

**CITY OF HALLSVILLE
SUBDIVISION ORDINANCE**

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SUBDIVISION REGULATIONS

Introductory Notes

Land subdivision occurs in every city and is the process by which developers divide land and through which ownership changes. Because land subdivision is the process by which communities are built, it is necessary that the City establish controls over the subdivision of land within its boundaries and its extraterritorial jurisdiction (ETJ).

The Standard City Planning Enabling Act, enacted in 1928, made subdivision regulation a part of a comprehensive and continuing program of planning and guiding the growth of cities rather than an independent, unrelated tool. Responsibility for administering the regulations was transferred to the local planning commission and its staff. Texas likewise, in giving its cities the authority to regulate land subdivision, requires that land be subdivided in conformance with the City's most current Comprehensive Plan, particularly its major street or circulation plan.

Purposes: the overall goal of subdivision regulation is to regulate the conversion of raw land into building sites. In doing this, subdivision regulations serve a multiplicity of public interest purposes including:

1. Insuring that new residential developments have a safe water supply and sewage disposal system;
2. Insuring proper drainage;
3. Securing adequate records of land titles for city records;
4. Assuring safe design and construction of streets, utilities, and drainage systems;
5. Recording the location of underground utilities;
6. Providing safe, efficient water systems adequate for firefighting;
7. Preservation of lands for school sites;
8. Protecting the buyer through regulation of the facilities, construction, etc;
9. Coordinating the plans of all developers

Through these assurance as desirable environment as proposed in Hallsville's most current Comprehensive Plan, can be attained. The close relationship of Hallsville's Plan to its subdivision regulations is not only a practical but also a legal necessity. Practically, the regulations are a tool development is ensured. Legally, the Plan

documents the fact that the requirements of the subdivision regulations are neither arbitrary nor discriminatory.

Subdivision regulations, to achieve maximum efficiency, must be used in close coordination with other local policies, ordinances, and activities. For example, requirements of the building codes should be a consideration in the process of reviewing a proposed subdivision. Planning tools such as zoning and subdivision regulations must be administered in order to improve the quality of the urban environment. In addition, policies to support the administration of these tools must be either stated or implied. Examples of such policies are the following:

1. Under what conditions will the City extend water and other utilities beyond its City's limits?
2. Has the City adopted a general or most current Comprehensive Plan for development?
3. Has the City adopted a Circulation Plan as part of the most current Comprehensive Plan?
4. Will the City assist or discourage costly development outside the City limits by furnishing or withholding City services?
5. What is the City's policy on annexation?
6. Has the City adopted a program or schedule of capital improvements which sets priorities for extension of utilities and streets?
7. What are the construction standards and who will bear the cost of the improvements?

The formulation and publication of these policies in answer to these matters in advance of the inquiry by the developer may reduce the controversy and permit consistent treatment of the questions when they arise.

Expertise will often be necessary during administrative phases to evaluate the adequacy of access to subdivision sites, proposed filing to prepare flood-free building sites, plans for flood protective works, and plans for flood-proofing of individual uses. This expertise may be supplied by a community engineering department, state, or federal agency and/or consulting engineer.

This ordinance is designed to assure, among other objectives, that subdivided land is suitable for its intended use, that innocent purchasers will not be damaged by erosion or flood, and that the community will not be forced to bear extraordinary costs for protection of flood hazard areas, erosion control, and extension of facilities such as

roads, sewer and water into such areas. Facilities, when damaged, must be repaired at public expense. To achieve these objectives, the subdivider is required to submit a detailed plat which must be approved by a plat review agency. He must show that the land can be used for its intended purposes and must install necessary facilities.

Evaluation of the proposed subdivision is a two-step procedure. First, the subdivider must submit a tentative plat showing the most current Comprehensive Plan of the subdivision and other detailed data which will permit the evaluation of flood hazards and the adequacy of adjustments to the hazards. Initial detailed engineering evaluations and planning analysis are necessary at this stage. Once the tentative plat is approved, the subdivider must submit a final plat including much of the basic information contained on the preliminary plat with some deletions and additions. The subdivider must either construct necessary improvements prior to final plat recordation or must post a performance bond to assure that the improvements will be constructed as promised.

Those responsible for plat review will approve the plat subject to appropriate conditions only if it complies with all the requirements of this ordinance and other applicable state and local laws such as building codes. The ordinance applies to residential, commercial, industrial, and other types of land subdivision. It is drafted to provide the developer with a range of alternative methods for adjusting use to flood hazards.

Any amendments or updates to the City's subdivision ordinance do not affect subdivisions which were approved and/or constructed under the present ordinance. Rather they establish processes, procedures, and standards which will be required of future subdivision of land.

The City's subdivision ordinance establishes a process through which proposed developments should be reviewed and considered. It sets standards which such developments, as a minimum, must meet. The ordinance provides a means for granting variances from the requirements in cases of hardship. It should be remembered that while there are practical, legitimate cases in which a variance might be granted without any adverse effects, each time a variance is granted allowing a substandard condition, it weakens, to some degree, the overall legal position of the approving agency (City Council) in the event that the council should be called upon to defend the general standards.

ORDINANCE 2016-07

COMPREHENSIVE SUBDIVISION ORDINANCE
FOR THE CITY OF HALLSVILLE, TEXAS

AN ORDINANCE PROVIDING RULES AND REGULATIONS FOR THE PLATTING AND SUBDIVIDING OF LANDS FOR ADDITIONS TO SAID CITY, AND FOR THE METHOD OF APPROVING AND MANDATORY REFERRAL OF SUCH PLATS AND SUBDIVISIONS BY SAID CITY; PROVIDING STANDARDS AND SPECIFICATIONS FOR STREETS, UTILITIES AND OTHER PUBLIC IMPROVEMENTS IN SAID SUBDIVISION; PROVIDING FOR THE PAYMENT BY THE SUBDIVIDER OF INSTALLATION COSTS OF UTILITIES WITHIN THE SUBDIVISION; PROVIDING FOR THE EXTENSION OF UTILITIES TO SUCH SUBDIVISION; GRANTING AUTHORITY TO THE CITY TO IMPLEMENT SUCH RULES, REGULATIONS, STANDARDS, AND SPECIFICATIONS; PROVIDING FOR CONFLICTS WITH OTHER ORDINANCES, AND FOR REPEALS THEREOF IN CERTAIN CASES; PROVIDING FOR AMENDMENT, SEPARABILITY AND AN EFFECTIVE DATE; AND PROVIDING PENALTIES FOR VIOLATIONS THEREOF.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HALLSVILLE.

SECTION 1 AUTHORITY

1-1 This ordinance is adopted under the authority of the Constitution and Laws of the State of Texas, including particularly Chapters 231, Acts of the 40th Legislature, Regular Session, 1927, as heretofore or hereafter amended (compiled as Article 974a, V.A.C.S.), and the provisions of Section 4 of the Municipal Annexation Act as heretofore or hereafter amended (compiled an article"970a, V.A.C.S.)

SECTION 2 PURPOSE

The purpose of this Ordinance is to provide for the orderly, safe, and healthful development of the area within the City and within the area of extraterritorial jurisdiction surrounding the City, and to promote the health, safety, morals, and general welfare of the community. Such purpose is to be promoted by provisions designed to:

- 2-1 Restrict or prohibit the subdivision of lands for uses which are dangerous to public health, safety, or welfare; or which would jeopardize property in times of flood; or which, with reasonably anticipated improvements, would cause excessive increases in flood heights or velocities.
- 2-2 Protect individuals from buying lands which are unsuitable for intended purposes because of flood hazards by prohibiting the subdivision of unprotected

flood hazard lands, requiring that flood hazard areas be delineated on the final plat, and areas not suitable for development be subject to deed restrictions.

- 2-3 Guide and assist subdivider/ developers in correct, expeditious, procedures to be followed and to inform them of the general standards which shall be required.
- 2-4 Protect the public interest by controlling the location, design, class, and type of streets, sidewalks, utilities, and other essential services required in the public interest and/or necessity.
- 2-5 Provide for the public welfare in those essential areas required for living, educational, recreational, industrial, and commercial purposes.

SECTION 3 GENERAL PROVISIONS

3-1 CONFORMANCE TO MOST CURRENT COMPREHENSIVE PLAN

No plat or subdivision of land within the City and its extraterritorial jurisdiction as determined by Article 974A, V.A.C.S., shall be approved unless it conforms to the most current Comprehensive Plan of said City and its streets, alleys, easements, parks, playgrounds, and public utility facilities, including those which have been or may be laid out, and to the most current Comprehensive Plan for the extension of said City and of its roads, streets, alleys, easements, and public highways, regard being had for access to public utilities.

3-2 INTERPRETATION

In their interpretation and application, the provisions of this ordinance shall be held to be minimum requirements and shall be liberally construed in favor of the governing body and shall not be deemed a limitation or repeal of any other powers granted by State statutes.

3-3 PLANNED UNIT DEVELOPMENT

Upon application by a develop-subdivider, upon review and comment by the city staff as hereafter provided for, and upon review by the Commission, the Governing Body may modify or waive design standards set forth in this Ordinance when such developer-subdivider intends and formally applies to utilize the "planned unit (or clustered) development" concept for the development of a parcel(s) of land. The granting of a waiver or modification under this Section shall not violate the purpose or objectives of this Ordinance and shall not be considered as a variance as covered in Section 6. The minimum size for a planned unit development project shall be five (5) acres.

SECTION 4 DEFINITIONS

For the purpose of this Ordinance, the following terms, phrases, words, and their derivations shall have the meaning ascribed to them in this section.

4-1 SUBDIVIDER

Any person or any agent thereof, dividing or proposing to divide land so as to constitute a subdivision as that term is defined herein. In any event, the term “subdivider” shall be restricted to include only the owner, equitable owner, or authorized agent of such owner or equitable owner, of land sought to be subdivided.

4-2 SUBDIVISION

The division of a lot, tract, or parcel of land (situated either within the corporate limits or within the City’s statutory extraterritorial jurisdiction) into two or more parts, lots, or sites for the purpose, whether immediate or future, of sale, division of ownership or building development. Subdivision includes that property-related action legally described by metes and bounds, lot and block number, or other comparable method and includes the re-subdivision of land or lots which are part of a previously recorded subdivision, but it does not include the division of land for agricultural purposes in parcels or tracts of five (5) acres or more and not involving any new street alley, or easement of access.

4-3 ALLEY

A way which extends only secondary means of access to abutting property; a minor public right-of-way, not intended to provide the primary means of access to abutting lots and which is used primarily for vehicular service access to the back or sides of properties otherwise abutting on a street.

4-4 BLOCK

A piece or parcel of land composed of two or more lots with each lot having access to a public street, road, railroad right-of-way, or a combination thereof.

4-5 BUILDING SETBACK LINE

The line within a property defining the minimum permissible horizontal distance between a building and the adjacent street right-of-way line.

4-6 CITY

The City of Hallsville, Texas

4-7 COMMISSION

The Planning Commission of the City of Hallsville, Texas.

