred feet (500').

17. All physical features of the property to be subdivided including location and size of all natural and artificial water courses, ditches, ravines, culverts, and bridges; the outline of major wooded areas or the location, species and sizes of major specimen trees of thirty inches (30") or greater in diameter; and other structures or features pertinent to the subdivision.

18. 100-year flood plain according to the Federal Emergency Management Agency information.

Section 9. Action by the Planning Commission on the final plat.

a. After the preliminary plat has been approved or conditionally approved by the Planning Commission, the subdivider shall submit a final plat to the Planning Commission.

b. The final plat and construction plans shall be submitted for review at least fifteen (15)

calendar days prior to a regularly or special scheduled commission meeting at which they are to be considered.

c. The Planning Commission may take one of the following actions within 30 days after the date the plan or plat is filed:

1. Recommend approval;

2. Recommend approval contingent upon corrections or changes to be made to the final plat; or

3. Recommend disapproval with written explanation.

d. **Effect of approval**. In the event the commission should recommend approval of a final plat contingent upon correction, the subdivider shall then submit the final plat with the required changes to the City Engineer for approval at least fifteen (15) calendar days prior to a regularly or specially scheduled City Council meeting.

Section 10. Final plat requirements.

The purpose of the final plat is to have a map or drawing of a proposed subdivision which meets all of the requirements for approval by the Planning Commission, City Engineer, and the City Council and which is suitable for recording with the Office of the County Clerk.

a. The submittal of the final plat shall include the following:

1. The final plat shall be in general conformance with the preliminary plat as recommended and shall incorporate all conditions, changes, directions and additions recommended by the Planning Commission and if not directly incorporated, the terms or provisions thereof shall be inscribed on the face of the plat and/or set out on separate writing to filed for record with the plat. The final approval of the plat shall be by the City Council. If the subdivision is in the City's extraterritorial jurisdiction, it shall also be approved by the Waller County.

2. The final plat shall not be submitted for City Council approval until detailed engineering construction plans have been submitted for approval by the City Engineer.

3. The final plat shall constitute only that portion approved of the preliminary plat which the subdivider proposes to record and then develop. Such portion shall conform to all the requirements of the regulations of this Ordinance.

4. The final plat and construction plans shall be submitted for review and recommendation by the Commission at least twenty-one (21) calendar days prior to a regularly or specially scheduled meeting at which they are to be considered.

5. Ten (10) copies of prints of the proposed subdivision on sheets at a size of twenty-two by thirty-four inches (22"x 34") and drawn to a minimum scale of one hundred feet to the inch (1" = 100') and ten (10) copies of the print reduced to a size of eleven inches by seventeen inches (11"x17") shall be submitted. The submittal shall include the following:

   i. Completed application form;

   ii. Copies and reductions of the plat;

   iii. Transmittal letter;

   iv. Fees;

   v. Tax certificates;

   vi. Current title commitment of specific tract of land; and

   vii. Engineering construction plans, or as a minimum requirement, the final utility layout showing the sizes and depths of all utilities as well as street widths.

6. All public utility easements shall be included as required for utility companies.

7. The final plat (and any replats) shall be prepared by a registered professional land surveyor.

8. Resolution of any contingency items recommended by the Commission.

9. Performance bonds, letter of credit for the cost of the public improvements, or assurance of completion of the public improvements.

a. Graphic requirements for final plat. In addition to the graphic requirements for a preliminary plat the final plat shall include the following:

1. All final plats shall be submitted in electronic file on digital storage device in the format(s) designated by the City Engineer (AutoCAD .DWG file or compatible .DXF file) along with ten (10) printed hardcopies consistent with the required graphic requirements of sheets no larger than twenty-two inches by thirty-four inches (22"x34") and to a scale not greater than one hundred feet to the inch (1" =100').

2. The exterior boundary for the subdivision shall be indicated by a distinct bold line and corner marked by individual symbols

3. The length and bearing of all straight lines, and the radii, arc lengths, chord length, tangent length and central angles of all curves shall be indicated along the lines of each lot or in a cube or line table. The curve data pertaining to block or lot boundaries may be placed in a curve table showing curve number, radius, delta, arc length, chord length, and chord bearing.

4. The names and recording information of all adjoining subdivisions, all abutting lots, lot and block numbers and other recorded information.

5. Reference ties to courses and distances of at least one recognized land corner shall be shown with a point of beginning.

6. The names, accurate location and widths of all adjacent streets, watercourses, railroads, alleys, easements, City and utility district boundaries.

7. Street names shall be shown and shall not duplicate existing street names in the City or the extraterritorial jurisdiction. Extensions of streets shall have the same name as the existing street. Similar spelling or pronunciations should be avoided to prevent confusion.

8. The location and dimension of any utility easement adjoining or abutting the subdivision or proposed within the subdivision shall be shown. It shall be applicant's responsibility to coordinate with appropriate utility companies for placement of utility easements.

9. In all subdivisions and additions, sufficient permanent monuments shall be established at points to represent or reference boundary corners, angle points, and points of curvature or tangency along all street rights-of-way in the subdivision. Survey monuments shall be an iron rod or pipe not less than five-eighth inches (5/8") in diameter and twenty-four inches (24") long. Monuments shall be set flush with the top of the ground or the curb. Each monument set by the surveyor shall include a cap with the surveyor's identification attached to it.

10. The final plat shall show a title block in the lower right corner of the sheet. The name of the subdivision, the name, address, and telephone numbers of the subdivider and engineer or surveyor, the scale and location of the subdivision, and reference to original land grant or survey and abstract numbers shall be indicated. If more than one page is required for the plat, the title block may be reduced in size on the subsequent sheets. The vicinity map is required on only one sheet.

11. An owner's dedication block or acknowledgment shall be attached to and be a part of the final subdivision plat.

12. A statement signed by the owner and acknowledged before a notary public as to the

authenticity of the signatures.

13. Lien holder's certification and notarization.

14. A signed registered professional land surveyor's certificate.

15. Plat approval block for the signature of the mayor and City Council and a place for the City Secretary to attest such signature.

16. Locations of any existing structures to be retained shall be shown on the plat.

17. Any proposed reserve uses and the property dimensions shall be shown on the plat. The use of the reserve shall be shown.

18. Any special restrictions shall be noted on the plat or referenced accordingly.

19. General notes shall be included on the final plat as specified by the city. These notes shall appear on the same page with the layout of the subdivision and shall include, but are not limited to the following:

    i. Standard abbreviations;

    ii. Finished floor elevations;

    iii. Reference to U.S.C.&G.S. benchmark and description and temporary benchmark within five hundred feet (500') of the subdivision;

    iv. Elevation data;

    v. Flood zone information;

    vi. District boundaries;

    vii. Location of aerial easements; and

    viii. Building permit note.

Section 11. Engineering construction plans.

Prior to the submittal of the final plat for City Council approval, engineering plans showing paving and design details of streets, alleys, culverts, bridges, storm sewers, water mains, sanitary sewers and other engineering details of the proposed subdivision shall be submitted to the City Engineer. Such plans shall be prepared by a registered professional engineer and shall conform with current design standards, this Ordinance and applicable Ordinances adopted by the City.

Section 12. Action by City Council on the final plat.

a. **Filing date.** The filing date of an application for final plat approval with the City Council shall be the date the commission recommends approval of the plat. However, if the Commission recommends approval with conditions, the plat will not be considered as "filed" until all conditions have been met by the applicant. The City Engineer shall certify in writing when conditions have been addressed. The statutory thirty (30)-day time period shall begin when all conditions and all submittal requirements have been completed as certified by the City Engineer.

b. The action of the City Council on the final plat shall consist of one of the following within 30 days after the date the plan or plat is filed:

1. Approval and provide written certificate of approval;

2. Disapproval with conditions and written explanation; or

3. Approval, with conditions or upon corrections or changes to be made to the plat.

c. Final approval by the City Council shall expire if the plat is not recorded within one (1) year of the date of final approval by the City Council. Failure to record the plat within one (l) year of the date of City Council approval, shall void all approvals thereto. An extension of approval may be requested in writing at least thirty (30) days prior to the expiration date and submitted to City Council for approval.

d. Where only a portion of an approved preliminary plat is submitted for final plat approval, a final plat of the remaining area may be submitted at any time within five (5) years of the date of preliminary plat approval. If the final plat for the remaining area does not conform substantially with the approved preliminary plat, the remaining area of the preliminary plat shall be deemed null and void. If a final plat of the remaining area has not been submitted within the five-year time period, the portion of the preliminary plat for which no final plat has been submitted shall be deemed null and void. However, if at least one (1) phase of the preliminary plat has received final plat approval, its public improvements have been completed, and it has been filed in accordance with this Ordinance, an extension to the five-year time limit shall be granted by City Council upon request by the developer unless the City Engineer or his designee determines that development conditions have substantially changed since the date of preliminary plat approval. The City Council may deny the request if it determines that development conditions have substantially changed, and such conditions shall be stated in the minutes of the meeting. A request for the extension must be submitted to the City Council thirty (30) days prior to the five-year deadline date. Such extensions shall be for a period of one (1) year and may be renewed annually.

Section 13. Signature and recordation.

Following approval by the City Council, the specified number of originals may be submitted for signature and the placement of the City seal. If the final plat is within the City limits, the originals shall be accompanied by the filing fee and the City shall record the final plat at the County Clerk's office. If the final plat is in the extraterritorial jurisdiction, the plat originals shall be forwarded by the City to the office of the County Engineer for review and action by the County Commissioners Court and recordation.

Section 14. Commencement of work.

No construction work shall begin on the proposed improvements in the proposed subdivision prior to the approval of the final plat.

Section 15. Additional requirements.

a. The subdivision plat boundaries shall be tied to existing monuments with coordinates using Texas Plane Coordinate System, South Central Zone.

b. The City shall be provided with an AutoCAD .DWG file or compatible .DXF file on computer disk.

Section 16. Short form plat.

a. Approval of platting under the short form procedures eliminates the necessity for a preliminary plat. Application fees for short form platting shall be paid at the time of application.

b. A short form platting procedure may be requested if the final plat meets the following requirements:

1. No more than four (4) lots, tracts or reserves are included.

2. The area to be platted lies within an existing public street circulation system already approved by the City Council.

3. The plat does not propose to vacate public street right-of-way or easements.

4. The plat does not propose creation or extension of public rights-of- way.

5. The proposed development does not require any significant drainage improvements and, if contained wholly or partially within the 100- year flood plain, conforms to Federal Emergency Management Agency flood plain management rules.

6. The proposed development is consistent with the thoroughfare plan and creates no

significant traffic congestion on the existing public street system.

7. The short form plat shall meet all of the requirements for a final plat.

Section 17. Minor plat.

The minor plat, as specified in the Texas Local Government Code, Section 212.0065(a)(2) may be used in a limited manner in order to create or adjust property lines and/or easements as defined in the plat for the purpose of development flexibility. The minor plat shall involve four or fewer lots fronting on an existing street and shall not require the creation of any new street or extension of municipal facilities. The minor plat shall meet all the requirements of a short form final plat.

Section 18. Vacating plat.

a. A plat or any part of a plat may be vacated by request of the owners of all of the lots in the plat. In addition to the procedures outlined in Chapter 212, Texas Local Government Code, as amended, the submittal requirements for the vacation to the Planning Commission and City Council are the same as for approval of a final plat.

b. A vacated plat shall be recommended by the Planning Commission and approved by the City Council. The City Council may reject any vacation instrument which abridges or destroys any public rights in improvements, easements, streets, alleys or similar public areas which are deemed by the City Council necessary to serve the surrounding area.

c. An approved vacated plat must be recorded.

Section 19. Replat.

a. A replat is a redesign of all or a part of a recorded plat or subdivision of land which substantially changes the elements of the plat. The same procedures shall be followed as for preliminary, final or short form plat. The replat must be in accordance with Chapter 212, Texas Local Government Code, including a public hearing.

b. All proposed replats which are governed by the provisions of Chapter 212 of the Texas Local Government Code must be submitted with the following items in addition to those required by the preliminary, final or short form plat:

1. A written statement indicating intent to seek the Planning Commission and City Council approval under the requirements of Chapter 212 of the Texas Local Government Code.

2. A current (not more than 30 days old) title report, statement, opinion, title policy, certificate or letter from a title company authorized to do business in the State of Texas or from an attorney licensed as such in the State of Texas which indicates the name of the record owner of fee simple title for every piece of property required to be given written notice of such replat under the provisions of Chapter 212 of the

Texas Local Government Code.

3. A certified list (not more than 30 days old) of all owners of property as such ownership appears on the last approved ad valorem tax rolls of either the City or county in which such property is located, which are required to be given written notice of such replat under the provisions of Chapter 212 of the Texas Local Government Code. Certification for the purpose of this subsection shall be made by a title company authorized to do business in the State of Texas or an attorney licensed as such in the State of Texas.

4. One (1) stamped envelope addressed to each landowner indicated on either the title report or the tax roll as required above. Each envelope shall contain a copy of the required notice as set out in Chapter 212 of the Texas Local Government Code.

5. An affidavit in separate writing signed by all the owners of property within proposed replat which attests that the proposed replat "does not attempt to alter, amend or remove covenants or restrictions."

6. The Mayor will establish a date for the public hearing and authorize the City Secretary to publish the required notification of the public hearing.

c. If action on a residential replat application must be deferred because sufficient written protest has been submitted, the thirty (30) day period in which action must be taken by the City Council is extended by the period of time necessary to verify the written protest.

d. The replat of a subdivision shall meet all the requirements for a new subdivision that may be pertinent, as provided for herein. It shall show the existing property being re-subdivided.

e. The title shall identify the documents as "Lots_____, being a replat of Lots_____of Block_____of the Subdivision." A reason for the replat shall also be stated on the plat.

f. A partial replat of only the affected lots will be accepted when the conditions and/or opinions allowed by the amending plat procedure are not applicable.