4-8 MOST CURRENT COMPREHENSIVE PLAN

The most current Comprehensive Plan is a statement of official public policy containing the goals and objectives of the community, the capital improvements program, plan for public utilities systems, the land use plan, the major thoroughfare plan, the community facilities plan, flood management program, the subdivision and zoning regulations, and other development codes, ordinances, policies, and plans promulgated by the City Council for the quality and orderly growth of the community.

4-9 CROSSWALK WAY

A public right-of-way, 6 feet or more in width between property line, which provides pedestrian circulation.

4-10 CUL-DE-SAC

A street having but one outlet to another street, and terminated on the opposite end by the vehicular turnaround.

4-11 DEAD-END STREET

A street, other than a cul-de-sac, with only one outlet.

4-12 EASEMENT

A grant by the property-owner to the public, a corporation, or persons of the use of a strip of land for specific purpose.

4-13 FENCE

Any barrier constructed for the purpose of separating parcels of land.

4-14 ENGINEER

A person duly authorized under the provisions of the Texas Engineering Registration Act, as heretofore or hereafter amended, to practice the profession of engineering.

4-15 CITY ENGINEER

The person designated or retained by the City to perform the duties of City Engineer.

4-16 GOVERNING BODY

The City Council of the City of Hallsville, Texas.

4-17 LOT

An undivided tract or parcel of land smaller than five (5) acres having its principal frontage on a public street or officially approved open space, and which

is, or in the future may be, offered for sale, conveyance, transfer or improvement; which is designated as a distinct and separate tract and which is identified by a tract or lot number or a symbol in a duly approved subdivision plat which has been properly filed on record.

4-18 PAVEMENT WIDTH

The portion of a street available for vehicular traffic; where curbs are laid, it is the portion between the back of the curbs.

4-19 PERSON

Any individual, partnership, association, firm, corporation, governmental agency, or political subdivision.

4-20 SETBACK (or BUILDING) LINE

A line on a plat parallel, or nearly so, to the street right-of-way, indicating the limit beyond which buildings, structures, or fences may be erected.

4-21 SHALL, MAY

The word "shall" is always mandatory. The word "may" is directory.

4-22 STREET

Any public thoroughfare or right-of-way, dedicated to the public and not designated as an alley, which provides vehicular access to adjacent land.

- A. An arterial street primarily provides movement and vehicular circulation to various sections of the City.
- B. A collector street primarily provides both movement and access, carrying traffic from local streets to arterial streets or carrying traffic through or to adjacent commercial or industrial areas.
- C. A local street is one which is used primarily for access to abutting properties.
- D. A marginal access street is a street which is parallel to and adjacent to an arterial street or highway and primarily provides access to abutting properties and protection from through traffic.

4-23 STRUCTURE

Anything constructed or erected on the ground including but without limitation to buildings, factories, sheds, cabins, mobile homes, open carports, and other similar items.

4-24 SURVEYOR

A licensed State Land Surveyor or a Registered Public Surveyor, as authorized by the State statutes to practice the profession of surveying.

- 4-25 Any office referred to in this Ordinance by title means the person employed or appointed by the City in that position, or duly authorized representative(s).
- 4-26 Definitions expressly prescribed herein are to be constructed in accordance with the Planning Ordinance, if any, or other applicable ordinance of the City, or in the absence of such Ordinances, then in accordance with customary usage in municipal planning and engineering practices.

SECTION 5 POLICIES AND SPECIAL PROVISIONS

- 5-1 No building, repair, plumbing, electrical, or similar 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 for any structure on a lot within a subdivision in which the standards contained herein have not been complied with in full, except as provided for in Section 6 of this Ordinance.
- 5-3 The City shall not repair, maintain, install, or provide 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.
- 5-4 The City shall not sell or supply any water or sewerage service within a subdivision for which a final plat has not been approved or filed for record, nor in which the standards contained herein or referred to herein have not been complied with in full.
- 5-5 In behalf of the City, the City Attorney shall, when directed by the Governing Body, 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 extraterritorial jurisdiction of the City as such jurisdiction is determined under the Municipal Annexation Act, or within any area subject to all or a part of the provisions of this ordinance.
- 5-6 If any subdivision exists for which a final plat has not been approved or in which the standards contained herein or referred to herein have not been complied with in full, the Governing Body of the City shall pass a resolution recite the fact of such non-compliance or failure to secure final plat approval. Said resolution shall recite the fact that the provisions of paragraphs 5-1 to 5-4 of this Section apply to the subdivision and the lots therein

The City Secretary shall, when directed by the Governing Body, cause a certified copy of such resolution under the corporate seal of the City to be filed in the Deed Records of the county or counties in which such subdivision or part thereof lies. If full compliance and final plat approval are secured after the filing of such resolution, the City Secretary shall forthwith file an instrument in the Deed Records of such county or counties stating that paragraphs 5-1 to 5-4 no longer apply.

5-7 PROVIDED, however, that the provisions of this Section shall not be construed to:

- A. Prohibit the issuance of building, repair, plumbing, or electrical permits with respect to any lots or building tract;
- B. Prohibit the repair, maintenance, or installation of any street or building;
- C. Prohibit the repair, maintenance, or installation of any street or public utility service; for, to or abutting any lot, in these instances: where the last recorded conveyance of such lot or tract prior to passage of this Ordinance was by metes and bounds; or where a building is in existence on said lot prior to passage of this Ordinance; or where such subdivision, whether by recorded plat or by actual occupancy and use, was in existence prior to the passage of this Ordinance.

5-8 LAND SUITABILITY

- A. No land shall be subdivided which is held unsuitable for its intended use by the City for reason of flooding, inadequate drainage, soil and rock formations with severe limitations for development, susceptibility to mudslides or earth slides, severe erosion potential, unfavorable topography, inadequate water supply or sewage disposal capabilities or nay other feature harmful to the health, safety or welfare of the future residents of the proposed subdivision or community.
- B. However, the Governing Body may approve the preliminary and final plats if the subdivider improved the land consistent with the standard of this and other applicable ordinances to make the area, in the opinion of the Governing Body suitable for its intended use. The Governing Body may also approve the preliminary and final plats if the subdivider agrees, in writing, to make suitable improvements and place a sum in escrow pursuant to Section 11 of this Ordinance to guarantee performance.
- C. In determining the appropriateness of land subdivision at the site, the Governing Body shall consider the stated purpose and objectives of this Ordinance, and
 - 1) The danger to life and property due to the increased flood heights or velocities caused by subdivision fill, roads, and intended uses.
 - 2) The danger that intended uses may be swept on to other lands or downstream to the injury of others.
 - 3) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions including flood conditions.
 - 4) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.
 - 5) The importance of the services provided by the proposed facility to the community.

- 6) The availability of alternative locations not subject to flooding for the proposed subdivision and land use.
- 7) The compatibility of the proposed uses with existing development and development anticipated in the foreseeable future.
- 8) The relationship of the proposed subdivision to the most current Comprehensive Plan and flood plain management program for the area.
- 9) The safety of access to the property in times of flood and other natural disasters and emergencies for emergency vehicles.
- 10) The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site.

5-9 APPROVAL REQUIRED

All plans, plats, or re-plats of land laid out in building lots and for streets, alleys, or other portions of the same intended to be dedicated for public use, or for the use of purchasers or owners of the lots fronting thereon or adjacent thereto, and plans and descriptions of all streets, alleys, or public ways intended to be deeded or dedicated for public use, or for the use of purchasers or owners of the land fronting thereon or adjacent thereto, which is not intended to be platted into lots or other designated tracts, and any addition or plan of streets or public ways, located outside the City limits, within Harrison County and entirely or in part within the statutory extraterritorial jurisdiction of the City of Hallsville shall be submitted to the Commission for their consideration with relation to the most current Comprehensive Plan. Said Commission shall submit their recommendation on the above items to the Governing Body for their official consideration and action. No such plat or re-plat or dedication or deed of street or public way shall be filed with the County Clerk as provided by law until such plat or re-plat or dedication or deed shall have endorsed on it the fact that it has first been submitted to the Commission and to the Governing Body, and by said Governing Body been duly approved.

5-10 A Preliminary Plat of any proposed subdivision shall be submitted to the Commission and Governing Body for approval before the subdivider proceeds with the preparation of the Final Plat for record.

5-11 All construction work, such as street paving, storm sewers, curb and/or gutter work, sanitary sewer & water mains, and electrical construction performed by the owner, developer, or contractor, shall be subject to inspection during construction by the proper authority of the City and shall be constructed in accordance with appropriate provisions of this and other applicable Ordinances and public engineering standards.

5-12 LARGE LOT ESTATE SUBDIVISION

Large lots with wide frontage result in less drainage and traffic demands than single-family residential developments consisting of small lots with narrow

frontages and widths. Therefore, the facility requirements and public impacts of the larger, "estate-type" single-family residential developments are less intensive. Residential developments undertaken pursuant to this section 5-12 shall conform to the following provisions and are considered exempt from conflicting provisions in this Ordinance.

A. DEFINITION

A large lot subdivision is defined as a subdivision in which the minimum lot size is one acre and minimum street frontage for any lot is sixty (60) feet with a minimum lot width of one hundred twenty (120) feet at the building setback line and sidelines.

B. LOT STANDARDS

- 1) The minimum lot area shall be one (1) acre when a municipal sanitary sewer system is available to service a lot.
- 2) The building setback requirements shall be thirty (30) feet for the front yard, ten (10) feet for the back yard, and ten (10) feet for the side yard.

C. UTILITIES

- 1) If municipal water or sewer utilities of sufficient capacity are available within two thousand (2,000) feet of the proposed site, the subdivider or developer shall be required to extend the utilities to the site and make them available to every lot in the development.

5-13 APPLICABILITY OF OTHER PROVISIONS IN THIS ORDINANCE

All other provisions of this ordinance which are not in conflict with the specific provision of this section 5-12 shall be considered applicable to large lot estate subdivisions.

SECTION 6 VARIANCES AND BOARD OF ADJUSTMENT (the BOARD)

6-1 The Board may recommend a variance from this Ordinance when, in its opinion undue hardship will result from requiring strict compliance. In granting a variance, the Board shall prescribe only condition that it deems necessary or desirable in the public interest. In making the findings required herein, the Board shall take into account the nature of the proposed use of the land involved, existing uses of land in the vicinity, the number of persons who will reside or work in the proposed subdivision, and the probable effect of such variance upon traffic conditions and upon the public health, safety, convenience, and welfare in the vicinity.

6-2 No variance shall be granted unless it is found that all of the following apply:

- A. There are special circumstances or conditions, including unique to topography, affecting the land involved such that the strict application of the provisions of this Ordinance would deprive the applicant of the REASONABLE USE OF HIS LAND; and
- B. The variance is necessary for the preservation and enjoyment of the Legal Property Rights of its owner; and
- C. The purposes and intent of this Ordinance are observed; and
- D. There is no increase in the flood hazard or flood damage potential; and
- E. The granting of the variance will not be detrimental to the public health, safety, or welfare, or injurious to the legal rights to other property in the area; and
- F. The granting of the variance will not prevent the orderly subdivision of other land in the area in accordance with the provisions of this Ordinance. Such findings, together with the specific facts upon which such findings are based, shall be incorporated into the official minutes of the Board's meetings at which such variance is recommended and granted. Variance 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 and substantial justice done. Financial hardship to the subdivider, standing alone, shall not constitute undue hardship.