Section 20. Amending plat.

a. An amending plat shall meet all of the informational requirements set forth for a final plat.

b. The Planning Commission may recommend and the City Council may approve an amending plat, which shall be recorded and is controlling over the preceding or final plat without vacation of the plat, if the amending plat is signed by the applicants only and is solely for one or more of the purposes listed in Chapter 212 of the Texas Local Government Code pertaining to amending plats.

Section 21. Recordation.

Following the approval of the City Council, a plat shall follow the following procedure for recordation:

a. The subdivider shall submit the required number of original to the City for signatures and recordation. All signatures shall be clearly affixed in permanent black ink. All seals shall be affixed in permanent black ink or a raised seal.

b. A current title commitment for the specified tract and current tax certificate shall be submitted and verified prior to the City signatures and seals being affixed on the plat.

c. If the subdivision is within the City, the City shall record the plat in the County Clerk's office. The subdivider shall forward a check for the appropriate amount with the submittal of the originals for signatures. If the plat is in the extraterritorial jurisdiction, the plat originals shall be forwarded by the City to the County for approval and recordation. One recorded original shall be returned to the City.

d. The restrictive covenants shall be provided and the recording information shall be shown in a note on the plat.

e. An address map shall be provided. All addresses shall be coordinated with the appropriate utility company or the city.

Section 22. Schedule of fees.

a. All fees must be paid at the time an application for authority hereunder is made in accordance with the schedule of fees established by resolution of the City Council.

b. Additional fees shall be collected for the purpose of defraying the costs of administrative, clerical, inspection services and professional fees necessary to properly investigate the request for authority hereunder, as required prior to any final approval.

Section 23. Construction Surety

The Developer shall give a good and sufficient bond, cash, or letter of credit. This will be referred to as the construction security. The improvements shall be completed within 12 months of the plat date and the security shall reflect these 12 months. With City Council approval, an extension of up to one year may be granted. This construction security must be payable to the City of Pattison, in an amount equal to the estimated cost of construction, according to the calculations of a Texas Professional Engineer and approved by the City Council. The security shall be conditioned on the completion (in compliance with the Engineering Guidelines) of all the streets and drainage shown on the plat.

a. The developer shall be entitled to partial reductions of his security requirement with written approval by the City Council.

Section 24. Maintenance bond.

a. With the approval of City Council, the developer shall give a surety bond, cash or letter of credit in an amount equal to 25% of the cost of construction for the streets and drainage in the subdivision. This will be referred to as the maintenance bond.

b. City Council must approve each bond or letter of credit. This security is to be conditioned upon the developer's maintenance of the streets in a state of good repair until the time as they are accepted. The security shall be made payable to the City of Pattison and shall remain in effect until released by City Council.

c. Security will be released when the street qualifies for final acceptance. Before release of the security, the City Engineer shall perform the final inspection of the street, and the developer shall remedy all deficiencies. If the deficiencies are not promptly remedied, the City shall make the repairs and draw on the security for payment.

ARTICLE III. DESIGN STANDARDS

DIVISION 1. GENERALLY.

Section 1. Generally.

a. The City Council shall require that all land subdividers and developers (hereinafter collectively referred to as "developer") shall, on all subdivisions of land in the City and within its extraterritorial jurisdiction, where applicable by law, as that term is defined in the Texas Local Government Code, adhere to and be governed by the policies that have been established for the provision and construction of underground utilities, street improvements, alleys or easements.

b. Water lines, sewer lines and storm sewers.

1. The Developer shall be required to construct, at his own expense, all water lines, sewer lines, storm sewer lines, drainage ditches, detention facilities, water and sanitary sewer services, if required, and structures in accordance with the current design standards in effect at the time of construction. This shall include all engineering costs for design, layout and construction supervision. Preliminary plans and layouts for all such utility lines shall be submitted by the developer to the commission for study along with the submission of the preliminary plat of the subdivision. Final construction plans will be submitted by the developer at the time of filing his final plat with the City Secretary and the Commission in the same number of copies as required of the subdivision plat.

2. There will be no participation by the City in the cost of any of the underground utility lines or drainage facilities within the subdivision except in the event of the

requirement for oversize lines to serve land areas and improvements beyond the subdivision in question, or to serve other subdivisions. Each installation of this character and the terms and extent of City participation will be considered individually upon the merits of each facility and the conditions involved.

3. Trunk lines of such systems to serve the subdivision under consideration will be considered upon each facility's individual merits for each subdivision.

c. Street improvements, curb and gutter, pavement.

1. The Developer shall be required to construct, at his own expense, streets in accordance with current design standards in effect at the time of construction. This shall include all engineering costs for design, layout and construction supervision. Preliminary plans for such improvements shall be submitted to the commission for study and for tentative approval before any work is started in the subdivision. Detailed construction plans, including plan and profile for each street, shall be filed with the submission of the final plat in the same number of copies as required of the final subdivision plat.

d. Water and sewer facilities; land subject to flooding and otherwise inhabitable.

1. The Planning Commission may refuse to approve a plat when it is evident that adequate water and sewer facilities cannot be supplied within a reasonable time.

2. Land subject to flooding and land deemed by the Planning Commission to be uninhabitable shall not be platted for residential occupancy nor shall it be platted for such other uses as may increase danger to health, safety, life or property or aggravate the flood hazard, but such land within the plat shall be set aside for such uses as shall not be endangered by periodic or occasional inundation and shall not produce unsatisfactory living conditions.

Section 2. Changes or amendments to the design standards.

The current design standards will, from time to time require revisions and updates to allow for changing construction technology. The design standards referenced herein shall mean the current standards as of the date of adoption of this Ordinance, or as they may be revised from time to time.

Section 3. Improvement Construction Security and Acceptance

a. The developer of any tract that desires to obtain approval of a plat for recording in the county records shall construct all streets and drainage in the subdivision to the standards and specifications set forth in the Engineering Design Standards incorporated as Article IV of these regulations before offering the plat for approval, unless exempted.

b. Improvement plans shall be approved by the City Engineer who shall certify that the plan is in conformance with these regulations. Variance from the requirements shall be permitted only by,

City Council approval.

c. The Developer shall submit construction plans for streets and drainage, traffic signage, landscaping (within the public Right of way), irrigation (within the public Right of way), and utilities within a platted subdivision to the City Engineer for approval prior to final plat approval being granted by City Council. These plans shall show the location of all underground utilities, including water, sewage, and storm sewers. These plans shall include the design issues as described in Article IV Engineering Design Standards.

d. If landscaping and/or irrigation is proposed within the right of way, the developer shall create an entity such as municipal utility district, homeowners' association, neighborhood association, or other entity approved by City Council that will be responsible for the maintenance and liability of the landscaping and/or irrigation. This entity shall have assessment authority to ensure proper maintenance.

e. When construction has been completed, the developer shall provide the City Engineer with a set of "Record Drawings". These plans are to show the improvements as they were actually built. The digital file shall be in a .DWG format or a format that is readily convertible to .DWG format. After the "Record Drawings" plans are received, the City Engineer will provide the developer a letter approving the construction of the subdivision.

f. When traffic signal lights and additional turn lanes are required for traffic generated by subdivisions, these items shall be the responsibility of the developer and the construction cost shall be included in the security.

Section 4. Improvement Maintenance Security and Acceptance

a. By accepting a subdivision plat for filing, the City Council does not accept streets in the subdivision for ownership or maintenance by the City. The owner of the platted lots is responsible for maintenance of all streets within a subdivision until such time as the streets have been accepted for maintenance by the City. This holds true even though the City has approved the construction of the improvements.

b. The City will not accept a street for maintenance without the following:

    1. A dedication to the public of an easement or fee interest in the entire street;

    2. Written certification from a Texas Professional Engineer that the street was constructed in accordance with the Engineering Guidelines in effect when the subdivision was legally platted (or has been upgraded to those standards). The letter from the City Engineer may be used to meet this requirement. If the subdivision where the street is located was never legally platted, it must meet the current guidelines;

    3. Written certification from a Texas Professional Engineer that the street is currently in compliance with the applicable guidelines. The cost of any improvements, maintenance, or repairs required to reach that standard shall be borne by the developer or current

owners;

4. Agreement by the City Council that the street should be accepted, following an inspection by the City Engineer; and

5. The expiration of one year from the date that all streets, drainage and other improvements in the subdivision are completed, inspected by the City Engineer, and approved by City Council;

c. The enforcement of plat restrictions is the responsibility of the developer and other owners in the subdivision; however, in an ETJ, both the City and the county shall have the authority to enforce plat restrictions to prohibit the construction or connection of utilities, or issuing of permits unless the requirements of the plat restrictions have been achieved.

d. The City will assume no responsibility for drainage facilities in the subdivision, other than those running on or along the streets or in approved drainage easements until they are formally accepted by the City Council for maintenance. Maintenance and liability of landscaped areas within the right of way will be the responsibility of the developer, the municipal utility district, neighborhood association, or other developer entity.

Section 5. Substandard Subdivisions

The City may accept maintenance of any street located in a subdivision in existence prior to the adoption of this Ordinance (whether that subdivision was lawfully platted or not), provided that the streets meet all the criteria of the design standards regulations. The City will assume no part of the cost of bringing the streets into compliance before acceptance.

Section 6. Procedural requirements.

All persons proposing or intending to develop a subdivision within the incorporated limits of the City or within its extraterritorial jurisdiction shall comply with the procedural requirements set out in this subdivision Ordinance.

DIVISION 2. SINGLE FAMILY SUBDIVISIONS

Residential lots, tracts or reserves shall conform to the following requirements:

Section 1. Lot widths - minimum standards.

a. Single family:

1. Open ditch streets- Seventy (70) feet.

2. Single-family subdivisions of twenty (20) acres or less in total area with curb and gutter streets- All lots of a subdivision or development shall have a minimum lot width of 60 feet or wider as measured at the front building line. Cul-de-sac/radial

lots shall have 50 feet minimum width at the right of way line.

3. Single-family subdivisions of more than twenty (20) acres in total area with curb and gutter streets- A minimum of 50% of lots of a subdivision or development, in its entirety and not by sections or phases, shall have a minimum lot width of 60 feet or wider as measured at the front building line, and such cul-de-sac/radial lots shall have 50 feet minimum width at the right of way line. The remaining 50% of lots may have a minimum lot width of 50 feet or wider, and such cul-de-sac/radial lots shall have 40 feet minimum width at the right of way line.

b. Two-family dwelling (Duplex) – 80 feet

c. Patio home/zero lot line – 50 feet (concrete curb and gutter)

d. Townhouse – 30 feet (concrete curb and gutter)

Section 2. Lot size – minimum.

a. Minimum lot size shall be one (1) net acre for lots which have a private water well and septic system. All easements are excluded from the one-acre calculation.

b. For single family lots which have connected to public or a Municipal Utility District, or a Water Supply Corporation or other water district entity and wastewater system, the minimum area of all lots within each section shall be:

1. Open ditch streets- Eighty-four hundred square feet (8,400 sq. ft.).

2. Single-family subdivisions of twenty (20) acres or less in total area with curb and gutter streets- All lots of a subdivision or development shall have a minimum lot size of Seventy-two hundred square feet (7,200 sq. ft.).

3. Single-family subdivisions of more than twenty (20) acres in total area with curb and gutter streets- A minimum of 50% of lots of a subdivision or development, in its entirety and not by sections or phases, shall have a minimum lot size of Seventy-two hundred square feet (7,200 sq. ft.). The remaining 50% of lots may have a minimum lot size of Six thousand square feet (6,000 sq. ft.).

4. Cul-de-sac/radial- Sixty-five hundred square feet (6500 sq. ft.).

c. Two-family dwelling (Duplex) – ninety-six hundred square feet (9,600 sq. ft.)

d. Patio home/zero lot line - Six thousand square feet (6,000 sq. ft.)

1. Townhouse – Thirty-six hundred square feet (3,600 sq. ft.)

e. Side lot lines should be generally at right angles or radial to the street right-of-way lines.

f. Double frontage and reverse frontage lots shall be avoided except where essential to provide separation of residential development from traffic arteries or to overcome specific disadvantages to topography and orientation. Where lots have double frontage, a front building line shall be established for each street and access shall be denied to the thoroughfare.

g. All reserves shall be labeled with their appropriate use. Landscape and detention reserves may also be designated as utility easements. When in the determination of the City Council the proposed land use is essential to the signage of public facilities, the City Council may require the intended use of the reserve to be specified.

h. All nonresidential and multifamily tracts or reserves shall front on a dedicated public street or dedicated access easement or a fire lane easement. The design of driveways, access easements and fire lanes shall be in conformance with the current design standards.

In no case shall a rectangular or irregularly shaped lot contain less than the minimum square footage as designated.

DIVISION 3. TOWNHOUSE AND CONDOMINIUM SUBDIVISIONS.

Section 1. Streets and other public ways.

a. Interior streets shall have a minimum right-of-way width of sixty feet (60') and shall be developed with a minimum of a twenty-seven (27) foot paving section measured inside curb to inside curb with concrete curbs and gutters in accordance with the current design standards. Dead-end access easements shall not be greater than two hundred feet (200') in length. All rear access easements shall not be dedicated as public rights-of-way but shall be private rights-of-way and shall be privately maintained.

b. All townhouse lots shall have direct access to an interior street or a rear access easement to an interior street. Rear access easements to an interior street shall have a width of thirty-eight feet (38') and a twenty-seven foot (27') paving section measured inside of curb to inside of curb.

Section 2. Building setback.

a. Building setback lines of twenty-five feet (25') shall be required on all lots fronting or backing on an access street.

b. Building setback lines of fifteen feet (15') shall be required on all lots siding on access streets or upon a plat boundary.

c. No building setback lines shall be required on the sides of lots abutting interior streets, except where traffic safety or other factors necessitate the establishment of such records.