SECTION 7 PRELIMINARY CONFERENCE

Prior to the official filing of a preliminary plat, the subdivider, his planner, or representative, should consult with and present a proposed plan of subdivision to the Mayor for comments and advice on the procedures, specifications, and standards required by the City for the subdivision of land.

SECTION 8 PRELIMINARY PLAT

8-1 GENERAL

The subdivider shall cause to be prepared a preliminary plat by a surveyor or engineer in accordance with this Ordinance; (Plat may be prepared in conjunction with a Land Planner). The utility, drainage and street plans for the subdivision (preliminary and final plats) shall be prepared and certified by a professional engineer.

8-2 TIME FOR FILING AND COPIES REQUIRED

The subdivider shall file seven (7) blue or black line copies of the plat together with a reproducible copy of the original, with the City Secretary at least fifteen (15) days prior to the date of the next regularly scheduled Commission meeting.

8-3 FILING FEES

Such plat (both preliminary and final) shall be accompanied by a filing fee in an amount determined by resolution of the Governing Body. No action by the Governing Body shall be valid until the filing fee has been paid. This fee shall not be refunded should the subdivider fail to make formal application for preliminary plat approval or should the plat be finally disapproved by the Governing Body.

8-4 FORMAL APPLICATION

Formal application for preliminary plat approval shall be made by the subdivider in writing to the Governing Body at an official public meeting. (See Section 8-6, Part G).

8-5 FORM AND CONTENT

A. The plat shall be drawn to a scale of 200 feet to one (1) inch or to such a scale that it can be read easily as determined by the Administrator. When more than one sheet is necessary to accommodate the entire area, an index sheet showing the entire subdivision at an appropriate scale shall be attached to the plat. The least or smallest dimension of such drawings shall not exceed 24 x 36 inches and shall include the following:

- 1) Proposed name of the subdivision, which shall not have the same spelling as or be pronounced similar to the name of any other subdivision currently located within the City or within the extraterritorial jurisdiction of the City.
- 2) Names and land use of contiguous subdivisions, and the owners of contiguous parcels of un-subdivided land, and a statement with appropriate references as to whether or not contiguous properties are platted and how they are used.
- 3) Description, by metes and bounds, of the subdivision boundaries.
- 4) Primary control point locations shall be shown. Descriptions and ties to such control points from which all dimensions, angles, bearing, block numbers, and similar data are referenced shall be shown. Such control point designations shall meet all requirements of the appropriate State Statutes.
- 5) Subdivision boundary lines should be indicated by heavy lines, and the acreage of subdivision shown.
- 6) Existing conditions as follows:
 - a) The exact location, dimensions, name and description of all existing and/or recorded streets, alleys, reservations, easements, or other public right-of-way (including both public and private utility lines)

within the subdivision, intersecting or contiguous with its boundaries or forming such boundaries.

- b) The exact location, dimensions, description, and flow line of existing water courses and drainage structures within the subdivision or on contiguous tracts.
 - c) Proposed land use of each subdivided parcel.
 - d) Flood hazard areas and explanatory notes.
- 7) The exact location, dimensions, description, and name of all proposed streets, street grades, and cross sections, alleys, drainage structures, parks, other public areas, reservations, easements, or other rights-of-way, blocks, lots, and other sites within the subdivision.
 - 8) Date of preparation; actual and graphic scale of plat; and north arrow.
 - 9) Draft of proposed restrictive covenants (if any) to be imposed; areas subject to special restrictions shall be described and mapped.
 - 10) A number or letter to identify each lot or site on each block.
 - 11) Building setback lines on fronts of all lots and sites. Side yard building setback lines at street intersections and crosswalk ways.
 - 12) Topographic information shall include contour lines on a basis of: five (5) vertical feet in terrain with a slope of two (2) percent or more, one (1) vertical foot in terrain with a slope of less than two (2) percent, and one-half (1/2) vertical foot in terrain of less than one (1) percent.
 - 13) Proposed fill or other structure-elevating techniques, levees, channel modifications, and other methods to overcome flood or erosion-related hazards.
 - 14) Designation of all land to be reserved or dedicated for open space or recreational use.
 - 15) Vicinity sketch or map, at some appropriate scale, which shall clearly show existing subdivisions, street easements, rights-of-way, parks and public facilities of water, and possible storm sewer, water, gas, electric, and sanitary sewer connections by owner.
 - 16) Soil information which shall show characteristics for soil bearing, shrink/swell, permeability, percolation, and other pertinent aspects which could affect development of the subdivision.
 - 17) See requirements under Section 13.

- B. At the request of the City Staff, the Commission or the Governing Body, the subdivider may be required to provide the following additional information on the Preliminary Plat:
- 1) Preliminary plan of any required onsite waste disposal systems including disposal sites for lands subject to flooding or sanitary sewers with grade, pipe size, and points of discharge.
 - 2) Conceptual sketch of development of dedicated park sites.
 - 3) Conceptual sketch of structural and land use arrangement(s) proposed on the property and/or individual lots.
 - 4) See Section 10-3, part Q; Section 10-7, part C.

8-6 PROCESSING OF PRELIMINARY PLAT

- A. The City Staff, as specified hereafter, shall check the preliminary plat as to its CONFORMITY WITH THE ADOPTED MOST CURRENT COMPREHENSIVE PLAN, major street plan, land use plan, zoning district, and the standards and specifications set forth herein or referred to herein, or to other pertinent policies and standards of the City.
- B. Pertinent copies of the preliminary plat data shall be submitted to the City Engineer, and he shall check the same for conformity with the standards and specifications contained or referred to herein. The City Engineer, Mayor, Planning Commission, or Governing Body may require the applicant to submit additional topographic information, detailed plans for proposed use and other information to determine possible flood or erosion hazards, the effect of the subdivision uses upon flood flows, and the adequacy of proposed flood protection measures. The City Engineer, Mayor, Planning Commission, or Governing Body may consult with expert persons or agencies for technical assistance and advice.
- C. In addition, as a minimum, the following checks of the preliminary plat shall be made by:
- 1) The City Engineer:
 - a. Drainage
 - b. Street layout and proposed street grades
 - c. Type of paving
 - d. Boundary lines
 - e. Monuments & Bench marks
 - f. Location and size of alleys (if needed)

- g. Availability of adequate water and sewer mains to the subdivision
 - h. Water system layout and fire hydrant locations
 - i. Sanitary sewer easements
 - j. Soil conditions
- 2) The Building Inspector:
- a. Occupancy regulations and requirements
 - b. Building lines and setback requirements
- D. The City Engineer, on behalf of the City Staff shall aggregate the preliminary plat and accompanying data to the Commission and Governing Body with their recommendations as to modifications, additions, or alternations of such plat data.
- E. Within thirty (30) days after the preliminary plat is filed (as per Section 8-2 above), with the City Secretary, appropriate action shall have been taken by the Commission recommending either (1) conditionally approving or disapproving the preliminary plat or (2) conditionally approving the preliminary plat with modifications.
- F. The Commission shall certify: (1) that it has reviewed the preliminary plat and (2) as to its recommendation to the Governing Body for conditional approval, disapproval, or conditional approval with modifications.
- G. Following action on the preliminary plat by the Commission, the developer may file a formal written application for preliminary plat approval (through the City Secretary, as agent for the Governing Body) at an official public meeting.
- H. Within thirty (30) days of the filing of formal written application for preliminary plat, the Governing Body shall either (1) conditionally approve or disapprove the preliminary plat or (2) conditionally approve the preliminary plat with modification.
- I. Conditional approval of a preliminary plat by the Governing Body shall be deemed an expression of approval of the layout submitted on the preliminary plat as a guide to the installation of streets, water, sewer, and other required improvements and utilities and to the preparation of the final or recorded plat.
- J. Conditional approval of a preliminary plat shall be effective for no more than six (6) months unless reviewed by the Governing Body in the light of new or significant information which would necessitate a revision of the preliminary plat. If the Governing Body shall deem changes in a preliminary plat as necessary, it shall so inform the subdivider in writing.

- K. If no circumstances have occurred which would affect the proposed plat within six (6) months of the effective approval of the Preliminary Plat, the Governing Body may, upon the application of the subdivider, extend the approval for an additional six (6) months. At the end of this six-month extension, the preliminary approval will be revoked (in writing by the City to the subdivider).
- L. The Governing Body shall certify the preliminary plat stating its decision to conditionally approve, disapprove or conditionally approve with modifications.

SECTION 9 FINAL PLAT

9.1 FORM AND CONTENT

- A. The final plat and accompanying data shall conform substantially to the preliminary plat as conditionally approved or conditionally approved with modifications by the Governing Body. The plat shall incorporate any and all changes, modifications, alterations, corrections, and conditions recommended by the Governing Body.
- B. The final plat shall be drawn at a scale of 200 feet to one (1) inch. Where more than one sheet is necessary to accommodate the entire area, an indexed cover sheet showing the entire subdivision at an appropriate scale shall be attached to the plat.
- C. The final plat shall be submitted in an original and six (6) copies and shall contain all of the features required for preliminary plats in Section 8 above, and it shall be accompanied by site improvement data bearing the seal of a licensed engineer or a registered public land surveyor.
- D. The final plat shall be accompanied by a filing fee established by the Governing Body. No action by the Governing Body shall be valid until the filing fee has been paid. This fee shall not be refunded should the subdivider fail to make formal application for final plat approval or should the plat be disapproved by the Governing Body.
- E. In addition to the various requirements for the preliminary plat, the final plat shall also include the following:
 - 1) The exact location, dimensions, name, and description of all existing or recorded streets, alleys, reservations, easements, or other public rights-of-way, blocks, lots, and other sites within the subdivision with accurate dimensions, bearing or deflection angles and radii, area, and central angles, degree of curvature, tangent distance, and length of all curves where appropriate.
 - 2) The exact location, dimensions, description, and name of all proposed streets, alleys, drainage structures, parks, other public areas, reservations, easements, or other rights-of-way, blocks, lots and other sites within the

subdivision with accurate dimensions, bearing or deflection angles and radii, area, and central angles, degree of curvature, tangent distance and length of all curves where appropriate.

- 3) Regulatory flood elevations, boundaries of flood-prone areas, building sites (including waste disposal areas for flood-prone lands), fills, flood or erosion protective works, and areas subject to special restrictions.

F. The final plat shall also include the following:

1) OWNER'S ACKNOWLEDGEMENT

THE STATE OF TEXAS
COUNTY OF HARRISON

I, (WE), the undersigned, owner(s) of the land shown on this plat, and designated herein as the _____ Addition of the City of Hallsville and whose name is subscribed hereto, hereby dedicated to the use of the public forever all streets, alleys, parks, water courses, drains, easements, and public places thereon shown for the purpose of consideration therein expressed.

Owner

Date

THE STATE OF TEXAS
COUNTY OF _____

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

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2016.

Notary Public in and for _____ County, Texas

2) CERTIFICATION BY THE COUNCIL

I, the undersigned, Mayor of the City of Hallsville, hereby certify that this subdivision plat conforms to all requirements of the Subdivision Regulations of this City wherein my approval is required.