Section 3. Lots.

a. Lot area shall be a minimum of thirty-six hundred square feet (3,600).

b. Lot width shall be a minimum of thirty feet (30').

c. Dwelling units may be constructed up to side lot lines, and openings shall not face a side lot line unless the sidewall of the dwelling unit is at least ten feet (10') from the side lot line.

Section 4. Parking.

Each development plat containing a multi-family residential development shall provide a minimum of two (2) car garage in addition to on-street parking spaces in accordance with the following schedule:

Unit Size	Parking Spaces Required Per Unit
Efficiency	2.0
One bedroom	2.0
Two bedrooms	3.0
Three or more bedrooms	3.0

For the purpose of this section, the minimum dimensions of each parking space shall be 9 feet by 20 feet; provided, however two (2) spaces adjacent to the other shall not be less than 18 feet by 20 feet if side by side, and not less than 12 feet by 40 feet if aligned linearly.

Section 5. Utilities.

All utilities such as sanitary sewer, water, gas, telephone, television cable and electrical, shall be placed underground.

Section 6. Other requirements.

a. A townhouse subdivision shall meet all requirements of this Ordinance, the provisions of this division that are permitted especially for townhouse subdivisions.

b. Deed restrictions must provide that: "No autos, trucks, boats, campers, other trailers, or vehicles of any kind shall ever be left parked on the grass or yard except as provided for in

paved off-street parking space and then only as temporary parking incident to the contemporaneous use of such vehicle or object, nor shall same be left parked on any lot unless parked inside a garage."

DIVISION 4. PATIO HOME SUBDIVISIONS.

Section 1. Streets and other public ways.

a. Interior streets shall have a minimum right-of-way width of sixty feet (60') and shall be developed with a minimum of a twenty-seven foot (27') paving section with concrete curb and gutters in accordance with current design standards.

Section 2. Lots.

a. Lot area shall be a minimum of six thousand (6,000) square feet.

b. Lot width shall be a minimum of fifty feet (50').

c. Dwelling units shall be constructed with a zero lot line clearance on one (1) side of lot. Doors shall not be installed in sides with zero lot line clearance.

d. Ten feet (10') must be maintained between sides of any two (2) dwelling units placed on adjacent lots.

e. Deed restrictions for zero lot line clearance must provide ten-foot (10') easement to owner whose dwelling unit is on the property line for maintenance purposes.

f. Deed restrictions must provide that: "No autos, trucks, boats, campers, other trailers, or vehicles of any kind shall ever be left parked on the grass or yard except as provided for in paved off-street parking space and then only as temporary parking incident to the contemporaneous use of such vehicle or object, nor shall same be left parked on any lot unless parked inside a garage."

Section 3. Parking.

Each lot shall have constructed and maintained thereon a minimum two car garage in addition to two (2) on-street parking spaces.

For the purpose of this section, the minimum dimensions of each parking space shall be 9 feet by 20 feet; provided, however two (2) spaces adjacent to the other shall not be less than 18 feet by 20 feet if side by side, and not less than 12 feet by 40 feet if aligned linearly.

Section 4. Utilities.

All utilities such as sanitary sewer, water, gas, telephone, television cable, and electrical service shall be placed underground.

Section 5. Other requirements.

a. A patio home subdivision shall meet all requirements of this Ordinance, the provisions of this division being variations permitted especially for patio home subdivisions.

b. A patio home subdivision shall contain no less than 4 lots.

DIVISION 5. TWO-FAMILY DWELLING (DUPLEX) SUBDIVISIONS.

Section 1. Streets and other public ways.

a. Interior streets shall have a minimum right-of-way width of sixty feet (60') and shall be developed with a minimum of a twenty-seven foot (27') paving section with concrete curb and gutters in accordance with current design standards.

Section 2. Lots.

a. Lot area shall be a minimum of ninety-six hundred (9,600) square feet.

b. Lot width shall be a minimum of eighty feet (80').

c. Front and side street and interior building lines shall meet the same requirements as for single-family lots.

Deed restrictions must provide that: "No autos, trucks, boats, campers, other trailers, or vehicles of any kind shall ever be left parked on the grass or yard except as provided for in paved off-street parking space and then only as temporary parking incident to the contemporaneous use of such vehicle or object, nor shall same be left parked on any lot unless parked inside a garage."

Section 3. Parking.

Each dwelling unit shall have constructed and maintained thereon a minimum two (2) car garage in addition to two (2) on-street parking spaces. For the purpose of this subsection.

For the purpose of this section, the minimum dimensions of each parking space shall be 9 feet by 20

feet; provided, however two (2) spaces adjacent to the other shall not be less than 18 feet by 20 feet if side by side, and not less than 12 feet by 40 feet if aligned linearly.

Section 4. Utilities.

All utilities such as sanitary sewer, water, gas, telephone, television cable, and electrical service shall be placed underground.

Section 5. Other requirements.

a. A duplex subdivision shall meet all requirements of this Ordinance, the provisions of this division being variations permitted especially for duplex subdivisions.

b. Density – In a duplex development, there shall be no more than eight (8) dwelling units per platted acre including all roadways.

DIVISION 6. MULTI-FAMILY RESIDENTIAL (APARTMENTS).

Section 1. Application Requirements.

a. In addition to the information otherwise required to be submitted for a land plan, a land plan that provides for the development of one or more multi-family residential buildings shall provide the following information:

    1. The number of separate buildings that will contain multi-family residential dwellings units;

    2. The location of the principal entrance to each multi-family residential building;

    3. The total number of dwelling units;

    4. An itemized listing of multi-family residential dwelling units indicating the number of bedrooms in each dwelling unit.

Section 2. Private streets – general standards.

a. A development plat that contains a multi-family residential building shall provide at least one private street. The private street shall remain clear at all times for emergency vehicle access. No parking shall be allowed within the private street. A private street shall comply with the requirements of this section:

1. The minimum right-of-way width for a private street shall be twenty-seven feet (27'), which is coterminous with the pavement width measured from inside of curb to inside of curb across the surface of the pavement.

2. When a private street intersects with another private street at a ninety (90) degree angle, the private street shall provide a twenty-five (25) foot radius at the intersection. When a private street intersects with another private street at an angle less than ninety (90) degrees, but more than eighty (80) degrees, the private street shall provide a twenty-five (25) foot radius at the intersection.

3. The centerline radius of a reverse curve on a private street shall not be less than sixty-five (65) feet. Reverse curves shall be separated by a tangent of not less than twenty-five (25) feet.

Section 3. Parking.

Each development plat containing a multi-family residential development shall provide off-street, on-site parking spaces in accordance with the following schedule:

Unit Size	Parking Spaces Required Per Unit
Efficiency	2.0
One bedroom	2.0
Two bedrooms	3.0
Three or more bedrooms	3.0

In addition to the above on-site parking for each unit, there shall be designated a parking lot for visitors with a minimum of two (2) parking spots per unit.

Section 4. Height and area regulations.

a. Each multi-family dwelling building shall be limited to not more than seven thousand (7,000) square feet per floor. Multi-family dwelling buildings shall be limited to two (2) floors and shall not exceed thirty (30) feet in height above finished grade. Each building shall be separate and separated by distances as stated in subsection (c) of this Section.

b. Access must be provided around the entire perimeter of all multi-family development for emergency vehicles, including fire trucks, police cars, ambulances and garbage trucks. This access area must be paved and have a width of at least twenty (20) feet. Multi-family developments with less than ten (10) multi-family dwelling units are exempt from this requirement. Multi-family developments may not be developed in stages or phases to circumvent this requirement.

c. Each building within a multi-family dwelling development shall have a minimum thirty (30) foot setback from property line when adjacent to single family residential lots and or commercial a lot.

d. Enclosed courtyards shall not be less than forty (40) feet in depth, width, or length.

e. Building lines. The following minimum building lines shall be required for lots or tracts containing multi-family dwelling buildings, measured from the applicable property line; provided, however, if the lot is encumbered with a street right-of-way, such building line shall be measured from the boundary line of such street right-of-way:

1. Front yard. The front yard building line shall not be less than thirty-five (35) feet.

2. Side yard, interior. The interior side yard building line shall be not less than (a) thirty (30) feet if a one-story multi-family dwelling building (not to exceed fifteen (15) feet in height) is to be constructed; or (b) fifty (50) feet if a two-story multi-family dwelling building (not to exceed thirty (30) feet in height) is to be constructed.

3. Side yard, street. The side building line adjacent to a street shall be not less than thirty (30) feet, except that where the side yard is adjacent to a collector street or major thoroughfare such building line shall be not less than thirty-five (35) feet.

4. Rear yard; interior; alleyways. The rear building line shall be not less than (a) thirty (30) feet if a one-story multi-family dwelling building (not to exceed fifteen (15) feet in height) is to be constructed; or (b) fifty (50) feet if a two-story multi-family dwelling building (not to exceed thirty (30) feet in height) is to be constructed. Provided, however, where the rear property line abuts an alleyway, there shall be a minimum of thirty (30) feet between the buildings abutting said alleyway.

5. Rear yard, major street. A rear building line adjacent to a collector street or a major thoroughfare shall be not less than thirty (30) feet.

f. No multi-family dwelling development shall contain more than fourteen (14) units per net platted acre. The net platted acreage shall be the total platted acreage of the development, less any acreage occupied by lakes or ponds, irrigation canals or drainage canals. For a development with one-story multi-family dwelling buildings the density shall not exceed seven (7) dwelling units per net platted acre. For a development with two-story or a combination of one and two-story multi-family dwelling buildings the density shall not exceed fourteen (14) dwelling units per net platted acre.

g. Screening. The following screening requirements shall apply to multi-family dwelling developments:

1. All refuse containers shall be screened;

2. An eight-foot (8) tall decorative masonry wall shall be constructed on the sides and rear of any multi-family dwelling development;

3. For security purposes, structurally sound gates complying with applicable codes shall be placed at all entrances to multi-family dwelling developments in a manner sufficient to restrict access to residents and authorized visitors. Master codes to the gates shall be provided to police, fire and EMS emergency services and police routine patrol for unrestricted access; and

4. On-site management shall be present at all times.

h. All multi-family dwelling buildings shall be constructed using one-hour fire-resistive materials in all walls, floors, ceilings, and attic separations, and shall contain a fire sprinkler system on all floors.

i. The use of wood shingle roofing and cedar shake siding materials is prohibited.

j. There shall be no more than fourteen (14) dwelling units per net platted acre. The net platted acreage shall be the total platted acreage of the plat, less any acreage occupied by:

1. lakes or ponds (including but not limited to detention ponds)

2. irrigation canals or drainage canals

3. public uses, or

4. utility easements

Section 5. Open space.

a. Except as otherwise provided in this section, each multi-family residential development shall provide open space in accordance with the following schedule:

Dwelling Unit Size	Square Feet of Open Space Required Per Dwelling Unit
Efficiency	200
One bedroom	240
Two bedrooms	320
Three bedrooms	440
Four bedrooms	500

For purposes of this section, 'open space' shall mean land within the development plat boundary that is not covered by buildings, covered walkways, parking spaces, private streets or driveways.

b. In lieu of the requirements of subsection (a), a multi-family residential development may provide for open space by complying with each of the following conditions:

1. At least ten percent of the total land area in the multi-family residential development, exclusive of land within the building line requirement area, shall be provided as open space;

2. Enclosed amenities, such as an exercise or game room, shall constitute no more than 10 percent of the open space provided;

3. Each area provided as open space is at least 20 feet wide by 60 feet long; and

4. The development plat provides for the construction of sidewalks that are a minimum of five feet in width within the right-of-way of each street that is adjacent to the development;

Section 6. Utilities.

All utilities such as sanitary sewer, water, gas, telephone, television cable, and electrical service shall be placed underground.

DIVISION 7. PRIVATE PARK LAND, AMENITIES AND OPEN SPACES

Section 1. Amenities.

a. All multi-family dwelling developments shall provide at least three (3) of the following amenity items:

1. Tennis courts (minimum two (2));

2. Swimming pool;

3. Recreation/community center or room;

4. Basketball court (full court);

5. Fitness center; or

6. Playground area.

A basketball court or tennis court shall not occupy the same space to be counted as separate amenities.

b. **Open Space for parkland.** General requirements for land to be used for single family, patio homes, townhouses, condominiums, duplex and/or multiple family residential purposes.

1. Whenever a final plat is filed of record with the County Clerk of Waller County for development of a residential area in accordance with the platting regulations of the City, such plat shall contain open space land for private park purposes for those that live in the development so that they may engage in active and passive recreational activities within or near the development. The dedication of an area of land for park purposes shall equal one (1) acre for each one hundred (100) proposed dwelling units, based on the proposed subdivision or development in its entirety and not by sections or phases.

2. Any proposed plat submitted to the City for approval shall show the dedicated park area. The dedication required by this section must be within the same neighborhood as shown on the plat.

3. The dedication required by this section shall be made by filing of the final plat or contemporaneously by separate instrument unless additional dedication is required subsequent to the filing of the final plat. If the actual number of completed dwelling units exceeds the figure upon which the original dedication was based, additional park land may be required.

c. Provision of private park land in lieu of a dedication of land.

1. A developer responsible for dedication of land under this section shall meet one hundred (100) percent of the requirements of area of land for park purposes, which shall equal one (1) acre for each one hundred (100) proposed dwelling units by the provision of private park land, based on the proposed subdivision development in its entirety and not by sections or phases. Credit for private park land will be governed by the following criteria:

i. The land offered as private neighborhood park land must be open and accessible to all residents of the platted subdivision. Land or facilities that are excluded to a portion of the subdivision residents shall not be considered as private park land.

ii. Land which is unencumbered by easements, detention areas, lakes and drainage channels, including lake and drainage channel borders, or similar characteristics will qualify for private neighborhood park land at a 1:1 ratio (unencumbered private park area: park land dedication required) up to the full one hundred (100) percent credit. Land which has recreational facilities on it such as tennis courts, swimming pools, playing fields, recreation buildings, etc., will also qualify at a 1:1 ratio up to the full one hundred (100) percent credit.

iii. Land which is encumbered by private easements, detention areas, lake and

drainage channel borders, or other similar characteristics will qualify for private neighborhood park land in accordance with the following calculations. Twenty-five (25) percent of the encumbered private park land will qualify for private neighborhood parks (0.25:1 ratio). Additional conditions apply to encumbered park land, including:

a) Detention areas shall have (a) side slopes of a 4:1 ratio unless otherwise approved by the City, (b) gravity flow or a pumped system, (c) a bottom with a minimum area of five thousand (5,000) square feet unless otherwise approved by the City, and (d) field areas with a crowned design and perimeter swale suitable for field sports. At least one (1) accessible route shall meet minimum requirements of the Americans with Disabilities Act (ADA).

b) Drainage ditches and lake borders shall have (a) side slopes of a 3:1 ratio unless otherwise approved by the City, (b) hike/bike all weather paths, landscaping and sodding installed according to the construction standards of the City, (c) an average minimum width of thirty (30) feet and a minimum width of twenty (20) feet from top of bank, and (d) drainage ditches and lake borders with meandering, natural contour appearances.

c) Ten (10) percent of lakes and nature reserves or land which is generally undeveloped and unsuitable for organized recreational activities without substantial development effort, but which provides desirable aesthetic qualities, such as wetlands and other wooded areas, will qualify for private neighborhood park land (0.10:1 ratio).

2. Maintenance responsibilities for private neighborhood park land shall be guaranteed in perpetuity by a Homeowners' Association or other acceptable organization created by an instrument accompanying submission of a preliminary plat and recorded with the final plat. The City has the right to accept or reject the assurance of maintenance. The City shall not be responsible for maintenance of private park land.

3. A list of landscaping and other improvements of special uses planned for park areas shall be submitted with the general plan, preliminary plat and filed with the final plat.

d. Additional Requirements

1. Parks should be easy to access and open to public view so as to benefit area development, enhance the visual character of the City, protect public safety, and minimize conflict with adjacent land uses. Any private park land dedicated under this subsection must be suitable for park, greenway, and recreation uses.

2. Consideration will be given to land that is in the floodplain or may be subject to

flooding even though not in a federally regulated floodplain as long as, due to its elevation, it is suitable for park improvements.

3. Park sites should be adjacent to residential areas in a manner that serves the greatest number of users.

4. Sites should not be severely sloping or have unusual topography that would render the land unusable for organized recreational activities.

5. Sites should be located adjacent to a greenbelt system, where possible, so that connections to a trail network may be easily achieved.

6. Where physically feasible, park sites should be located adjacent to schools in order to encourage both shared facilities and the potential co- development of new sites.

7. Sites should retain existing trees or other scenic elements, where possible.

8. A proposed subdivision adjacent to a park may not be designed to restrict reasonable access to the park from other area subdivisions. Street connections to existing or future adjoining subdivisions may be required to provide reasonable access to parks.

9. Where a non-residential use must directly abut a park, the use must be separated by a screening wall or fence and landscaping. Access points to the park from the non-residential use may be allowed by the City if a public benefit is established.

Section 2. School sites.

School sites for public schools shall be coordinated with the appropriate school district within whose jurisdiction the plat lies.

Section 3. Public facilities.

Public facilities such as fire stations, libraries, municipal and county buildings, and municipal utility district operations shall be platted or contained within a plat. The location of these facilities shall be coordinated with the applicable governing body and in compliance with the comprehensive plan of the City.

Section 4. Wetlands.

If there are any areas previously designated which constitute wetlands by federal law, these areas shall be indicated on the plat and any restrictions on these areas shall be noted on the plat.

DIVISION 8. DRIVEWAYS

a. The location and width of all driveways that will connect to a public street must be reviewed and approved by the City prior to construction and may be required to be identified at the time of platting, prior to the submission of a building permit, or at the time a land plan or site plan is submitted. This includes replats where relocating or shared access may be required or denial of an additional driveway on the newly formed lot. It is the City's policy to minimize whenever practical the number of non-single family residential driveways on all arterial and collector streets in order to reduce the number of conflict points and facilitate traffic flow. To facilitate that policy, driveways shall be placed no closer than the following distances from adjacent streets and driveways (measured from the turn radius at the curb line to the nearest turn radius at the curb line). More than one driveway may be allowed as long as it meets the following criteria:

Roadway Classification	**Minimum Separation**
Highways	200 ft. or greater as determined by a Traffic Impact Analysis
Thoroughfare	165 ft.
Collectors	165 ft.
Local Streets	75 ft.

b. All driveways are required to first obtain a permit through the City. In addition, if the driveway is located on a state roadway, the City requires the applicant to obtain a driveway access permit from TX DOT. No permit from the City shall be released until a permit has been approved by TX DOT and delivered to the City. The City will adhere to the guidelines, rules adopted and approved by TX DOT on all TX DOT controlled roadways, unless lesser requirements can be demonstrated to the satisfaction of the City after approval of the City Council and recommendation of the Planning Commission. All applications for permits shall be filed with the City prior to seeking approval from TX DOT.

c. Residential – specific. No residential driveway shall be allowed on a major thoroughfare, without approval of the City Council and recommendation of the Planning Commission. If it is an existing lot, access will be allowed if there is no adjacent side street or rear street in which safer access is available. When located on a major thoroughfare, if possible, a circle driveway will be designed in which the driveway width will be a minimum twenty feet wide, the driveway entrances are to be thirty feet (30') apart from outside turning radii at curb line, and turning radii at curb line shall be a minimum of twenty feet (20'). If not possible, every effort should be made to create space on the lot to provide a turnaround maneuver and turning radius at the curb line of twenty feet (20'). All other streets, residential driveways shall be a minimum of ten feet (10') wide at the right-of-way line with a turning radius of five (5) feet on local streets and ten (10) feet on collectors. No lot shall have more than one driveway (circle drive is considered two drives) unless it has at least one hundred (100) feet of frontage or the additional drive is on another street. Under no condition shall a single lot be allowed more than two drives unless it is approved by the Planning Commission and the lot has more

than two acres. No turn radius with the curb return shall extend beyond the property line of the property when extended in a straight line from the right-of-way to the curb line.

d. A traffic impact study may be required as a part of the approval process for driveways and other roadway access. A traffic impact analysis (TIA), when required, shall be prepared by an individual, group, firm or corporation having demonstrated professional emphasis and experience in transportation planning, engineering and in the preparation of similar analyses. The TIA document shall bear the seal and signature of a Texas Registered Professional Engineer.

1. Traffic impact analysis shall include the following information:

   i. Study purpose and objectives.

   ii. Description of the site and study area – to include entire property or master plan, not just portion submitted for building permit or plat approval.

   iii. Existing conditions in the area of the development.

   iv. Recorded or approved nearby development.

   v. Trip generation and trip distribution.

   vi. Projected future traffic volumes.

   vii. An assessment of the change in roadway operating conditions resulting from the development traffic.

   viii. Recommendations for site access and transportation improvements needed to maintain traffic flow to, from, within, and past the site at an acceptable and safe level of service.

2. Prior to preparation of a traffic impact analysis, the project engineer is required to meet with the City Engineer to identify the study area, define the area of influence, non-site impacts, and determine or define essential elements such as but not limited to study area, design year, trip generation rates, trip assignments, non-site traffic estimates, etc.

3. The analysis shall be presented in the following manner:

   i. Straightforward and in a logical sequence; step by step toward conclusions and identifying recommendations and alternatives.

   ii. It shall allow the reviewer to duplicate the calculations.

   iii. Recommendations shall specify the time period within which the improvements should be made, particularly if the improvements are associated with various phases of the development.

   iv. Recommendations shall also specify the time period for any monitoring of operating conditions.

   v. Data shall be presented in tables, graphs, maps, and diagrams wherever possible for clarity and ease of review.

vi. vi. A brief executive summary of one or two pages be provided, concisely summarizing the purpose, conclusions, recommendations, and alternatives.

e. Large speed differentials shall be minimized to prevent unsafe conditions. Every attempt should be made to have driveway designs that create no more than 20 mph maximum speed differential on roadways. Driveway approaches accessing major thoroughfares should be situated in a manner that minimizes the number of potential conflict points. Use of deceleration lanes, acceleration lanes, turning lanes, turning bays, shared driveways, access easements for adjoining properties, cross driveway easements (an easement allowing two or more properties to share a common drive(s).), traffic signals and traffic control devices, special lanes for pedestrians, crosswalks, medians and median markings, special signage, and other internal and external designs, signage, devices, markings, etc. shall be considered on all driveway requests.

f. Anyone planning on developing a site, parcel of land, or preparing a parcel of land or site for such shall be prepared to submit a driveway plan for the entire property. If the parcel to be platted is a portion of a larger tract, the City may require all driveways be identified or at a minimum the number, general location and access easements identified to allow joint use of driveway(s) located on separate tracts or parcels on the larger tract before the platting of the smaller tract or sub-parcel. A TIA may be required to take into consideration a larger section of roadway or other roadways other than the roadway immediately adjoining the tract(s) of land under consideration.

g. An individual may be required to negotiate driveway access on an adjacent property prior to or instead of being granted a driveway access on a tract or parcel of land.

h. Driveways serving non-residential and multi-family tracts that connect to a street classified as a thoroughfare or collector street or has a speed limit exceeding 35 mph must be thirty-five (35) feet wide at the right-of-way line. Non-residential and multi-family tracts fronting on all other streets shall be twenty-five (25) to thirty-five (35) feet wide at the right-of-way line.

i. It is the City's policy to minimize whenever practical the number of non-single family residential driveways on all arterial and collector streets in order to reduce the number of conflict points and facilitate traffic flow.

j. If the separation requirements for non-single family residential driveways cannot be met because of the location of existing driveways on adjoining tracts, joint access driveways, access easements, or cross driveway easements, across adjoining tracts should be used. When minimum separation requirements cannot be met with the existing private driveway on the adjacent property and joint access cannot be obtained, the controlling factor shall be to maximize the distance between the subject property's private driveway and the public cross street.

k. If the requirements for driveways otherwise allow the placement of a driveway within the area due to size or a TIA, then the driveway width must match the cross-section of the intersection public street and be properly aligned. Non-residential driveway connections to the public street shall be approved and inspected by the City.

l. No turn radius with the curb return shall extend beyond the property line of the property when extended in a straight line from the right-of-way to the curb line.

m. Driveways shall be located and designed so as to have adequate sight distances along the intersecting street.

DIVISION 9. DESIGN STANDARDS FOR SINGLE-FAMILY SUBDIVISIONS

The following additional design standards shall apply to single-family subdivisions

Section 1. Parkland

a. A minimum of one (1) acre of parkland shall be set aside per 100 dwelling units or portion thereof.

b. Parkland shall be landscaped and shall contain recreational facilities such as recreation centers, pools, playgrounds, sidewalks, and/or trails.

c. Floodplain, easement, and detention areas shall qualify as parkland at a rate of 50% provided they are amenitized with landscaping and sidewalks or trails.

d. A homeowners' association or municipal utility district shall be established to own and maintain the parkland.

e. The City may opt to accept fees in lieu of parkland at a rate of $1,000 per dwelling unit of parkland not set aside. The fees shall be expended in new or existing City parks to meet the recreational demands created by new single-family subdivisions.

Section 2. Subdivision Perimeter

a. All lots in a subdivision abutting a collector street or major thoroughfare shall have, on that portion of the lot abutting a collector or major thoroughfare, a masonry fence not less than six (6) feet in height.

b. Along collector streets and major thoroughfares in a subdivision, one (1) tree shall be located per fifty (50) feet of frontage. Trees shall be one or more of the following types.

Botanical Name	Common Name
Quercus falcata, Quercus texana	Southern Red Oak
Quercus Virginiana	Live Oak
Quercus natallii	Nuttall Oak
Quercus Nigra	Water Oak
Quercus macrocarpa	Bur Oak
Quercus shumardii	Schumard Oak
Ulmus crassifolia	Cedar Elm
Ulmus Parvifolia	Drake Elm
Carya Illinoinensis	Pecan
Taxodium distichum	Bald Cypress
Liriodendron tulipifera	Tulip Tree

Acer rubrum	Red Maple
Platanus mexicana	Mexican Sycamore

c. Growspace requirement—Minimum of 1,600 total square feet with minimum narrowest width of 16 feet. (Growspace shall mean an area capable of supporting tree establishment and growth and shall contain soil that has not been stabilized, or compacted to a point where water infiltration rates fall below 3.0 inches/hour. Growspace shall not include street, sidewalk, parking lot or other hardscape. Each growspace shall include no more than one (1) tree).

d. Minimum spacing between trees planted—30 feet on center

e. Minimum distance from back of curb and sidewalk—8 feet

f. Reinforced concrete sidewalks a minimum of five (5) feet in width shall be located along all collector streets and major thoroughfares abutting a single-family subdivision.

g. Single-family subdivision entry monument signage shall be:

i. A maximum of six (6) feet in height;

ii. A maximum of 60 square feet in area;

iii. Set back a minimum of ten (10) feet from the street pavement; and

iv. Not more than one (1) single-family subdivision entry monument sign for every 200 feet of street frontage.

Section 3. Points of access.