Mayor

Date

3) CERTIFICATION OF THE SURVEYOR RESPONSIBLE FOR SURVEYING THE SUBDIVISION AREA ATTESTING TO ITS ACCURACY

STATE OF TEXAS
COUNTY OF _____

I, the undersigned, a (licensed professional engineer, registered public land surveyor) in the State of Texas, hereby certify that this plat is true and correct and was prepared from an actual survey on the property made under my supervision on the ground

Licensed Professional Engineer or Registered Public Land Surveyor

Date

4) CERTIFICATION BY THE ENGINEER RESPONSIBLE FOR THE PREPARATION OF THE FINAL PLAT AND SUPPORTING DATA, ATTESTING TO ITS ACCURACY

STATE OF TEXAS
COUNTY OF _____

I, the undersigned, a licensed professional engineer in the State of Texas, hereby certify that proper engineering consideration has been given this plat.

Registered Professional Engineer

Date

9-2 PROCESSING OF FINAL PLAT

- A. If desired by the subdivider and approved by the Governing Body, the final plat may constitute only that portion of the approved preliminary plat which he proposes to record and develop. However, such portion shall conform to all the requirements of this Ordinance. (See also Section 13).
- B. As soon as practical after the subdivider is notified of the approval of the preliminary plat, he or his engineer shall submit to the Governing Body at an official meeting the final plat of the subdivision or portion thereof.
- C. No final plat will be considered unless a preliminary plat has been submitted and approved.
- D. If an approved plat has been duly recorded and the subdivider wishes to increase the size of the lots by combining one lot with a portion of the adjacent lot in such manner that no portion of a lot remains smaller than the original lots, an additional preliminary plat will not be necessary.
- E. Within thirty (30) days after the final plat is formally filed with the City Secretary, the Governing Body shall approve or disapprove the plat.
- F. If the final plat is disapproved, THE GOVERNING BODY SHALL INFORM THE SUBDIVIDER IN WRITING of the reasons at the time such action was taken.
- G. After the final plat has been approved and in accordance with Section 11 of this Ordinance, construction of improvements has been made or security has been filed in lieu of construction, the Governing Body shall cause the final plat to be recorded with the County Clerk. The Governing Body shall also cause the check or checks for the recording fee or fees deposited at the time the final plat was filed for approval to be delivered with the final plat to the County Clerk.

SECTION 10 STANDARDS AND SPECIFICATIONS

No preliminary or final plat shall be approved by the Commission or Governing Body and no completed improvements shall be acceptable by the City unless they conform to the following standards and specifications:

10-1 GENERAL

A. Conformity with the most current Comprehensive Plan

The subdivision shall conform to the most current Comprehensive Plan of the City and parts thereof.

B. Provision for Future Subdivisions

If a tract is subdivided into parcels larger than ordinary building lots, such parcels shall be arranged to allow for the opening of future streets.

C. Reserve Strips Prohibited

There shall be no reserve strips controlling access to land dedicated or intended to be dedicated to public use.

D. Standards for Construction

The street, water installation, sewer facilities, and waste disposal and drainage with all appurtenances pertaining to them and facilities of other agencies as may be required shall be constructed and installed in each new subdivision in accordance with the existing design standards of the City of Hallsville and the Texas Commission on Environmental Quality as amended.

10-2 BUILDING SITES IMPROVEMENTS

- A. No subdivision or part thereof shall be approved if a proposed subdivision development is to occur in an established flood hazard area and thereby individually or collectively significantly increase flood flows, heights, or damages.
- B. Building sites, residences, motels, resorts, and similar uses for human occupation in established flood hazard areas shall meet the requirements of the Federal Flood Insurance Program as adopted by the City.
- C. Building sites for structures other than residences outside of established flood hazard areas shall ordinarily be filled as provided in the City's codes and ordinances controlling such activities.
- D. When the Governing Body so determines, based on study by the City Staff, that only part of a proposed plat can be safely developed, it shall limit development to that part and shall require that the method of development be consistent with its determination.
- E. When a subdivider does not intend to develop the plat himself, and the City Engineer determines that limitations are required to insure safe development, the Governing Body may require the subdivider to impose appropriate deed restrictions on the land. Such deed restrictions shall be inserted in every deed and noted on the face of the final recorded plat.
- F. Floor level of the buildings are to be a minimum of 12" above the top of the nearest curb and gutter or 18" above natural ground at the site, the grade of which to be approved by the City. This minimum may be reasonably increased upon specific findings by the City Engineer that site drainage characteristics require such increase.

10-3 STREETS

A. Street Layout

- 1) Adequate and paved streets shall be provided by the subdivider. The arrangement, character, extent, width, grade, and location of each shall conform to the most current Comprehensive Plan of the City and shall be considered in their relation to existing and planned streets, to topographic

conditions, to public safety and convenience, and in their appropriate relationship to the proposed uses of land to be served by such streets. The street layout shall be devised for the most advantageous development of the entire neighborhood.

2) There shall be at least 100 feet of straight street between reverse curves.

B. Relation to Adjoining Street System

Where necessary to the neighborhood pattern, existing streets in adjoining areas shall be continued, shall be at least as wide as such existing streets, and shall be in alignment therewith.

C. Projection of Streets

Where adjoining areas are not subdivided, the arrangement of streets in the subdivision shall make provisions for the proper projection of streets into such un-subdivided areas. The distance between such projections into any one adjoining property shall not exceed six hundred (600) feet.

D. Street Jogs

Street jogs with center line offsets of less than 125 feet shall be prohibited.

E. Street Intersections

Street intersections shall be as nearly as right angles as practicable, giving due regard to terrain, topography, site distances, and safety. No intersecting street shall be plotted with the angle included between adjoining streets lines less than 75 degrees, nor more than 115 degrees.

F. Dead-End Streets

Dead-end streets shall be prohibited except as short stubs to permit future expansion.

G. Cul-de-Sacs

In general, cul-de-sacs shall not exceed 500 feet in length, and shall have a turnaround of not less than 127 feet in diameter (R.O.W.) with a pavement diameter of 96 feet in residential areas, and shall have a turnaround not less than 200 feet in diameter (R.O.W.) with a pavement diameter of 180 feet in commercial and industrial areas.

H. Streets on most current Comprehensive Plan

Where a subdivision includes a street as shown on the official Circulation and Major Streets Plan of the City, that street shall be platted in the approximate location shown on the Plan. The right-of-way shall be equal to or greater than that indicated on the Major Streets Plan.

I. Minor Streets

Minor streets shall be laid out so as to discourage their use by fast and through traffic.

J. Pavement Widths and Rights-of-Way

- 1) Major and Secondary Thoroughfares (arterial streets) shall have a minimum right-of-way of 100 feet and two lanes with paved width of 24-foot back-of-curb to back-of-curb, 14-foot center lane and two 17-foot wide parkways.
- 2) Collector Commercial Streets shall have a minimum right-of-way of 80-feet and a minimum paved width of 59-feet back-of-curb to back-of-curb.
- 3) Collector Commercial Streets shall have a minimum right-of-way of 70-feet and a minimum paved width of 39-feet back-of-curb to back-of-curb.
- 4) Residential Streets (local streets) shall have a minimum right-of-way of 60 feet and a minimum paved width of 29 feet back-of-curb to back-of-curb.

K. Pavement Widths and Rights-of-Way of Streets Forming Part of the Boundary of the Subdivision Shall be as Follows:

- 1) Where the proposed subdivision abuts upon an existing street or half-streets that does not conform to Paragraph J of this section, the subdivider shall dedicate right-of-way sufficient to make the full right-of-way width conform with Paragraph J, and there shall be paved so much of such right-of-way as to make the full pavement width comply with Paragraph J. Before any pavement is laid to widen existing pavement, the existing pavement shall be cut back two (2) feet to assure an adequate sub-base and pavement joint.
- 2) No half-streets will be permitted in new subdivision plats.

L. Curbs and Gutters and Open Ditches

Curbs and gutters may be installed by the subdivider on both sides of all interior streets, and the subdivider may be required by the Governing Body to install curb and gutter on the subdivision side of all streets forming part of the boundary of the subdivision. Open ditches may be installed by the subdivider in conformance with Section 10-3J and only in conjunction with the type of development specifically described in Section 5-12. Wider rights-of-way may be required by the City Engineer when installing open ditches so that a proper 3:1 slope can be constructed for the banks and the ditches.

M. Street Construction

Materials and workmanship shall conform with the project specific plans and specifications and shall be constructed per the geotechnical investigation's recommendations.

N. Street Name

Names of street shall not duplicate or cause confusion with the names of existing streets, unless the new streets are a continuation of or in alignment with existing streets, in which case names of existing streets shall be used. The City shall provide and install uniform street signs. Should the subdivider choose to provide street signs other than those provided by the City, they shall conform to City standards and shall have approval by the City.

O. Street Patterns

Streets shall be platted with appropriate regard to natural and topographic features so as to lend themselves to attractive treatment.

P. Street Grades

Grades of all streets shall be sufficient to insure adequate drainage, but shall not be more than seven (7) percent.

Q. The City Engineer and Governing Body may require profiles and elevations of streets to determine compliance with any requirement of this section.

10-4 ALLEYS

A. Width and Paving

Alleys may be proved at the rear of all lots intended to be used for business purposes and may be provided in residential areas. Alleys shall generally be parallel to the street. Alleys shall be no less than twenty (20) feet wide and shall be paved in business areas consistent with City Engineering Design Standards. The right-of-way for alleys shall be dedicated to the public.

B. Intersecting Alleys or Utility Easements

Where two alleys or utility easements intersect, or where an alley or utility easement turns at a right angle, a cutoff of not less than ten (10) feet from the normal interest of the property or easement line shall be provided along each property or easement line.

C. Dead-End Alleys

Dead-end alleys shall not be permitted.

D. Alleys Which Do Not Connect on a Straight Course

If alleys are not themselves straight within each block, or if the same do not connect on a straight course with the alleys of adjoining blocks, then all necessary easements shall be provided for the placing of guy wires in order to support poles set on curving or deviating rights-of-way of alleys.

10-5 WATER INSTALLATION

A. Water Supply and Distribution

- 1) All subdivisions shall be provided with a water supply and/or water distribution system approved by the City Engineer and the Texas Commission on Environmental Quality. The subdivider shall be responsible for providing this system at his expense.
- 2) All water systems located in flood prone areas, whether public or private, shall be flood-proofed above the established flood protection elevations.
- 3) If there is an existing public water supply system on or near the subdivision, the City may require the subdivider to connect to this system.
- 4) Water mains shall not be less than six (6) inches in diameter in residential areas and eight (8) inches in commercial and industrial areas. Dead end mains should not be less than eight (8) inches in diameter. The Design Engineer should provide the City Engineer the hydraulic calculations verifying water main size adequacy for dead end installations for their intended use and construction types per fire code.
- 5) Water mains may be required by the City to serve areas other than the subdivision.

B. Fire Hydrants

Standard fire hydrants shall be installed by the subdivider and connected to the water distribution system of the subdivision as per specifications of the Fire Marshall, City Engineer and the State Board of Insurance.