Single-family residential subdivisions, including patio home and townhouse subdivisions, shall have an adequate number of access points to provide for an orderly and safe movement of vehicular traffic. The minimum number of points of access from said subdivisions shall be as follows:

f. Subdivisions with fifty (50) or fewer lots - One (1) point of access.

g. Subdivisions with fifty-one (51) to one hundred twenty-five (125) lots-Two (2) points of access, or one (1) point of access if that access is via a boulevard street section with no lots having direct access to the divided boulevard street section serving as said access.

h. Subdivisions with one hundred twenty-six (126) to two hundred fifty (250) lots- Two (2) points of access, with at least one (1) point of access via a boulevard street section of at least one hundred twenty (120) feet in length (end of median to end of median), with no lots having direct access to the boulevard street section serving as said access, and at least one (1) point of access being directly to a collector or major thoroughfare.

i. Subdivisions with more than two hundred fifty-one (251) lots-The number of access points shall be determined by the City; however, there must be at least two (2) points of access, with at least one (1) point of access via a boulevard street section of at least one hundred twenty (120) feet in length (end of median to end of median), with no lots having direct access to the boulevard street section serving as said access, and at least one (1) point of access being directly to a collector or major thoroughfare.

j. For the purposes of this subsection, a boulevard street shall mean a divided four- lane street with a minimum fifteen-foot wide median and minimum eighty-foot right-of-way.

Section 4. Planned Development (PD).

Alternative standards to these Design Standards may be proposed as part of a PD, subject to the approval of the governing body of the City. The intent of a PD is to allow flexibility from the standards if it can be demonstrated it will result in a unique and superior development to what the minimum standards would require. It is anticipated that a PD would have some more flexible standards, and some stricter standards, than what would otherwise be required in order to meet the intent of a PD.

Section 5. Municipal Utility Districts (MUDs)

In accordance with State law, creation of a MUD in the City limits or Extraterritorial Jurisdiction (ETJ) shall require the consent of the City.

Upon application for consent to the creation of a MUD, the owner or the developer of the land within the proposed MUD shall deposit with the City the sum of ten thousand dollars ($10,000) to reimburse the City for all fiscal, legal, and engineering fees and expenses incurred by it relating to the MUD.

ARTICLE IV. ENGINEERING DESIGN STANDARDS AND PLAT NOTATIONS

DIVISION 1. ENGINEERING DESIGN STANDARDS

Section 1. Improvement Plans.

a. The Developer shall employ a Texas Professional Engineer to prepare the "Improvement Plans" in conformance with these regulations. Utility companies and other affected public agencies should be consulted before plans are prepared. Improvement Plans shall be submitted to the City Engineer for approval prior to construction.

b. Construction Drawings: Two (2) white background prints of the drawings shall be submitted, and the sheet size shall be 22" x 34". Construction Drawings and approvals of Construction Drawings shall be valid and binding for one year. The drawings shall be referenced to the name and unit number of the proposed subdivision, shall show elevations based on mean sea level datum plan, and shall be in compliance with the following information:

1. Street Plan Profile: The plan of each proposed street (indicating the existing ground elevations and proposed street grade surface including existing street grade for a distance of one hundred feet (100') beyond the tract boundary), at a scale of not more than twenty feet (20') per inch.

2. Street Typical Sections: A typical section of each proposed street if all are not the same, not to scale, but having horizontal and vertical measurements showing width of proposed stabilization, base, wearing surface, curbs, shoulders, ditches, etc.

3. Water Supply and Sanitary Sewer System: The plans and profiles proposed and existing water distribution systems and sanitary sewer if submitted to the required State agencies for approval, shall be submitted to the City Engineer's Office to be approved by the City Engineer prior to commencement of construction.

4. Drainage: The size, location and typical sections of drainage ditches (or storm sewer, if used) including easements shall be shown. All drainage plans, profiles and computations shall be submitted to the City Engineer's Office for approval by the City Engineer prior to construction.

5. Existing Utilities: Plans and profiles of existing utilities shall be shown where applicable.

6. Bench Marks: Shall be provided at convenient points, with description, location and Mean Sea Level elevations indicated on the improvement plans. Tie to FEMA Benchmarks.

Section 2. Lots, tracts, reserves.

i. Lots, tracts and reserves within the City, shall conform to the following minimum requirements:

1. Each residential lot, tract or reserve shall front on and have access from a dedicated public street. Any residential lot, tract or reserve having access only from an alleyway, easement or any right-of-way other than a dedicated public street shall not be permitted. No residential lot shall have access to a major thoroughfare or collector street. A variance will be considered if no other access is available.

2. The width of the lot shall be measured along the front of the lot right of way line. The width of cul-de-sacs and radial lots shall be measured along the right of way line of the building line using the chord or straight line.

3. The depth of the lot shall be measured as an average between the side lot lines from the property-line/right-of-way.

4. A lot area size shall be computed inclusive of all easements. There shall be a minimum buildable area, exclusive of easements, for each lot to meet the

requirements set forth herein.

5. Corner lots shall be increased in size whenever necessary so as to provide that any structure to be placed thereon shall conform to the building line requirements of each street.

6. No lots may be split by any jurisdictional boundary lines.

Section 3. Building lines or setbacks - single family, townhomes, patio homes, duplexes.

a. Building lines or setbacks shall include eaves and appurtenances when calculating the building lines or setbacks. Building lines or setback lines shall be established for all single-family and multi-family residential lots and so indicated on all subdivision plats as stipulated below:

1. Corner lots. The setback lines for corner lots shall be as follows:

i. A minimum building setback of twenty-five feet (25') shall be provided on the front and fifteen feet (15') on the side of all corner lots where such lots side upon minor streets.

ii. A minimum building setback of twenty-five feet (25') shall be provided on the front and twenty feet (20') on the side of all corner lots where such lots side upon collector streets.

iii. A minimum building setback of twenty-five feet (25') shall be provided on the front of major thoroughfares and twenty-five feet (25') on the side of all corner lots where such lots side upon major thoroughfares.

iv. A minimum building setback of twenty feet (20') shall be provided on the front for a cul-de-sac.

2. Interior lots. The setback lines for interior lots shall be as follows:

i. A minimum building setback of twenty-five feet (25') shall be provided on the front of all interior lots and a minimum setback of five feet (5') on the side for interior lots.

ii. A minimum building setback of twenty feet (20') shall be provided on the front for a cul-de-sac.

Section 4. Street Alignments.

a. Streets shall be laid out so as to align with existing streets in adjoining or nearby subdivisions, leaving the possibility of connecting the subdivisions with a minimum of street construction.

No voids shall be left within the subdivision with the intent of avoiding responsibility for constructing streets or bridges, nor along the subdivision boundary to avoid connecting with adjacent subdivisions or streets. Arterials shall be placed and designed in accordance with any arterial street plan that contains the subdivision. Collectors will be placed in accordance with the plan of the City Thoroughfare Plan and the City Engineer.

b. Maximum block length shall be based on the average lot size fronting on the subject street in accordance with the following:

Average Lot Size Not Greater Than (Ac.)	Block Length Length (Ft.)
0.5	1,500
1.0	1,500
2.0	1,500
5.0	2,000
10.0	2,500
20.0	3,500
40.0	5,000

c. Dead-end streets which end at property that may be developed may remain as Dead End streets, but must be extended to the property lines. Dead End streets which shall remain as Dead End streets shall end on a temporary cul-de-sac with a minimum radius of right of way 70 feet (minimum base 50 foot radius) with Dead End street signs placed on these streets.

d. The City may require an internal street system that minimizes street cuts to existing City streets.

Section 5. Minimum Street Requirements.

Arterial streets shall be designed as follows:

1. If the arterial is included in the transportation plan, the right of way and pavement shall be as required in the plan.

2. The minimum right of way (easement) shall be 100 feet.

3. The pavement cross section in an urban subdivision shall be two 24-foot travel-ways with a 19-foot median.

4. A minimum centerline radius of 2,000 feet shall be used.

Collector streets shall be designed as follows:

1. If the collector is included in a transportation plan, the right of way and pavement cross section shall be as required in the plan.

2. The minimum right of way (easement) shall be 80 feet.

3. The pavement cross section in a rural subdivision shall be 28 feet of paved surface travel-way.

4. The pavement cross section in an urban subdivision shall be a 36-foot paved travel-way.

5. The minimum design speed shall be 45 MPH. A minimum centerline radius of 850 feet shall be used.

Local streets shall be designed as follows:

1. The minimum right of way (easement) shall be 70 feet in a rural subdivision and 60 feet in an urban subdivision.

2. The pavement cross section in a rural subdivision shall be 22 feet of paved surface travel-way, or 28 feet back of curb to back of curb.

3. The pavement cross section in an urban subdivision shall be a 28 feet, back of curb to back of curb.

4. Cul-de-sacs shall have a minimum right of way of 70 feet (radius) with a rural paving section of 50-foot radius paved travel-way, or a 50-foot radius to back of curb.

5. The minimum design speed shall be 35 MPH. A minimum centerline radius of 350 feet shall be used.

The following standards apply to all streets:

1. Concrete streets with curbs shall have a back of curb to back of curb width equal to those sections with curb and gutter sections.

2. Concrete Curb and gutter sections where used with non-concrete pavement shall be a minimum of 24 inches in width.

Additional Right of Way for Existing Streets

1. Where the subdivision affects a City street, the City Council shall determine the width which will be necessary for the maintenance and improvement of the street.

2. Where the subdivision affects only one side of a City street, adequate right of way shall be provided to obtain one-half the total proposed width to provide right of way as prescribed by City Council.

3. Where the development is on both sides of the existing County street, right of way for

the total prescribed width shall be provided.

4. Any improvements proposed by the developer along an existing City streets shall:

   i. Be included in the construction plans as approved by the City Engineer; and

   ii. Where it is an improved facility, it must be equal to the existing street, in the sole discretion of the City Council.

Unless otherwise stated in these regulations, all streets shall be designed in accordance with the latest version of AASHTO (American Association of State Highway and Transportation Officials) "A Policy on Geometric Design of Highways and Streets". All references to "mountainous terrain" shall not apply to the City of Pattison.

Private streets shall be allowed at the discretion of the City Council. Private streets shall be constructed to City standards in all matters. The City shall not be obligated in the future to accept any private street into the City road maintenance system.

Section 6. Parking. Single family lots.

Each lot used for single family detached dwelling, including townhomes, patio homes and duplexes shall have constructed and maintained thereon a minimum two (2) car garage in addition to a minimum of two (2) on street parking spaces. For the purpose of this subsection, the first two (2) car garage parking spaces contained shall not be considered as on street parking spaces. For example, if a dwelling has a three (3) car garage, two (2) additional on street parking spaces would be required in addition to that included within the garage.

For the purpose of this section, the minimum dimensions of each parking space shall be 9 feet by 20 feet; provided, however two spaces adjacent to the other shall not be less than 18 feet by 20 feet if side by side, and not less than 12 feet by 40 feet if aligned linearly.

Section 7. Building lines - commercial, industrial lots.

Building lines or setback lines shall be established for all commercial and industrial lots and indicated on all subdivision plats as stipulated below:

1. Corner lots. The setback lines for corner lots shall be as follows:

   i. A minimum building setback of thirty feet (30') shall be provided on the front and fifteen feet (15') on the side of all corner lots that side upon local streets.

   ii. A minimum building setback of thirty (30') shall be provided on the front and twenty feet (20') on the side of all corner lots that side upon collector streets.

   iii. A minimum building setback of thirty-five feet (35') shall be provided on the

front and twenty-five feet (25') on the side of all corner lots that side upon arterial streets.

2. Interior lots. A minimum building setback of twenty-five feet (25') shall be provided on the front of all interior lots that front upon minor, and secondary streets. In addition, setback requirements for interior lot lines shall be established in accordance with the most recently adopted version of the standard building codes. However, interior lots shall not be less than ten feet (10').

Section 8. Construction: General.

a. A preconstruction meeting shall be scheduled prior to the start of construction. The Design Engineer, Developer, Contractor, Subcontractors and City Engineer or his designated representative shall attend this meeting. All streets are to be constructed according to specifications found in the current version of the TxDOT Manual Standard Specifications for Construction of Highways, Streets, and Bridges unless otherwise stated in these standards.

b. All streets and concrete structures shall be tested by an Independent Testing Laboratory. The subgrade will be tested for Plasticity Index (PI), percent of lime if lime is added, and compaction. Each base course will be tested for compaction and depth. The two course surface treatment will have certification of distribution of AC-5 or HFRS-2 asphalt and of the cover stone. The HMAC course will be tested for compaction and depth. All compaction test reports will include a copy of the work sheet showing 100% Design Proctor Standard. Pavement concrete will be tested for Compressive strength. A test specimen will be taken at intervals no greater than 500 feet. The developer shall pay for all testing and will furnish the City Engineer's Office with certified copies of these tests.

c. All underground nonferrous utilities within an easement or street must be accompanied by ferrous metal lines to aid in the location of the utilities through the use of a metal detector except for electrical lines.

d. All pavement to be designed by a professional engineer. The design is to be based upon a soil report of samples taken along the proposed streets. Test holes will be placed at a maximum spacing of 1000 feet of proposed roadway. The City Engineer shall review the report along with the street and drainage construction plans for the subdivision.

e. Iron Rods and caps shall be placed at all points of curvatures and tangencies for all rural streets.

Section 9. Subgrade.

a. The preparation of the subgrade shall follow good engineering practices as directed by the Design Engineer. When the P.I. is greater than 20, then a sufficient amount of lime shall be in accordance with TxDOT Item 260 – Lime Treatment For Materials Used As Subgrade (Road Mixed) and Item 264 Lime and Lime Slurry until the P.I. is less than 20. Subgrades such as sand, with low plasticity (P.I. less than 5) shall be cement stabilized. The subgrade will be

prepared and compacted to 95% Standard Proctor density. The subgrade shall be watered, rolled and bladed to a depth of 6 inches before any flexible base material is placed on it.

b. The subgrade must be inspected and approved by an Independent Testing Laboratory and a certified copy given to the City Engineer's Office.

c. The subgrade shall extend 24 inches outside of the base width on each side of the base material.

Section 10. Base Material.

a. Base material shall conform to TxDOT Item 247 "Flexible Base". The base material shall be Type A Grade 2.

b. The base will be prepared and compacted to 95% Standard Proctor Density, +1- 2% optimum moisture. The base must be inspected and approved by an Independent Testing Laboratory and a certified copy of all tests given to the City Engineer's Office for approval. All streets must have a flexible base. The flexible base shall have a minimum thickness of eight (8) inches after compaction of the authorized base material on local streets and a minimum thickness of eight (8) inches after compaction of the authorized base on collector and arterial streets.

c. The base shall extend 24 inches outside the paving width on each side of the pavement material.

Section 11. Wearing Surface.

a. Urban streets require a minimum 2" layer of HMAC Type D. Compact to 95% Standard Proctor density. Aggregate used in the mix shall be on the TxDOT Quality Monitoring Schedule. The City Engineer's Office shall be provided with a copy of the HMAC design.

b. Rural streets require a minimum 2" layer of HMAC Type D. Compact to 95% Standard Proctor density. Aggregate used in the mix shall be on the TxDOT Quality Monitoring Schedule. The City Engineer's Office shall be provided with a copy of the HMAC design.

c. Paving material shall be applied only as directed in the TxDOT Manual.

d. The asphalt surface must be inspected and approved by an Independent Testing Laboratory and a certified copy given to the City Engineer's Office for approval by the City Engineer.

Section 12. Concrete.

a. Design Engineer shall determine class of concrete for each structure. Aggregate used in the mix shall be on the TxDOT Quality Monitoring Schedule. Batch design will be required for each class of concrete. Test specimens will be required for each 500 SY or a minimum of

cylinder for each class of concrete. For structural concrete, test cylinders will be required for each 50 CY. A slump test will be required for each set of test beams or cylinders. Air entraining and retarding agents used shall be from approved TxDOT list.

1. Fly ash is not allowed in the mix. Concrete pavement shall be a 5 ½ sack mix and a 28- day compressive strength of 3500 PSI. Structural concrete shall have a 28-day compressive strength of 4000 PSI.

b. Minimum pavement requirements shall be as follows:

1. Subgrade – in accordance with A9

2. Arterial Street – minimum thickness is eight (8) inches with #4 bars on 18- inch centers, each way.

3. Collector Street - minimum thickness is seven (7) inches with #4 bars on 18-inch centers, each way.

4. Local Street - minimum thickness is six (6) inches with #4 bars on 24-inch centers, each way.

5. All reinforcing steel shall be a minimum Grade 60, ASTM A615

Section 13. Street Names and Markers.

a. All streets to be dedicated to the public with a subdivision shall be named, with prior approval for the name from the 911 County System, and the City Council. The street names shall be displayed on standard intersection street markers erected by the Developer at each street intersection. All houses shall be numbered. Where rural route mail boxes are in use, the boxes shall be set behind curbs 3 ft. from the edge of the pavement when used. All mailboxes within County right of way shall meet the current TxDOT standards.

b. Traffic control signs (such as stop, yield, and speed limit signs) as approved by City Council, shall be installed by the Developer of the subdivision at all intersections. Other traffic control signs shall be installed to indicate any unusual traffic or street hazard or conditions that may exist. All traffic control devices shall be placed in compliance with the current standards of the TxDOT and the construction cost shall be included in the security. The placement of these signs shall be shown in the construction plans.

c. All of the requirements regarding street names, street signs and traffic control signs must be fulfilled prior to being accepted for final maintenance by the City Council.

d. All street signs shall adhere to the Texas Manual of Uniform Traffic Control Devices (TMUTCD).

Section 14. Driveways.

The use of concrete "dip type" driveways is encouraged. The maximum grade break at each vertical point of intersection shall be 15%. The proposed paving section shall match the paving section of the road, including thickness of concrete and subgrade. Concrete will be 3000 PSI with a minimum thickness of five inches. Minimum reinforcement shall be #3 at 18" on center each way (ocew)**.**

Section 15. Fire hydrants.

a. Fire hydrants shall have three-way nozzle arrangement, five and one-quarter-inch (5-1/4") compression type main valve, mechanical joint boot, and conform to the requirements of AWWA C502. The pumper nozzle shall be four and one-half inch (4-1/2") NST and the hose nozzles shall be two and one-half-inch (2-1/2") NST threads. Fire hydrants shall be listed on the Approved Water Products List found in Division 4 of these Standards.

b. Spacing - fire hydrants shall be spaced along all mains six inches (6") and larger as follows:

1. A maximum of five hundred-foot (500') spacing.
2. A maximum of three hundred-foot (300') spacing in commercial and industrial developments.

3. Fire hydrants should be set at street intersections.

c. Location - fire hydrants shall be located as follows:

1. Fire hydrants shall be located three feet (3') behind the back of curb or projected future curb and be set at the point of curvature (PC) of the intersection curb radius. A parallel tee may be used for a fire hydrant lead at the water main when specifically approved by the City.

2. On all State Highways and open-ditch roadways, set the fire hydrants or flushing valves within three feet (3') of the right-of-way.

   Fire hydrants located between right-of-way intersections should be set at a lot line, however, this location may be adjusted five feet (5') either way to miss driveways or other obstructions, in which case the fire hydrants should not be closer than three feet (3') from curbed driveways or five feet (5') from non-curbed driveways.

3. Fire hydrants may be located in the esplanade section of City streets only when it is not feasible to locate them between the right-of-way line and the back of the curb. In such case, it is preferable to locate the fire hydrants seven feet (7') behind the esplanade back of curb to provide access for parkway mowers; but in no instance shall

they be located closer than three feet (3') from the esplanade back of curb or five feet (5') from the esplanade edge of pavement.

4. All fire hydrants shall be located in protected, but easily accessible, areas behind the pavement.

Section 16. Pipelines.

a. Pipeline Crossing

1. When new streets are constructed over pipelines, the Developer must meet the following requirements:

i. All pipelines must comply with local, state, and federal development regulations and developer must provide documentation that pipelines are in compliance.

ii. Developer must provide documentation such as a "no-objection letter" from the pipeline operator and pipeline owner authorizing street construction over the pipeline(s).

iii. Developer must provide any and all agreements including easements, entered into with the pipeline operator or owner.

b. No street will be accepted for maintenance by the City of Pattison which contains a petroleum or gas pipeline within the right of way other than crossing pipelines. The exact horizontal and vertical location of pipe must be shown as determined in the field.

c. Nothing in this provision shall be construed as an assumption by the City of any responsibility of a pipeline operator or a pipeline not owned by the City.

DIVISION 2. --- PLAT NOTES

Section 1. Street Widening Easements.

Right of way easements for widening streets or improving drainage shall be maintained by the landowner until all street or drainage improvements are actually constructed on the property. The City has the right at any time to take possession of any street widening easement for construction, improvement or maintenance.

Section 2. Owner's Responsibilities.

a. The building of all streets, bridges or culverts is the responsibility of the owners in accordance

with the plans prescribed by the City Council. The City Council assumes no obligation to build or maintain any of the streets shown on the plat or constructing any of the bridges or drainage improvements. Upon completion of all obligations by the Developer and written approval from the City Council, the City will assume full responsibility for maintenance of the streets. The City will assume no responsibility for the drainage ways or easements in the subdivision, other than those draining or protecting the streets.

b. The City assumes no responsibility for the accuracy of representations by other parties on the plat. Flood plain data, in particular, may change depending on subsequent development.

c. The owners of land covered by this plat must install at their own expense all traffic control devices and signage that may be required before the streets in the subdivision have finally been accepted for maintenance by the City.

Section 3. Owner's Release.

The standard format for owner's approval of the plat restrictions and dedication of easements shall be as follows:

For Corporations (Face of Plat)

We, **(Name of President)** and **(Name of Secretary)**, President and Secretary respectively, of **(Name of Company)**, owner of the property subdivided, in this plat of **(Name of Subdivision)**, make subdivision of the property on behalf of the corporation, according to the lines, lots, building lines, streets, alleys, parks and easements as shown and dedicated for public use, the streets, all alleys, parks and easements shown, and waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alternation of the surface, or any portion of the streets or drainage easements to conform to the grades, and bind ourselves, our heirs successors and assigns to warrant and defend the title to the land so dedicated.

In Testimony, hereto, the **(Name of Company)**, has caused to be signed by **(Name of President)**, its President, attested by its Secretary, **(Name of Secretary)**, and its seal, this _____day of_____, 20___.

_____

Name of Company

By:_____
President

Attest:

Secretary

Notary Public (for

Corporation) STATE OF

TEXAS

}

COUNTY OF }

BEFORE ME, the under signed authority, on this day personally appeared **(Name of President),** President, and **(Name of Secretary)** Secretary of **(Name of Company)**, known to me, to be the persons whose names are subscribed to the foregoing instruments, and acknowledged to me that the same was the act of the corporation, for the purposes and considerations expressed, and in the capacities stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS _____DAY OF _____ 20___.

Notary Public

In and for_____County, Texas

For Individual(s) (Face of Plat)

I, (or we), (Name of owner or names of owners), owner, (or owners) of the property subdivided in the above map of the (Name of Subdivision), make subdivision of the property, according to the lines, streets, lots, alleys, parks, building lines and easement as shown, and dedicate for public use, the streets, alleys, parks and easements shown, forever, and waive all claims for damages occasioned by the establishment of grades, as approved for the streets and drainage easements indicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to the grades, and bind ourselves, our heirs, successors and assigns, to warrant and defend the title to the land so dedicated.

WITNESS MY (or our) hand in (City),_____, County, Texas, this

day of_____, 20_.

_____
(Signature of Owner)

_____
(Signature of Owner)

Notary Public [For

Individual(s)] STATE OF

TEXAS

}

COUNTY OF }

BEFORE ME, the undersigned authority, on this day personally appeared [Name(s) of Owner(s)], known to me to be the person(s), whose name(s) is (or are) subscribed to the foregoing instrument, and acknowledged to me that he (she) (they) executed it for the purposes and consideration set forth.

Given under my hand and seal of office, this____day of_____, 20___.

_____
Notary Public
in and For_____County, Texas

Section 4. Lien Holder's Release.

(The following phrase is to be included only if there is a lien against the property) (Face of Plat)

I (or we), [Name(s) of Mortgage(s)], Owner and Holder (or owners and holders) of a lien (or liens) against the above-described property, the lien (or liens), being evidenced by an Instrument of Record in Volume_ , Page_ , of the Mortgage Records of Waller County, Texas subordinate to the subdivision and dedication the lien (or liens), and I (or we) confirm that I am (or we are) the present owner (or owners) of the lien (or liens) and have not assigned the same, nor any part.

NOTE: All lienholder signatures shall be acknowledged by a Notary Public.

Section 5. Certificate of City Council.

APPROVED by City Council of City of Pattison, Texas, this_____day of_____, 20___.

_____ _____

Mayor Mayor pro tem

_____ _____

Council Member Council Member

_____ _____

Council Member Council Member

Section 6. Certificate of County Clerk.

(Face of Plat)

Provide box for County Clerk's Statement - 6 inches (right to left) and 2 inches (top to bottom), and adjacent to bottom margin

APPROVAL BY PLAT ROOM RECORDER (Face of Plat)

_____ _____

Date Plat Book Recorder

Volume_____, Page _____

Section 7. Certificate of County.

(If Subdivision is located within Extraterritorial Jurisdiction) (Face of Plat) The certificate must follow the County's regulations.

Section 8. Flood Plain Certification.

The following note shall appear on the face of the Plat, "Structures built on lots in the designated Flood Plain shall be elevated to one foot (1') above the Base Flood Elevation. No building permits will be issued in a Flood Hazard Area below the base flood elevation (B.F.E.). Contact the City Engineer's Office for specific information."

Section 9. Pipelines.

(Face of Plat)

Show all existing oil and gas pipe lines and/or plus pipe line easements or statement that: No pipe line or pipe line easement exist within the boundaries of this plat.

If pipe lines do exist within the proposed subdivision, written "crossing" approvals must be submitted from each owner.

Section 10. Additional Plat Notes and Releases.

a. CERTIFICATE OF SURVEYOR (Face of Plat)

This is to certify that I (Name), a Registered Professional Land Surveyor of the State of Texas, have platted the above subdivision from an actual survey on the ground; and that all block corners, lot corners and permanent referenced monuments have been set, that permanent control points will be set at completion of construction and that this plat correctly represents that survey made by me.

_____
Surveyor

State Registration No._ (Seal)

b. LEGAL DESCRIPTION (Face of Plat)

(Herein, provide a legal description [metes and bounds description] of the property platted, tied to an original corner of the original survey.)

c. CERTIFICATE OF CITY ENGINEER (Face of Plat)

I, (Name of City Engineer), City Engineer of City of Pattison, certify that the plat of this subdivision complies with all existing rules and regulations of City of Pattison.

_____ _____

Date City Engineer

d. CERTIFICATE(S) OF TAX COLLECTOR

(This document does not appear on the face of the Plat, but is a separate document. A Certificate from each Tax Collector of a Political Subdivision in which the property is located must accompany the Plat to be recorded, showing that all taxes owing to the State, County, School District, Drainage District and/or other Political Subdivision, have been paid in full to date.)

e. DRAINAGE DISTRICT APPROVAL (Face of Plat)

(If subject property lies within the boundaries of a Drainage District.)

_____ _____

Date (Commissioner)

_____

(Commissioner)

DIVISION 3. --- DRAINAGE CRITERIA MANUAL

Section 1. Introduction.

Purpose

This DRAINAGE CRITERIA MANUAL (the Manual) provides design guidance for use by developers and engineers in preparation of drainage plans for development within the unincorporated areas of City of Pattison. It establishes rules and regulations that must be consistently followed and will be enforced throughout the unincorporated areas of the County. The design methods presented in this manual are intended to provide guidance for determination of runoff rates; methods of storm water collection, conveyance, and detention; and design standards for facilities (ditches, ponds, detention basins, etc.).

Methods of design and analysis other than those included in this Manual may be considered in certain cases where there may be inherent problems with the traditional methods. However, any deviation from this Manual will require consideration and acceptance by the City Engineer before approval will be granted for any work based on these alternatives.