C. Sharing in cost of oversized line (Reserved).

10-6 SEWER FACILITIES AND WASTE DISPOSAL

- A. All subdivisions shall be connected to a sewage collection and disposal system approved by the City Engineer at the expense of the subdivider.
- B. If a separate sanitary sewage disposal system is proposed, it must be approved in writing by the Texas Commission on Environmental Quality prior to approval of the final plat by the City and such written approval presented to the City Engineer.

- C. The City Engineer may prohibit installation of sewage disposal facilities requiring soil absorption systems where such systems will not function due to high ground water, flooding, or unsuitable soil characteristics. Such action by the City Engineer shall be based on the review and findings of the City and/or County Health Officer. The City may require that the subdivider note on the face of the plan and in any deed of conveyance that soil absorption fields are prohibited in designated areas.
- D. The City Engineer may prescribe adequate methods for water disposal. If a sanitary sewer system is located on or near the proposed subdivision, the City shall require the subdivider to provide sewage facilities to connect to this system where practical, and shall prescribe the procedures to be followed by the subdivider in connecting to the system.
- E. The minimum size of sanitary sewer shall be six (6) inches in diameter.
- F. Pipe shall be poly vinyl chloride (pvc) pipe SDR26 or as specified by the City.
- G. Sharing in cost of oversized lines (Reserved).

10-7 UTILITY LINES AND EASEMENTS

- A. All utility lines that pass under a street or alley shall be installed before the Street or alley is paved. Where it is necessary that utility lines pass under the street or alley pavement, they shall be extended to a point at least three feet beyond the edge of the pavement.
- B. Overhead utility lines crossing alleys shall be a minimum of eighteen (18) feet.
- C. Except where alleys of not less than twenty (20) feet in width are required, easements not less than fifteen (15) feet in width shall be retained (7-1/2 feet on each side of rear lot lines). Where necessary, easements not less than ten (10) feet in width, on each side of side lot lines shall be retained for poles, wires, conduits, storm sewers, sanitary sewers, water lines, open drains, gas lines, or other utilities. Such easements may be required across parts of lots other than as described above upon recommendation of the City Engineer. Where the proposed platted area adjoins un-platted areas, the full alley or easement width may be required along the rear of lots adjoining the un-platted areas.
- D. At the option of the subdivider all single phase electric lines and communication lines may be installed underground at the subdivider's cost.

10-8 MONUMENTS AND CORNER MARKERS

- A. All block corners, angle points and points of curves, and all corners of boundary lines of subdivisions shall be marked with a one-half inch steel rod, two feet in length.

- B. Where, due to topographic conditions, permanent structures, or other conditions, the view is obstructed between any two adjacent markers intermediate markers shall be so set as to assure a clear view between adjacent markers. Intermediate property corner markers, consisting of a one-half inch steel rod or three-quarter inch pipe, three feet in length, shall be driven flush with the finished ground surface to mark the corners of all lots.

10-9 DRAINAGE

A. Easement

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

B. Drainage Facilities

- 1) Storm drainage infrastructure should be designed to the 25-year event and checked for flooding for the 100-year event. The Design Engineer shall provide the City Engineer drainage calculations for all improvements.
- 2) Facilities shall be designed to convey the flow of surface waters without damage to persons or property. The system shall insure drainage at all points along streets and provide positive drainage away from buildings and onsite water disposal sites.
- 3) Plans shall be subject to the approval of the Governing Body. The City Engineer may require a primarily underground system to accommodate frequent floods and a secondary surface system to accommodate larger, less frequent floods. Drainage plans shall be consistent with local and regional drainage plans.
- 4) The facilities shall be designed to prevent the discharge of excess runoff onto adjacent properties.
- 5) Storm sewers shall be constructed with reinforced concrete pipe under street sections and HDPP pipe outside pavement sections.

C. Drainage Cost Sharing

- 1) Plans and specifications for the above improvements shall be reviewed by the City Engineer for consistency with general development and city engineering standards.
- 2) If it is determined that additional drainage facilities in the form of storm sewers within the subdivisions are necessary, the Developer shall prepare, with the approval of the City Engineer, plans and specifications to be used by him in correcting the drainage. All such work necessary to be done

under such plans and specifications shall be done at the sole expense of the Developer.

- 3) Storm sewers required to provide drainage from the point where storm water emanates from the subdivision to an adequate drainage point along existing streets, may, at its discretion, be provided by the City of Hallsville. In the event that the storm drain construction is so great as to be prohibitive for either the subdivider or the City, all areas affected by such drainage shall be omitted from the development. The developers, may, at their option, either provide the necessary storm drainage outside of this subdivision, in the event that the City is unable to do so, or, by specific agreement, provide same upon a basis for refund over a period of time agreeable to the Governing Body.

10-10 LOTS, RESIDENTIAL

All lots shall abut on an approved street for a distance of at least sixty (60) feet and shall provide safe and convenient pedestrian and vehicular access from the lot onto the street. On cul-de-sacs the 50 feet frontage will be measured at the minimum setback line; such setback line shall be no less than twenty-five (25) feet from the front property line to the face of the building and shall be required on all lots. Lots on cul-de-sacs shall also have a forty-five (45) feet (minimum) frontage at the property line. Minimum lot area shall be 12,000 square feet, (See Table A).

10-11 BLOCKS

Block lengths shall not exceed 1,000 feet, nor shall they be less than 500 feet.

10-12 CROSSWALK WAYS

Crosswalk rights-of-way six (6) feet in width shall be dedicated where deemed necessary by the Governing Body to provide pedestrian circulation or access in schools, playgrounds, shopping centers, and transportation other than community facilities, or to provide pedestrian circulation within the subdivision.

- A. Crosswalk ways shall be provided with a concrete sidewalk at least four (4) feet wide.

10-13 CONDITIONS ATTACHED TO PLAT APPROVAL

The City Engineer may attach conditions including but not limited to the following to the approval of plats for areas subject to development problems in flood hazard areas:

- A. Construction and modification of sewage, water supply, drainage facilities to meet the standards of this or referenced ordinances and to promote the health, safety, and general welfare.

- B. Requirements for construction or channel modifications, dikes, levees, and other protective measures.
- C. Imposition of operations controls, sureties, and deed restrictions may include flood-proofing of intended uses, subject to the individual approval of the City Engineer and Governing Body at the time such uses are constructed, through:
- 1) Anchorage to resist flotation and lateral movement.
 - 2) Installation of watertight doors, bulkheads, and shutters, or similar method of construction.
 - 3) Reinforcement of walls to resist water pressures.
 - 4) Use of paints, membranes, or mortars to reduce seepage of water through walls.
 - 5) Addition of mass or weight to structures to resist flotation.
 - 6) Installation of pumps to lower water levels in structures.
 - 7) Construction of water supply and waste treatment systems so as to prevent the entrance of floodwaters.
 - 8) Pumping facilities or comparable practices for subsurface drainage systems for buildings to relieve external foundation wall and basement flood pressures.
 - 9) Construction to resist rupture or collapse caused by water pressure or floating debris.
 - 10) Installation of valves or controls on sanitary and storm drains which will permit the drains to be closed to prevent back-up of sewage and storm waters into the buildings or structures. Gravity draining of basements may be eliminated by mechanical devices.
 - 11) Location of all electrical equipment, circuits, and installed electrical appliances in a manner which will assure they are not subject to flooding and to provide protection from inundation by the regulatory flooding.
 - 12) Location of any structural storage facilities for chemicals, explosives, buoyant materials, flammable liquids or other toxic materials which could be hazardous to public health, safety, and welfare in a manner which will assure that the facilities are situated at elevations above the height associated with the regulatory protection elevation or are adequately flood-proofed to prevent flotation of storage containers which could result in the escape of toxic materials into flood waters.

10-14 BUILDING SETBACK LINES & MINIMUM LOT SIZES

- A. The following requirements (Table A) establish minimum setback lines and lot sizes for the structural types described, except as provided for in Section 3-3e.
- B. The following requirements (Table B) establish minimum parking space requirements and standards for various subdivision and land use types.

TABLE B

<u>LAND USE</u>	<u>PARKING SPACES</u>
Single Family Unit	2.0/Unit
Duplex Unit	2.0/Unit
Triplex Unit	2.0/Unit
Fourplex Unit	2.0/Unit
Townhouses	2.0/Unit
Apartments (5 or more units)	2.0/Unit
Motels, similar uses	1.0/Unit
Churches, Theaters, & Similar Uses	1.0/4 Seats
Retail Establishments	1.0/300 SF Gross Floor Area
Kindergartens, Day Nurseries	See 4) below

OTHER USES: Determined by review of Commission

- 1) Parking spaces shall be a minimum of 9 feet wide and 18 feet long.
- 2) Required parking spaces shall not occur, wholly or partially, within public rights-of-way.
- 3) Parking areas for townhouses, apartments, or commercial areas shall be screened from adjacent duplex or single family areas shall be screened from adjacent duplex or single family areas by an opaque fence or hedge six (6) feet or higher.
- 4) Parking spaces listed in Table B do not include nor shall they be used for parking spaces required to adequately accommodate (off-street) employees or accommodate the storage of recreational vehicles boats, etc.
- 5) Parking patterns and arrangements shall conform to City Engineering specifications and standards.

C. SIGHT LINES AT STREET INTERSECTIONS

The location of fencing, landscaping, structures, signs, parking areas, or other visual obstructions shall not be such as to occur within a triangle area formed by a horizontal distance of fifteen (15) feet measured along and from the intersection of right-of-way lines at street intersection.

SECTION 11 GUARANTEE OF PERFORMANCE

11-1 CONSTRUCTION OF IMPROVEMENTS PRIOR TO FINAL PLAT RECORDATION

If the subdivider chooses to construct the required improvements prior to the recording of the Final Plat, all such constructions shall be inspected while in progress by the City, and must be approved upon completion by the City Engineer, or his duly authorized representative. A certificate by such officer stating that the construction conforms to the specifications and standards contained in or referred to herein must be presented to the Governing Body prior to approval of the Final Plat for recordation.

11-2 SECURITY IN LIEN OF CONSTRUCTION

If the subdivider chooses to file security in lieu of completing construction prior to Final Plat approval for recordation, he may utilize one of the following methods of posting security. If the subdivider chooses to file security, the plat shall not be approved for recordation unless the subdivider has done one of the following:

A. Unconditional Guarantee from a federally insured Financial Institution as Approved by the City.

Has filed with the Governing Body, a letter, on the form provided by the City, signed by the principal officer of a federally insured financial institution, acceptable to the City, agreeing to pay the City on demand, a stipulated sum of money to apply to the estimated cost of installation of all improvements for which the subdivider or developer is responsible under this Ordinance. The guaranteed payment sum shall be the estimated costs and scheduling as approved by the Mayor. The letter shall state the name of the subdivision and shall list the improvements for which the subdivider or developer is required to provide.

11-3 GUARANTEE OF MATERIALS AND WORKMANSHIP

The subdivider, or developer, shall require guarantee of materials and workmanship of his construction contractors, with whom he contracts for furnishing materials and installing the improvements required under this Ordinance. The subdivider, or developer, shall himself be responsible for guaranteeing that all materials and workmanship in connection with such

improvements are free of defects for a period of one (1) year after acceptance of the improvements by the City.