Policy

Due to the nature of the watershed hydraulics within City of Pattison and the prevalent existence of flood plains that exceed the banks of the creeks, it shall be the policy of City of Pattison to maintain zero net increase in storm water runoff rates and to ensure no negative impacts attributable to new development. Although it is City of Pattison's long-term goal to construct and maintain facilities (i.e., channels and regional detention facilities) that will contain 100-year storm flows within drainage rights-of-way, it is recognized that further impacts cannot be tolerated in the interim period. It is further recognized that impacts to other land owners and jurisdictions outside of City of Pattison's boundaries are unacceptable, and City of Pattison is dependent and supportive of the action of others to construct upstream and downstream facilities to accommodate 100-year flows.

Individual developers must provide infrastructure required to meet City of Pattison's stated objective of zero net increase in runoff rates and no negative impacts. Practically, this will mean that developers will provide adequate on-site detention volume to off-set increased runoff rates and must provide compensating storage volume for all fill placed in the floodplain. Development in the delineated 100-year floodway will be restricted by City of Pattison. City of Pattison prefers separate off-line detention facilities, but in-line facilities will be considered on a case-by-case basis and will only be approved after City of Pattison is satisfied that there will be no negative impacts to adjacent property owners.

City of Pattison recognizes that a portion of the City lies within the jurisdiction of the Brookshire-Katy Drainage District. A developer shall obtain approval from the District for all development projects within the District.

Section 2. Administration.

Submittal

City of Pattison has authority for review and approval of development plans for projects within its jurisdiction. Prior to commencing construction on proposed improvements, two (2) copies of plans, plats, reports, and calculations shall be submitted for review at least two weeks prior to the meeting at which the item will be considered. Proposed plats and plans shall be submitted for each development unless an overall master drainage plan for the development has been previously approved, in which case the applicant must demonstrate compliance with the approved master plan. All plans and reports must be prepared and sealed by a Professional Engineer licensed to practice in the State of Texas.

In addition, if the project is located within the Brookshire-Katy Drainage District, the Developer shall obtain written approval from the District of the development plans, and a copy of said approval shall be submitted to the City Engineer as a requirement of final plat approval.

Site Visit

City of Pattison may require a representative of the property owner or developer to meet with City of Pattison Representative at the project site prior to drainage plan approval. This meeting shall be for City of Pattison's benefit and allow the City of Pattison Engineer to better understand the

developer's intentions.

Datum

All topographic information shown on plans must be on the same vertical datum as the current FEMA FIRM Map showing the project area.

Drainage Plan Review

The drainage plan shall present the applicant's overall approach to collecting and conveying rainfall runoff to the appropriate drainage artery. It is recommended that prior to preparation of the plan a meeting be arranged between the applicant and the City of Pattison Engineer to discuss the proposed concept for drainage of the project. The design submittal shall contain the following items:

1. Name, address, and phone number of engineer that prepared the plan including contact person.
2. Scale of drawing with a minimum scale of 1"=100'.
3. Benchmark and reference benchmark with datum and year of adjustment.
4. A detailed location or vicinity map drawn to a scale. The project site shall be accurately located on the map.
5. Date on all submittals with date of all revisions with month, day, and year.
6. Signature lines for the City Engineer.
7. Contour lines at 1 foot where slopes do not exceed 2.0% and 5 foot intervals for slopes exceeding 2.0% intervals covering the entire development and extended beyond the development boundaries at least 50 feet on all sides. At least two contours are required for each project.
8. Preliminary scheme for the passage of sheet flow from adjacent properties.
9. Drainage area divides for project area, with peak run-off rates for each drainage area.
10. Locations of all planned drainage improvements proposed for moving run-off water from the development to the principle drainage artery, i.e., creek, stream, bayou, ditch etc., and their point(s) of entry into the drainage artery.
11. Points at which structures or pipelines will cross drainage ditches, streams etc., within the development.
12. Locations of structures or other physical features on the development area to provide orientation as required during field inspection of the site.
13. Location of all existing drainage structures, utility lines, pipelines, and other underground features on the property and adjacent rights-of-way.
14. Location and dimensions of all proposed drainage easements and rights-of-way.
15. Location of major drainage arteries adjacent to or crossing the development.
16. Cross-section of detention facility.
17. Detention calculations in accordance with SECTION VI including volumetric calculations of detention provided.
18. Drainage area map of receiving system, if discharging to existing storm sewer system. Drainage area of receiving channel if discharging to open ditch or stream. Include calculations to prove capacity is available.

19. Copy of approved permit from TxDOT if draining to or impacting their system.
20. Copies of documents and letters of request for permission to cross privately held easements or rights-of-way and their approvals to do so.
21. Limits of 100-year flood plain.

Drainage Plan Approval

The City of Pattison Engineer shall provide comments to the applicant as soon as possible after submittal.

At least twenty-one (21) working days prior to City of Pattison City Council's regularly scheduled meeting, revised plans/Reports addressing all comments must be submitted to the City of Pattison's Engineer. If all comments have been addressed, the plan will be placed on that agenda.

At the City Council's meeting at which drainage plan approval is being considered, the original and one (1) copy of the plan must be submitted (the original will be returned for inclusion in the construction plans).

Time Limits of Approvals

Approvals shall expire within one (1) year if a construction has not commenced within that time. In cases where approval is given for a master plan and only certain sections are built immediately, the master plan approval will be valid for five (5) years.

Upon written request, the City Engineer may grant extensions of approval for up to one (1) year. All requests for extensions must be approved prior to the expiration of the original approval. No more than one (1) extension will be granted.

Revisions to Drainage Plans and Reports

All revisions to either the approved drainage plan or plat must be approved by the City Engineer. The City Engineer may require a re-submittal of a drainage plan or report dependent upon the character and extent of the changes made as determined by the City.

Section 3. Hydrology.

Hydrology is the study of precipitation. Policy makers and engineers must study and understand hydrology because they are interested in designing and building structures and systems to safely convey and discharge precipitation runoff while minimizing the potential of flooding. They must determine how much water should be collected and conveyed or stored, how fast this process must take place, how much can be safely discharged without adversely impacting surrounding properties, and what are other effects of the development being considered. The following sections discuss specific parameters and methods to be used in analyzing proposed developments in the unincorporated areas of the City of Pattison.

Storm Frequency

All drainage improvements shall, at the minimum, be designed for the following storm frequencies. The return intervals listed here are minimums, and the individual design engineer or the City of Pattison may chose to exceed these minimums given site specific requirements or constraints.

Type of Facility	Return Interval Storm
Closed Conduit Storm Sewers (for new developments)	3-year
County Ditch Culverts (serving less than 100 acres)	5-year
County Ditch Culverts (serving 100 to 250 acres)	25-year
County Ditch Culverts (serving 250 acres or more)	50-year
Bridges crossing County Ditches	100-year
Major Ditches and County Channels	100-year
Detention Facilities	100-year

Peak Storm Runoff Rates

The Rational Method can be used for determining peak runoff flow rate for both existing and proposed conditions. These peak runoff rates are used to estimate the impact of development and the conveyance requirements for drainage improvements. This method is applicable for small to medium drainage areas (generally less than 640 acres) where the flow domain is typically overland sheet flow or shallow surface ditch flow. Other methods should be used to estimate peak runoff rates for larger areas or those served by well defined channels where flow routing in defined channels may be significant. The Rational Method takes the following form:

$$Q = C_f * (C * I * A)$$

Where:

Q = Peak Runoff Flow Rate (cfs)
C = Runoff Coefficient, See TABLE A
C_f = Frequency factor (the product of C_f and C should not exceed 1.0)

A = Area of drainage basin being studied (acres)
I = Rainfall Intensity of the design storm (inches/hour)

Frequency Factor (C_f)

The Frequency Factor is used in the Rational Method to scale the magnitude of the peak runoff in relationship to the return interval of the storm consistent with observed runoff data. This adjustment factor is used to account for the effects of antecedent moisture conditions that are generally associated with the less frequent storms. Appropriate values of C_f are presented in the following

table.

Storm Frequency	Frequency Factor (C_f)
10	1.00
25	1.10
100	1.25

The product of C_f and C used in the Rational Method should not exceed 1.0. Basin Time of Concentration (T_c)

The storm rainfall Intensity used in Rational Method will be selected based upon the return interval of the storm to be used (specified in the Storm Frequency Table above), and the duration of the storm to be used (based on the study basin's time of concentration). Time of Concentration (T_c) is defined as the length of time it takes a drop of water to travel from the most hydraulically remote portion of the drainage basin to its outlet. T_c is a property of the drainage basin reflective of its area, shape, surface gradient, land use, land cover, and soil type. T_c (in minutes) may be estimated from the following equation:

$$T_c = \text{Length}/(\text{Velocity} * 60) + 10$$

Where:
Length = Flow distance (feet)
Velocity = Flow velocity (fps) [see following table]

Flow Condition	Representative Velocities
Shallow overland flow in undefined channels	0.25 to 0.50 fps
Flow in street curb & gutter or road ditches	0.75 to 1.25 fps
Flow in shallow ditches	1.5 to 3.0 fps
Flow in defined channels	2.0 to 4.0 fps
Flow in closed conduit storm sewers	3.0 to 5.0 fps

The constant value of 60 in this equation is used to convert seconds to minutes and 10 is used as an estimate of initial delay between the start of rainfall and development of actual surface runoff. This method can be applied fairly accurately to large and small basins with either undeveloped or developed surfaces. However, the designer must specify the flow condition and estimated flow velocities for each flow domain on the site (i.e., the first 100' is overland flow followed by 250' in a gutter followed by 400' in closed conduit, etc.) and estimate time of concentration as the sum of all these individual flow conditions. The flow path used as the basis of this calculation should be clearly denoted on the plans with the associated design calculations.

Another method that can be used to estimate time of concentration for developed areas (i.e., storm sewer projects) is in the following form:

$$T_c = 10*(A)^{0.1761} + 15$$

Where:

A = Drainage Basin area (acres)

This method accurately estimates T_c for sewered projects, however it tends to underestimate actual T_c for basins with significant overland flow or open ditch flow, and therefore may overestimate peak runoff flow rates for these basins.

Alternative methods for estimating the basin's time of concentration will be accepted for reviewed by the City of Pattison, and may be allowed for use if the method's applicability to a specific situation warrants its use over the methods presented.

Storm Intensity (I)

For small watersheds and individual developments, the storm intensity should be based upon the time of concentration of the basin being analyzed. For example, in the design of a detention facility serving a basin with a 2-hour time of concentration, an Intensity for a 100-year, 2-hour storm should be selected for use in the analysis.

For large watersheds and regional studies, use a 24-hour duration storm for the analysis and design. Appropriate design storm intensities are shown in TABLE C for various return interval storms.

Section 4. Hydraulics.

Hydraulics is the study of fluid flow behavior. Policy makers and engineers must study and understand hydraulics because they are responsible for designing and constructing conveyance and storage facilities capable of managing storm water runoff in a safe and effective manner while reducing the potential for flooding. The following sections discuss specific methods and parameters to be used in analyzing proposed developments in the City of Pattison's service area.

Open Channel Flow

The vast majority of conveyance capacity within the City of Pattison's service area is located in the network of open channels that City of Pattison builds and maintains. The Chezy-Manning equation will be used to estimate a ditch's conveyance capacity. This equation is in the following form:

$$Q = 1.486/n * A * R^{2/3} * S^{1/2}$$

Where:

n = Manning's Roughness Coefficient (unitless)
A = Flow Cross-sectional area (sf)
R = Hydraulic Radius (ft)
S = Slope of the Hydraulic Grade Line (ft/ft)

Typical values for Manning's 'n' are included in TABLE B. The flow area (A) is estimated from the ditch cross-section, and is the area that will be conveying water (also called the wet area).

The hydraulic radius is calculated as the wetted area divided by the wetted perimeter. The wetted perimeter is defined as the length of water/surface interface around the perimeter of the wetted area (does not include the water/air interface length). For open channels, the slope of the hydraulic grade line is estimated to be the same as the ditch slope.

Closed Conduit (Pipe) Flow

The Chezy-Manning equation presented earlier is also applicable for estimating flow capacity for closed conduits (i.e., pipes). There are some important distinctions to remember, including:

- Manning's 'n' for pipe materials are significantly different (i.e., smaller) than those for bare earth or vegetative surfaces. See TABLE B for appropriate 'n' values.
- The assumption of hydraulic grade line slope being approximately equal to the pipe slope is only valid under free flow conditions. Once the pipe is full and experiences surcharge conditions, the hydraulic grade line slope will increase as flow increases.

Section 5. Detention Facilities.

To meet City of Pattison's requirements for zero net increase in runoff rates and no negative impacts due to new development, most projects will need to provide on-site detention facilities. Each detention facility should be designed based upon site specific parameters and constraints using accepted engineering methods. City of Pattison will not allow in-line storage within County ditches, channels, or streams. No approvals will be given by City of Pattison for any proposed development until the City Engineer has been satisfied that the proposed design meet City of Pattison's requirements. The following paragraphs describe general design requirements and allowable methods for generating appropriate designs.

The characteristics of an individual development may be such that additional calculations, plans, and details may be required both for proper review and for construction. The City Engineer shall notify the Developer or the Engineer as this need becomes evident.

General Requirements

As shown in the storm frequency table earlier, detention facilities will be designed to provide enough storage to accommodate a 100-year event for the sub-area it is intended to serve.
Detention facilities may be designed to be wet (constant level ponds) or may be designed to drain completely. They must be designed and constructed with stable slopes (4:1), they must provide adequate access and maintenance berms around the entire perimeter (30' minimum), and they must have erosion control elements (i.e., backslope swales, drop pipes, slope pavement, etc.) as necessary to ensure a stable, low maintenance facility.