11-4 ACCEPTANCE OR REJECTION OF CONSTRUCTION

If one of the above three types of security is filed by the subdivider under Paragraph 11-2, the City Engineer shall inspect the construction of the improvements while in progress and he shall inspect such improvements upon completion of construction. After final inspection he shall notify the subdivider, the Mayor, and the City Attorney in writing as to his acceptance or rejection of the construction. He shall reject such construction only if it fails to comply with the standards and specifications contained or referred to herein. If he rejects such construction, the City Attorney, shall on direction of the Governing Body, proceed to enforce the guarantees provided in this Ordinance.

11-5 EXTENSION OF TIME

Where good cause exists, the Mayor may recommend to the Governing Body to extend the period of time for completion under part 11-2 of this section. Such extension of time shall be reported to the Commission and the Governing Body and recorded in the Minutes of each body. No such extension shall be granted unless security as provided in part 11-2 has been provided by the subdivider covering the extended period of time.

SECTION 12 RESPONSIBILITY FOR PAYMENT OF EXTRAORDINARY

OFF-SITE/ON-SITE INSTALLATION COSTS

12-1 RESPONSIBILITY FOR PAYMENT FOR INSTALLATION COST OF:

A. Streets

The City may pay, providing funds are available, for street right-of-way in excess of sixty (60) feet width and for street paving in excess of twenty-nine (29) feet width, except: where such extra widths are in commercial developments or where they are not required by the City.

B. Bridges

The City may participate, providing funds are available, in the extra cost of large drainage structures on principal streets shown.

C. Street Lights

Street lights shall be installed by the subdivider at intersections and access ways and at not more than 500 foot intervals along streets. Cul-de-sacs more than 300 feet in length shall be lighted. Should the subdivider wish to install, at his own expense, street lighting different than that provided by the City, he shall select the type of street light, pole, and luminaries of a design recommended by the

City Engineering Department and approved by the Governing Body. Lights that are constructed on private subdivisions shall be privately metered and paid for by the Developer and/or the Home Owner's Association.

D. Street Signs

Street signs and markers, in accordance with standards adopted by the City of Hallsville, are required at each intersection within the subdivision and at street entrances into the subdivision. The City will provide and install all street signs at its own expense except as provided in Section 10-3(N) of this Ordinance. All signs shall be in place by the time the subdivision is open for use.

SECTION 13 WHERE SUBDIVISION IS UNIT OF A LARGER TRACT

Where the proposed subdivision constitutes a unit of a larger tract owned by the subdivider, which is intended to be subsequently subdivided in whole or part as additional units, the preliminary and final plats shall be accompanied by a layout of the entire area, showing the tentative, proposed layout of streets, blocks, drainage, water, sewerage, and other improvements for such area.

The overall layout, if approved by the Governing Body, shall be attached to and filed with a copy of the approved subdivision plat in the permanent files of the City.

Thereafter, plats of subsequent units of such subdivision shall conform to such approved overall layout unless changed by the Governing Body, who may change such approved overall layout only when it finds:

- A. That adherence to the previously approved overall layout will hinder the orderly subdivision of other land in the area in accordance with the provisions of this Ordinance; or
- B. That adherence to the previously approved overall layout either will be detrimental to the public health safety, or welfare, or will be injurious to other property in the area.

SECTION 14 AUTHORITY OF CITY COUNCIL

The City Council is hereby authorized to promulgate, or to have promulgated, and to file for public record and use rules, regulations, procedures, standards, and specifications for construction, installation, design, location, and arrangements of streets, curbs, street lights, alleys, utility layouts, utility easements, gates for utility easements, sidewalks, water supply, and water distribution systems, fire hydrants, sewage disposal systems, septic tanks, water wells, monuments, criteria for drainage easement requirements, drainage facilities, and cross walkways.

Such rules, regulations, standards, and specifications may be amended from time to time, provided that an amendment must be appropriately approved by the Governing Body. No such rules, regulations, procedures, standards, and specifications shall conflict with this or any other Ordinance of the City.

All such improvements shall be constructed, installed, designed, located, and arranged by the subdivider in accordance with such rules, regulations, standards, and specifications.

The plat shall show the following (see also Section 13):

Name(s) and address(es) of the subdivider(s), record of owner(s) of land to be subdivided, engineer and/or surveyor preparing the map, and name and address of the designer of the plat.

SECTION 15 WARNING AND DISCLAIMER OF LIABILITY (FLOOD PROTECTION)

The degree of flood protection required by this Ordinance is considered reasonable for regulatory purposes and is based on previous flood records. Larger floods may occur on rare occasions or flood heights may be increased by man-made or natural causes, such as bridge opening restricted by debris.

This Ordinance does not imply that areas outside flood hazard areas or land uses permitted within such areas will be free from flooding or flood damages.

This Ordinance shall not create liability on the part of the City of Hallsville or any officer or employee thereof for any flood damages that result from reliance on this Ordinance or any administrative decision lawfully made thereunder. In no case shall responsibility or liability arise from the design or operation of subdivision drainage facilities dedicated to the City if the City has not accepted in writing the dedication and agreed to maintain and operate the facilities.

SECTION 16 COMPLIANCE

No land shall hereafter be subdivided or used without full compliance with the terms of this Ordinance and other applicable regulations including zoning, official maps, health codes, and other regulations which apply to uses within the jurisdiction of this Ordinance.

SECTION 17 WITHHOLDING IMPROVEMENTS AND SERVICES

The City will withhold all City improvements of whatever nature, including the maintenance of streets and the furnishing of water and sewer service, to any subdivision or part thereof if the platting of such has not been approved by the City or in which the construction of required improvements does not comply with these regulations.

SECTION 18 SEVERABILITY CLAUSE

Should any portion of this Ordinance be held for any reason invalid or unenforceable, the same shall not be construed to affect any other valid portion hereof, but all valid portions remain in full force and effect.

SECTION 19 PENAL PROVISIONS

- 19-1 Any person violating any provision of this Ordinance, such violation being located within the corporate limits of the City, shall be guilty of a misdemeanor and, upon conviction, shall be fined an amount not exceeding five hundred dollars (\$500.00). Each day that such violation continues shall be a separate offense. Prosecution or conviction under this provision shall never be a bar to any other remedy or relief for violation of this Ordinance.
- 19-2 Any person violating any provision of this Ordinance, such violation being located outside the corporate limits of the City but within the City's extraterritorial jurisdiction, shall not be considered as committing a misdemeanor, nor shall any fine provided in Section 19-2 above be applicable; however, the City shall have the right to institute an action in the District Court to enjoin the violation of any provision of this Ordinance.

SECTION 20 AMENDMENT OF ORDINANCE

- 20-1 An amendment to this Ordinance may be initiated by any party or person.
- 20-2 Upon initiation of an amendment, the initiating party or person shall request the Mayor to put such amendment on the agenda of the next regular meeting.
- 20-3 Within thirty-one (31) days after first consideration of the amendment by the Commission, the Commission shall forward a written recommendation of the amendment's disposition to the Governing Body.
- 20-4 The Governing Body shall hold a public hearing on the amendment within thirty-one (31) days within receipt of the recommendation by the Commission.

SECTION 21 EFFECTIVE DATE

Passed and approved at the regular meeting of the City Council of the City of Hallsville this _____ day of _____, 2016.

Steve Eitelman, Mayor

ATTEST

Kimberly Smith, City Secretary

APPENDIX A
CITY OF HALLSVILLE, TEXAS
ENGINEERING DESIGN STANDARDS AND SPECIFICATIONS

1. GENERAL

The following design standards and specifications shall be appended to the City of Hallsville Subdivision Regulations and used for all water, sewer, street and drainage facilities constructed under the Subdivision Regulations.

2. STANDARD SPECIFICATIONS FOR WATER IMPROVEMENTS

- A. **Water Mains:** Water mains shall be constructed of DR-18 C-900 PVC pipe or ductile iron water pipe (Class 150 minimum). Minimum water line size shall be 6 inches in diameter. In the event of a subdivision is to contain in excess of 100 lots, that portion of the water line serving more than 100 lots shall be 8 inches in diameter or greater if required by good engineering practices. Water lines extending into cul-de-sacs shall be a minimum of 6 inches in diameter. In the event ductile iron pipe is used, the pipe shall be encased in polyethylene wrap for corrosion protection. With the use of PVC water pipe, a minimum 14-gauge tracer wire or larger shall be installed in the trench above the pipe to be used for pipe location. The tracer wire shall extend to above ground level at the beginning and end of lines and at all line valves and fire hydrants to allow for connection to the tracer wire. Water mains shall be installed with a minimum cover of 36 inches. All trenches shall be backfilled and compacted to a density of 95 percent standard proctor. No valves, hydrants, or water lines shall be installed in pavement. The lines and appurtenances shall be installed behind the curb in the street right-of-way. All water line crossings that extend under a roadway shall be installed in an appropriately sized PVC sleeve. A 2-inch schedule 40 PVC casing shall be installed at every other lot corner for a road crossing for future taps. The casings shall be capped with PVC caps and shall be installed with 36 inches of cover. All water lines installed shall be looped with the exception of water line in cul-de-sacs. Lines used for looping shall be a minimum of 6 inches in diameter.
- B. **Fittings:** All fittings used with PVC pipe shall be ductile-iron fittings meeting the requirements of the ANSI/AWWA C 153/A 21.53 SSB/Compact. All mechanical joint fittings shall be equipped with Mega Lug gland assemblies.
- C. **Valves:** All line valves and fire hydrants lead valves shall be gate valves. The valves to be installed shall be Mueller Resilient Wedge Gate Valves or Owner approved equivalent. The valves shall be manufactured and testing in accordance with ANSI/AWWA C509 and certified to ANSI/NSF 61 and at a

facility with ISO 9001 certification and UL 262, FM 1120/1130. The body of the valve shall be coated inside and outside with a nominal 10 mils of epoxy coating in compliance with AWWA C550. The wedge shall be cast iron, fully encapsulated in Molded rubber complying with ASTM D2000. The stem shall be machined from forged manganese bronze bar stock. The valves shall be fitted with a standard 2-inch square operating nut. After installation, the valve shall be fitted with aa cast iron valve box which shall include an 18-inch square concrete collar which shall be a minimum of 4 inches thick. The gate valves shall have a 10 year limited warranty from the manufacturer.

- D. Fire Hydrants:** Fire hydrants shall be installed as specified herein. The fire hydrants shall be Mueller Super Centurion 250 break away hydrants or Owner approved equivalent. The fire hydrants shall be mechanical joint and fire hydrant lead assembly shall be restrained with ductile iron anchor couplings and properly blocked. Each valve and fire hydrant shall be blocked and leveled on the bottom shoe of the fire hydrant and valve for support. Pea gravel shall be placed around the shoe to the top to cover the weep hole. The fire hydrants shall be 3-way hydrants meeting the requirements of ANSI/ AWWA C502. The hydrants shall be post type dry barrel design. The hydrants shall have field replaceable hose and pumper nozzles. The main valve shall be a compression type valve which closes with pressure for positive seal which is made of rubber and is conveniently reversible providing a spare for long service life. The fire hydrants shall have a 10 year limited warranty from the manufacturer. Fire hydrants shall be set with a gate valve on the fire hydrant lead with a maximum spacing of 500 feet.
- E. Flush Vales:** A flush valve assembly shall be installed at the end of each dead-end water line which shall consist of an MJ plug with a 2-inch tap. A 2-inch brass nipple shall then be connected to the plug and a 2-inch brass valve shall be installed which shall be fitted with a 2-inch operating nut. The valves shall be Mueller or Owner approved equivalent. Schedule 40 PVC pipe and fittings shall then be used to extend the line to a point 2 feet above ground. The assembly shall terminate with a 90-degree bend oriented horizontally for discharge of water.
- F. Services:** Water services shall be constructed using polyethylene pipe. Corporation cocks at the connection to the water line shall be compression type and shall be bronze. Curb stops shall be full swivel in 180 degrees and shall be bronze and have compression type fittings. Irrigation services shall be installed for each lot. The irrigation services shall be constructed of 1-inch polyethylene pipe and shall include a curb stop as specified previously. The irrigation service shall terminate 24 inches to the side of the service for the residence.
- G. Disinfection:** As the water line is being installed, a pound of HTH dry chlorine shall be inserted into every fifth joint or 100 feet of pipe. Upon completion of the water line, it shall be filled and isolated for a period of 24 hours. The line shall

then be flushed and bacteriological samples taken. A sample shall be taken from every 1,000 linear feet of pipe. The samples shall be delivered to the Smith County Health Laboratory in Tyler for testing. If a sample fails to pass, that section of line shall be retested until it passes. Results of the bacteriological tests shall be sent to Hallsville City Hall.

- H. Pressure Testing:** A pressure test at 125 pounds per square inch for a period of six hours is required for all water lines. Before making the pressure test, the Contractor shall completely fill the lines with water. The air in the water lines shall be bled off through taps at high points in the line. The Contractor shall tap the line and install corporation cocks at all points where air can be trapped to allow removal of the air. Taps on the line are required for sampling and the same taps may be used for bleeding air provided they are at the proper location.

After all air has been removed from the line, the Contractor shall apply a pressure to the water line so that the pressure at the lowest point is 150 pounds per square inch water pressure. He shall inspect every joint for leakage. Any leakage found shall be repaired. After all visible leaks have been repaired; the Contractor shall raise the water pressure to 125 pounds per square inch with a test water pump and maintain this pressure for a minimum of six hours. During the test the Contractor shall inspect all joints for leakage. If any leaks are found the leaks shall be repaired and the line retested.

The Contractor, after repairing any visible leaks, shall again raise the water pressure to at least 125 pounds per square inch for six hours by pumping water into the pipe as necessary to maintain this pressure. At the end of the six hours the pump shall be shut off and if the pressure remains unchanged at 125 pounds per square inch or if the pressure drop does not exceed 10 pounds per square inch in fifteen minutes the line will be accepted without further pressure tests. In the event the pressure drops more than 10 pounds per square inch during the fifteen-minute period, the leaks shall be found and repaired and the test shall be repeated.

- I. Inspection:** During the construction of water lines, the City of Hallsville will provide an inspector to oversee the work. If requested by the City, the developer must provide an experienced inspector from the design engineer's office to inspect all installations of water and sewer lines and materials from the beginning of the project to its completion. The inspector shall have the authority to approve or disapprove the installation of all pipe, valves, and hydrants. Any additions or revisions to the work shall be at the discretion of the City's Water Superintendent. A complete inspection report must be kept daily and signed by the inspector. The report shall be turned into the City of Hallsville at the end of each work week. The Water Superintendent and the Mayor shall have the final approval or disapproval or make any changes at their discretion. The City may also charge an inspection fee at the discretion of the City.

- J. **Plans and Record Plans:** A complete set of Plans and Specifications shall be prepared by a registered engineer. The documents and drawings shall be signed and sealed by said engineer prior to submitting the documents to the City of review. Upon completion of the construction, a set of record plans shall be submitted to the City which documents any changes during the construction of the project.
- K. **Seeding and Erosion Control:** The Contractor shall be responsible for seeding areas disturbed during construction and shall maintain erosion control measures as directed by the Project Engineer. If applicable, a Stormwater Pollution Prevention Plan may be prepared for the project and adhered to at the direction of the Project Engineer.
- L. **Warranty:** The Contractor shall provide a 1-year warranty for all work performed. He shall be responsible for any repairs or maintenance to the water line and ditch lines.

3. STANDARD SPECIFICATIONS FOR SEWER IMPROVEMENTS

- A. **Sewer Mains:** Sewer mains shall be constructed of SDR 26 heavy wall PVC sewer pipe with O-rings gaskets. Class 160 PVC water pipe may also be used for sewer pipe when a pressure rated gasket is required. Class 150 ductile iron pipe may also be used as a sewer pipe for areas with shallow depths and creek crossings or when required by the City Inspector. The minimum line size shall be 6-inch. The City of Hallsville shall determine the line size required in an instance where over sizing to meet overall collection system needs. All line shall be laid with a 14 gauge or larger copper tracer wire in the trench. The tracer wire shall extend from one end of the line to the other.
- B. **Fittings:** All fittings used with PVC pipe shall be Schedule 4- PVC.
- C. **Cleanouts:** Each sewer line shall either terminate with a manhole or a cleanout. If a cleanout is used it shall be constructed with 6-inch SDR 26 pipe and shall consist of a 45-degree bend at the end of the line and enough 6-inch pipe for the line to extend to ground level. The top of the cleanout assembly shall be fitted with a cast iron cover which shall be encased in concrete.
- D. **Manholes:** The Contractor shall construct precast concrete manholes. He shall construct a manhole bottom of concrete from the depth of 8-inches minimum below the bottom of the lowest pipe to a point 8-inches above the top of the highest pipe in each manhole. The top of the concrete manhole bottom shall have flow channels cast in it as shown on the Plans. The manhole walls shall be constructed using precast concrete sections of Class III concrete pipe 48 inches in diameter with "O" ring rubber gasket joints to within 3 feet of the top of the manhole. The cast iron ring shall be securely mortared to the top of the manhole.

The Contractor shall vary the height of the precast manhole sections as required by using a bottom section 1,2,3, or 4 feet high so that the total height of the manhole is either exactly as required or not more than one foot less than the required height. The Contractor shall construct a neck or chimney with an inside diameter of 2-feet at the top of the manhole below the cast iron manhole ring, using precast concrete rings set in mortar, so that the height of the manhole is correct. Bricks may not be used for the construction of manhole necks.

The precast manhole sections shall be constructed of concrete using aggregate meeting ASTM C-33, with the additional requirement that the aggregate shall have a minimum of 50 percent calcium carbonate equivalent. The wall thickness shall be listed under wall "B" of ASTM C-76. The precast manhole sections shall be as manufactured by Gifford-Hill Pipe Company or accepted equivalent. All manholes shall be constructed without manhole steps.

Manholes shall be so constructed to withstand a minimum of 40,000-pound wheel loading in all locations. The manholes shall be installed in a workmanlike manner so that the finished structure shall be watertight and that all field fabrication shall have a watertight joint. The Contractor shall furnish and install a 30-inch clear opening manhole ring and cover with a minimum combined weight of 400 pounds. The manhole covers shall be equipped with pick bars for lifting the cover. Manhole covers with pick holes shall not be accepted.

Poured-in-place concrete, fiberglass, and brick manholes will not be accepted.

The manholes shall be constructed in such a manner as to reduce the likelihood of shearing of the pipe due to settlement of the manhole after construction. The Contractor shall accomplish this in one of two ways. He may install a short joint of pipe on each line entering and exiting the manhole or he may install a watertight, size-on-size resilient connector on each line entering and exiting the manhole. Resilient connectors shall conform to ASTM C-923. If poured in place concrete manhole bottoms are used, the Contractor shall also furnish and install a water stop gasket around each pipe entering or exiting the manhole.

Upon completion of said project each manhole shall be visually inspected to insure the watertight integrity of the manhole and tested as specified. The cost of the manhole testing shall be included in the unit price for the manhole construction.

- E. Services:** All sewer services shall be minimum 4-inches. Materials which are acceptable for sewer services include Schedule 40 PVC, or cast iron when the depth is acceptable to the City Water Superintendent. A 2-way cleanout shall be installed on every house or building located at the structure. A 1-way cleanout shall be installed at the property line pointed to the city sewer main. All service line fittings shall be Schedule 40, or ductile iron fittings. All service tees and

saddles shall be a minimum of 6x4 saddle, tee, or wyes. Saddles shall be gasket by gasket only. Glue tees or wyes may be used but must be Schedule 40.

- F. Boring:** All road crossings shall be bored. The bore shall consist of a properly sized steel casing with the carrier pipe being installed at the casing. Boring of City streets shall be performed using the dry or wet bore method. Directional drilling may also be used.
- G. Trench Safety:** For all excavations 4-feet or greater in depth, the Contractor shall provide appropriate trench safety equipment and methods in the installation of the sewer lines.
- H. Water in Trench and Unstable Trench Bottom:** The Contractor shall dispose of all water in the pipe trenches, if any, without any extra payment other than the payment per foot of pipe. If water accumulates in the trench, either from overflow of surface water into the trench or from seepage of ground water into the trench, the Contractor shall remove the water from the trench by pumps or otherwise. Water shall not be allowed to flow over the subgrade where pipe is to be laid. In the event there is flow of water in the trench, the Contractor shall provide a flow channel alongside of where the pipe is to be laid so the water can flow to sumps at intervals from which the Contractor can pump the water from the trench.

All bell holes shall be free of water while joints are being made. If water accumulates in the bell holes, the Contractor shall pump or bail them out before making the pipe joints. The bells and spigots of the pipes shall be wiped dry and kept dry while the joint is being made. The pumping or bailing of water from bell holes is to be continued so that the water level in the bell hole remains below the bottom of the bell of the pipe until the joint is completely made.

In the event the amount of ground water entering the trench is excessive and the Contractor is unable to keep the water from where the work is to be performed, he will be required to furnish the equipment and material and to de-water the trenches to be excavated before they are excavated.

All work of cutting flow channels in trench bottoms, bailing or pumping water out of bell holes, and pumping water out of the trench must be performed by the Contractor without extra payment other than the unit price per foot of pipe.

Where the conditions are such, in the opinion of the Engineer or his representative, that the earth in the bottom of the trench is sufficiently unstable that there may be or is a question as to whether the pipe will remain on the proper grade after it is installed, the Contractor shall stabilize the trench bottom in the manner directed by the Engineer or his representative. If the Engineer or his representative believes that the problem with instability of the trench bottom is an acute problem, the Engineer or his representative may direct the Contractor

to stabilize the trench bottom with concrete mix. In this event, the concrete used shall be mixed as specified for manhole bottoms except that the mixing water shall be omitted. The dry concrete mix shall be placed in the trench with the soil moisture furnishing the water of hydration to hydrate the cement in the concrete mixture. Payment for stabilization materials, if required, shall be included in the unit price bid for the installed of the pipe.