All detention facilities must provide for twelve (12) inches of freeboard between the projected 100-year water surface elevation and the top of the berm. Outfall structures must be designed to restrict outflow from the detention facility at a rate not to exceed the pre-developed conditions and must include a controlled release mechanism to safely discharge runoff from storm events in excess of the 100-year design storm.

Detention storage may not be placed in road-side ditches or in curb-and-gutter streets in public or private easements and rights-of-way.

Volume Requirements

The following paragraphs describe allowable methods for use in determining storage volume requirements. This is not an exhaustive discussion of all methods but will provide developers and engineers with a variety of tools for use in the unincorporated area of the City of Pattison.

Coefficient Method

For small developments (less than 5 acres for commercial or 10 acres for residential), the developer may choose to use this simplified method for detention volume estimation. Using this method, the developer would provide detention storage using the following equation:

$$\text{Storage} = 0.65 * A_{dev}$$

Where:

Storage = Detention volume required (ac-ft),
A_{dev} = The area of the site that will have modified cover (acres).

Using this method, storage is only provided for the portion of the site that is being developed. For example, on a 4 acre commercial tract with 2.5 acres of building, parking and landscape areas, the developer would be required to provide (2.5 acres)*(0.65 ac-ft/ac) = 1.63 ac-ft of detention storage. This method will not be allowed where the total developed area (either proposed or in the future) will exceed 5 acres for commercial or 10 acres for residential developments. The outfall structures will be designed separately as discussed in later paragraphs.

Small Watershed Method

The storage requirements for detention ponds can be determined using the Small Watershed Method (also called Malcom's Method). This method is a hydrograph based method that compares an expected inflow hydrograph to an allowable outflow hydrograph to determine required storage volume. Using this method, the required volume of storage is equal to the maximum cumulative difference between the inflow and outflow runoff curves.

DETENTION FACILITY INFLOW HYDROGRAPH

The inflow hydrograph is constructed by calculating instantaneous flow rates using the following equations:

$$Q_i = Q_p/2(1-\cos(\Pi * t_i/T_p)) \qquad \text{for } t_i \leq 1.25\ T_p$$

And

$$Q_i = 4.34 * Q_p * \exp(-1.3 * t_i/T_p) \qquad \text{for } t_i > 1.25\ T_p$$

Where: Q_i = instantaneous flow rate at time "i" [cfs] Q_p = peak flow rate (Rational Method) [cfs] t_i = time interval "i" [minutes]
T_p = time to peak [minutes]

In the equations listed above, the time to peak (T_p) is calculated by:

$$\text{Time to peak } (T_p \text{ in minutes}) = V/(1.39 * 60 * Q_p)$$

Where: V = volume of runoff [ft^3]

The total volume of runoff generated by the design storm event is the amount of rain that falls upon the watershed minus loses attributable to surface storage, soil infiltration, evaporation & transpiration, etc. For the purposes of projects within County jurisdiction, designers shall use a cumulative depth of excess rainfall of 9.7 inches when considering a 100-year event. Therefore, the total runoff volume is calculated by multiplying the cumulative depth of excess rainfall for the design storm event (9.7") by the watershed area.

DETENTION FACILITY OUTFLOW HYDROGRAPHS

Outflow hydrographs are constructed by determining the capacity of the outfall structure under incremental surcharge conditions. A table is generated that contains the estimated outfall rate for the proposed structure given increasing depths of ponding in the detention facility. To determine appropriate detention design, the engineer will provide a mass-balance for water in the detention facility (i.e. change in storage of the system equals the volume of water flowing in minus the volume of water flowing out) for several incremental time steps covering the duration of the storm event. The minimum storage requirement will equal the maximum cumulative storage determined in the time step analysis.

The Small Watershed Method is dependent upon the Rational Method for estimation of the peak flow rate, so it should only be used for basins of less than 200 acres where there is no well defined channel and any flow routing can be considered negligible.

HEC-1 / HEC-2 Computer Modeling

For basins over 640 acres in size, City of Pattison will require a HEC-1 hydrograph analysis covering the site and the adjacent parts of the watershed. This analysis should verify that the

proposed improvements will not increase runoff rates anywhere in the system and therefore will have no negative impacts on adjacent properties. The engineer must submit a complete design report with sufficient detail (program input, program output and discussion of methods and assumptions used) for City of Pattison staff to review. Before beginning this type of analysis, please check with City of Pattison to receive the most current baseline HEC-1 model of the area for development (if one is available).

Outfall Restrictor Design

The outfall structure is an important design component of the detention facility. The design of the outfall structure can be as simple as a single pipe segment and can be as complex as multiple pipes with differing diameters at staggered elevations with overflow weirs and flow orifices. The following paragraphs describe ways to estimate flow conveyance of several flow control structures.

Outflow Rate and design

To comply with City of Pattison policy to avoid increasing flood risks or flood hazards, maximum allowable outflow rates from detention basins are restricted to the pre-development flows from the 100-year, 25-year and 10-year Storm, 24-hour events.

If a downstream channel has less capacity than a 10-year event, also restrict the outflow to the amount the pre-development project site contributes to the channel when it is flowing full or at its flooding threshold.

When detention basin modifications are necessary to accommodate a proposed storm sewer outfall or a proposed development, design the modifications such that the 100-year, 25-year and 10-year Storm , 24-hour events water surface profiles in the detention basin and downstream channels are not increased above existing conditions.

If the outflow is into a roadside ditch or storm sewer, restrict the maximum allowable outflow to the rate allowed from the proposed site development using criteria adopted by the jurisdiction responsible for the roadside ditch or storm sewer.

Orifice

One of the most simple flow control structures is an orifice. An orifice is a two-dimensional flow structure (i.e., a drilled hole in a concrete wall, a hole in plate steel or a very short section of pipe) with an estimated conveyance capacity dependent upon the difference in water elevations from one side of the orifice to the other and the orifice opening area. The general equation for estimating flow through an orifice is as follows:

$$Q = C * A * (2 * g * H)^{1/2}$$

Where:

Q = Orifice flow capacity (cfs)
C = Orifice coefficient (unitless) [use 0.8]

A = Orifice opening area (sf)
g = Gravitational acceleration constant (32.2 ft/s^2)
H = Differential head across the orifice (ft)

For the design head differential (H) use the 100-year water surface elevation in the detention facility minus the 25-year water surface elevation in the receiving ditch (if known). If discharging directly into a roadside ditch or a storm sewer, use the difference between the 100-year water surface elevation at the entrance and the centroid of the orifice in feet when orifice is partially submerged. The orifice should generally be greater than 6" diameter to reduce problems with clogging and blockage.

Outfall Pipe

The engineer may use one or more a pipe sections as flow control devices. The conveyance capacity of the pipe(s) can be estimated using the Chezy-Manning equation discussed earlier. In using this method, the slope of the hydraulic grade line is equal to the head differential across the structure divided by the length of the pipe section. For the design head differential use the 100-year water surface elevation in the detention facility minus the 25-year water surface elevation in the receiving ditch (if known). If discharging directly into a roadside ditch or a storm sewer, use the difference between the 100-year water surface elevation at the entrance and the centroid of the orifice in feet when orifice is partially submerged. The restrictor pipe shall not be less than 6" in diameter.

Overflow Weir

An overflow weir can be used on an outfall structure to restrict and regulate outflow. One of the biggest advantages of this outfall structure is that they do not have a finite conveyance capacity, and can therefore be used for emergency overflows to control larger than 100-year flows.

There are many types of weir designs to choose from when designing an outfall structure, and each has a slightly different equation for estimating flow capacity. One of the simplest to design and construct is a Cipoletti weir consisting of a horizontal weir (of width B) with triangular weirs on either side (at 4:1 slopes) and a depth of flow of H feet. Capacity of a Cipoletti weir can be estimate by the following equation:

$$Q = 3.367 * B * H^{3/2}$$

Where:

Q = Weir capacity (cfs)
B = Weir length (ft)
H = Depth of flow across weir (ft)

Section 6. Design Parameters.

The proper hydraulic design of channels is of primary importance to ensuring that nuisance drainage conditions, flooding, sedimentation and erosion problems do not occur or the frequency of their occurrence is at an acceptably low rate. The following minimum design standards shall be applied to construction of new or reconstruction of facilities.

Design Frequency

New facilities shall be designed and constructed to contain and safely convey runoff from the 100-year frequency storm when at all feasible to do so. Consideration must be made for the capacity of existing channels downstream, and no improvement shall be made that increase the frequency of downstream flooding.

Design Flow Velocities

Excessive flow velocity can cause erosion problems, may pose a threat to bank stability and may create safety problems. Additionally, velocities that are too low may allow sediment deposition resulting in loss of channel capacity. Generally, design flow velocities in unlined open channels (for 100-year flows) should be between 2 and 5 fps. Flow velocities in concrete lined channels may increase to be between 5 and 8 fps.

Ditch Channel Slope

Ditches shall have a minimum constructed channel slope of 0.05% to provide for the minimum velocities noted earlier. Excessive slopes may unnecessarily increase the potential for erosion of banks and undermining of bridge and culvert structures, therefore maximum slopes should generally not exceed 1.00%. In areas of steep topography, channel drop structures may be required to limit channel invert slopes.

Ditch Side Slopes

In grass lined channels, maximum side slopes shall be 4:1 (horizontal:vertical). Variance from this criterion may be granted by the City Engineer to accommodate site specific issues, but 3:1 slopes should be the absolute steepest unlined slope proposed. Side slopes for concrete lined channels shall be based on field conditions and shall be site specific.

Ditch Bottom Width

The bottom width for ditches should generally be no less than six (6) feet. A larger bottom width may be required to meet other issues including ditch capacity, design velocity, etc.

Ditch Horizontal Curves

In general, centerline curves for grass channels should be as gradual as possible and should have a

radius greater than three times the ultimate ditch top width. Smaller curvature radii can be allowed with adequate slope paving as approved by the City Engineer.

Ditch Confluences

The angle of intersection between the tributary and main channel should be between 15º and 45º (with an optimal value of 30º). Angles in excess of 90º will not be permitted.

Ditch Transitions

Expansions and contractions should be designed to create minimal flow disturbance and thus minimal energy loss. Design consideration must be given to reducing erosion potential and turbulent flow characteristics at ditch transitions.

Ditch Drop Structures

When introducing flow into ditch main channel from shallow surface swales, the designer must include drop pipes to reduce the erosion potential at the confluence. Drop structures shall be appropriately sized for the area being served; with a discharge elevation of 12" above the main channel flowline.

Concrete Lined Channels

As field conditions necessitate, concrete lined channels may be required to provide adequate capacity or erosion protection for less than optimum drainage easement widths. Design of concrete lined channels will be considered by City of Pattison on a case-by-case basis.

Detention Facilities

Detention facilities shall have:
- Minimum 30-foot wide maintenance berm on all sides.
- Maximum side slopes no steeper than 4:1(h:v).
- Bottom of facility shall have a Minimum 1% cross slope.
- Facility shall have a concrete pilot channel.

Variance from this criterion may be granted by the City Engineer to accommodate site specific issues, but 3:1 side slopes should be the absolute steepest unlined slope proposed.

Table A

Rational Method 'C' Values

Land Use or Land Cover	**Rational Coefficient 'C'**
Raw, undeveloped acreage	0.20

Improved, undeveloped acreage (i.e., mowed, filled, graded, etc.)	0.30
Park Land	0.40
Residential – 1 acre lots or larger	0.40
Residential – ½ to 1 acre lots	0.45
Residential – less than ½ acre lots	0.55
Multi-Family	0.75
Commercial/Industrial	0.90

Table B

Manning's 'n' Values

Channel/Pipe Material	Manning's 'n'
Plastic Pipe (PVC & HDPE)	0.013
Clean Cast Iron	0.014
Concrete	0.013
Corrugated Metal	0.025
Smooth Bare Earth	0.018
Natural Channels (good condition)	0.025
Natural Channels (stones & weeds)	0.035
Natural Channels (poor condition)	0.060
Rip-rap	0.035

Table C

Design Intensity Values for Use in City of Pattison $I = b/(T_c + d)^e$

Storm Frequency	e	b	d
2-year	0.809	70	8
5-year	0.785	77	8.1
10-year	0.757	80	8.1
25-year	0.736	84	8.1
50-year	0.729	91	8.1
100-year	0.714	92	8

DIVISION 4. – APPROVED PRODUCTS LIST

Section 1. Approved Water Products List

1. Fire Hydrants (AWWA Approved)

A. Mueller - Model: Centurion or Modern Centurion

B. American Darling - Model: B-84-B

C. Clow - Model: Medallion Hydrant

2. Valves (AWWA Approved Resilient Wedge Type)

A. Mueller

B. American Darling

C. Clow

3. P.V.C. Pipe (AWWA C-900)

A. J-M Pipe

B. Certainteed

C. Napco

4. Ductile Iron Pipe (AWWA C151, C150 and C600)

A. U.S. Pipe

B. American

5. Castings (D.I.P. AWWA C153)

A. U.S. Pipe

B. Napco

C. Tyler

6. Curb Stop - Bronze, Ball Valve, 360° Rotation, Locking Wing

A. Ford

B. Mueller - Model: Mark II Oriseal

C. James Jones

D. Hays

7. Corporation Stop - Bronze A. Ford - Model: F100

B. Mueller - Model: H-15008 or H-15013

C. James Jones

D. Hays

8. Service Saddle - Single Strap, Epoxy with CC Tap

A. Ford

B. Mueller

C. Clow

D. James Jones

E. Smith Blair

F. Romac

9. Water Meters (AWWA Approved)

A. Neptune

10. Service Tubing A. Copper - Type K

11. Tapping Sleeve & Valve (M.J. or All Stain Less Steel)

A. JMC

B. Rockwell

PASSED AND APPROVED by a majority vote of the City Council on the 2nd day of Feb 2021.

APPROVED:

Joe Garcia, Mayor

Attest:

Lorene Hartfiel, City Secretary