- I. **Excavation, Bedding, and Backfill:** Trenches shall be excavated to a width which will provide adequate working space and clearances for proper pipe installation, jointing and embedment operations. In order to protect the pipe from external loads in excess of those used in the design of the pipe, it is necessary to limit the width of the lower portions of the trench below an elevation 12-inches above the top of the installed pipe. The trench width shall be a minimum of 24-inches greater than the outside diameter of the barrel of the pipe. Pipes larger than 24-inch diameter may have a greater maximum width upon approval of the Engineer.

All pipe shall be installed upon a uniformly graded subgrade which shall provide uniform support to the pipe (Class III bedding) in accordance with ASTM D-2321. Bell holes shall be located at each pipe joint to insure proper pipe jointing. The Contractor shall undercut the trench 6-inches and fill the area to grade with crushed stone as specified for coarse concrete aggregate. Upon completion of the pipe installation, the Contractor shall properly "haunch" the pipe in order to provide the lateral support. The launching shall be accomplished by placing and compacting gravel under the pipe and up to the spring line. The compacted material shall fill all voids between the pipe wall and the edge of the excavation up to the spring line of the pipe.

The initial backfill of the pipe shall be performed in such a manner as to not disturb the grade or alignment of the pipe. This material shall be sandy material free from clods, rocks, roots, etc., and shall be carefully placed to a depth of 12 inches above the top of the pipe. This material shall be placed around the pipe by hand and lightly tamped into place to insure proper pipe support. If sandy material is not available from the materials excavated from the trench, the Contractor shall make arrangements to have material delivered to the site which meets this requirement. All costs associated with purchasing, hauling, stock piling, and placing the sand backfill shall be included in the unit price bid for the installation of the pipe.

After the pipe has been bedded as previously specified, additional backfill shall be placed and compacted to 85% standard proctor density. The Contractor shall submit to the Engineer prior to beginning construction, the method of backfill and compaction which he plans to use on the project for the Engineer's review and approval.

As the backfilling is being performed, all the construction debris shall be removed and the area cleaned up. After the ditch line is backfilled, the Contractor shall mound dirt over the ditch line to allow for additional settling. This mounding of dirt shall not in any way interfere with the natural drainage which would result in ponding of water after rains. The Contractor shall use a maintainer to dress up and level the area of construction and grade any washed areas after rains.

The Contractor shall maintain all backfilled ditches in a condition not hazardous to traffic from the time the ditch is backfilled until the job is accepted as finally complete by the Owner. The finished grade of the completed ditch line shall be the same as the original grade was before construction began or as shown on the plans.

Where the proposed sewer lines cross water lines, the construction shall be performed as specified elsewhere in these technical specifications. An absolute minimum clearance between the O.D. of the water and sewer lines shall be 6 inches.

J. Line and Manhole Tests:

1. **General:** The Contractor shall be required to make an air test on each section of gravity sewer line installed.
2. **Air Test:** Low pressure air testing shall be performed in accordance with ASTM C-824 and C-924.
 - a) **Leakage Allowance:** The Leakage allowance requirements of the air test shall be considered satisfied if the time required in seconds for the pressure to decrease from 3.5 pounds per square inch (psi) to 2.5 psi is not less than that shown in the applicable table. The duration of the test shall be calculated by the following formula and as summarized in Table No. One of this section.

Testing Time Required

$$T=(0.085*D*K)/Q$$

where:

T - time for pressure to drop 1.0 psi gauge in seconds

K - $0.000419*D*L$, but not less than 1.0

D=average inside pipe diameter in inches

L - length of line of same pipe size being tested, in feet

Q - rate of loss, 0.0015 cubic feet per minute per square foot internal surface shall be used

b) Testing Procedures

The section of pipe to be tested is to be plugged at each end. The ends of all branches laterals, wyes which are to be included in the test are to be sealed or plugged. All plugs shall be carefully braced to prevent slippage and blowout due to internal pressure. One of the plugs provided must have an inlet tap or other provision for connecting an air hose.

Connect one end of the air hose to the inlet tap on the plug and connect the other end of the hose to a portable air control device. The air control device shall consist of pressure gages and valves used to control the rate at which the air flows to the test section and to monitor the air pressure inside the pipe. The air control equipment can then be connected to a source of air supply such as a portable air compressor.

After the air hoses are properly connected, inject air into the test section. Monitor the air pressure so that pounds per square inch, gage (psig) may be recorded.

When the pressure inside the test section reaches 4.0 psig, throttle air supply so that the internal pressure is maintained between 4.0 and 3.5 psig for at least two minutes. These two minutes allow time for the temperature of the air to come to equilibrium within the pipe walls.

After the temperature has been allowed to stabilize for the two-minute period, the air supply should be disconnected and the pressure allowed to decrease to 3.5 psig. At 3.5 psig a stopwatch is to be started to determine the time required for the pressure to drop to 2.5 psig. The section of pipeline being tested shall be considered acceptable if the time required in seconds for the pressure to decrease from 3.5 to 2.5 psig is equal to or greater than that shown in Table one of these specifications.

Groundwater will be measured where it is known to exist and correction made to the allowable table as set out in the following paragraphs:

At the time the sewer line is installed, the Contractor shall install a 1-1/2-inch diameter standpipe from the top of the sewer line to a point at or above ground level to be used to measure the groundwater. The bottom of the standpipe shall be perforated for one foot and enclosed with loose gravel to allow the groundwater to seek its natural level within the standpipe. The top of the standpipe shall be capped to

prevent foreign material from entering. Generally, a 1-1/2-inch monitor standpipe shall be installed in each run of pipeline between manholes.

Immediately prior to the line acceptance test, the groundwater shall be determined by removing the cap and measuring the height in feet of water over the invert of the sewer line. This height in feet shall be multiplied by 0.43 to establish the pounds of pressure that will be added to the wall readings. For example, if the height of water is 7 feet, then the added pressure will be 3 psig. This increases the 3.5 psig to 6.5 psig and the 2.5 psig to 5.5 psig. The allowable drop of 1 pound in the timing remains the same. If possible, the standpipe should be removed after the sewer line is accepted.

The test may be stopped if no pressure loss has occurred during the first 25 percent of the calculated testing time. If any pressure loss or leakage has occurred during the first 25 percent of the testing period, then the test shall continue for the entire test duration as outlined or until failure.

3. **Deflection Testing:** The Contractor shall perform deflection testing of the line as described in this section of the Technical Specifications. No sooner than **30 days**, and immediately thereafter the pipe has been installed and backfilling has been completed, tests for deflection shall be made. A deflection of more than 5.0 percent of the inside diameter of the pipe shall be cause for rejection and the line will be removed and replaced at the Contractor's expense. A GO NO-GO Deflection Testing Mandrel, to be furnished by the Contractor and certified by the Engineer, shall be used. The rigid mandrel shall have an outside diameter (O.D.) equal to 95 percent of the inside diameter (I.D.) of the pipe. The inside diameter of the pipe, for the purpose of determining the outside diameter of the mandrel, shall be the average outside diameter minus two minimum wall thicknesses for O.D. controlled pipe and the average inside diameter for I.D. controlled pipe, all dimensions shall be per appropriate standard. Statistical or other "tolerance packages" shall not be considered in mandrel sizing.

The rigid mandrel shall be constructed of a metal or a rigid plastic material that can withstand 200 psi without being deformed. The mandrel shall have nine or more "runners" or "legs" as long as the total number of legs is an odd number. The barrel section of the mandrel shall have a length of at least 75 percent of the inside diameter of the pipe. A proving ring shall be provided and used for each size mandrel in use.

The testing shall consist of the following:

- a) Completely flush the line, if required, making sure the pipe is clean of any mud or debris that would hinder the passage of the mandrel.
- b) During the final flushing of the line, attach a floating block or ball to the end of the mandrel pull rope and float the rope through the line.
- c) After the rope is threaded through the line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.
- d) Connect a retrieval rope to the back of the mandrel to pull it back if necessary.
- e) Remove all slack in the pull rope and place a tape marker on the rope at the ends of the pipe where the mandrel will exit, determining the location of the mandrel in the line.
- f) Using manhole guide pulleys, draw mandrel through the sewer line. If any irregularity or pipe deformation exceeding the allowable 5 percent is encountered in the line, the line shall be uncovered at that point.
- g) If an obstructed or over-deflected section is found, locate it; dig down and uncover the pipe; inspect the pipe; if any damaged pipe is found, replace it. If pipe is not damaged, re-round the pipe, replace and thoroughly tamp the embedment and initial backfill; replace remainder of backfill.
- h) Re-test this entire section for deflection after additional 30-day waiting period. No sewer line shall be placed into service until the deflection testing has been completed as required.
- i) Any pipe removed shall be replaced by use of gasket repair couplings.
- j) Each and every deflection test shall be conducted in the presence of the Owner's or Engineer's representative.
- k) The mandrel test shall be performed without the use of mechanical pulling devices.

TABLE NO. ONE
MINIMUM TIME FOR VARIOUS PIPE SIZES

Pipe Diameter (inches)	Minimum Time (seconds)	Length For Minimum Time (feet)	Time For Longer Length (seconds)
6	340	398	0.855(L)
8	454	298	1.520(L)
10	567	239	2.374(L)
12	680	199	3.417(L)
15	907	149	6.09(L)
18	1020	133	7.67(L)
24	1360	99	13.74(L)
30	1700	79	21.52(L)

4. **Manhole Testing:** The Contractor shall be required to test each manhole installed as a part of this project to final acceptance of the project. The manholes shall be tested independently of the sewer lines. Manholes shall be tested using one of two methods. If the Contractor chooses, he may perform a vacuum test on the manhole as described herein.

If vacuum testing is to be performed, it shall be performed immediately after assembly and prior to backfill. If the manhole is to be tested after construction, the Contractor shall be required to excavate around the entire manhole. Prior to testing, all lift holes and exterior joints shall be plugged with an approved non-shrink grout. No grout shall be placed in horizontal joints prior to testing. All pipes entering the manhole shall be plugged, taking care to securely brace the plugs from being drawn into the manhole. All stub outs, manhole boots and pipe plugs shall be secured to the top of the manhole with a minimum 60-inch/pound torque wrench. The test head shall be placed at the inside of the top of the cone section and the seal inflated in accordance with the manufacturer's recommendations. After the work described above has been performed, a vacuum of 10 inches of mercury shall be measured for the vacuum to drop to 9 inches of mercury. The manhole shall pass if the time is greater non-shrink grout while the vacuum is still being drawn. If the manhole fails a second time, repairs should again be made and the manhole shall be tested by means of a hydrostatic test which complies with the methods specified herein. If any manhole fails the hydrostatic test, after failing the vacuum test twice, the Contractor shall consider replacing the manhole. If

the Contractor chooses to attempt to repair the manhole, the manhole must be retested by means of the hydrostatic test.

The second test method which the Contractor may use is a hydrostatic exfiltration test. If this test procedure is chosen by the Contractor, all pipe penetrations into the manhole shall be plugged and the manhole filled with water. As with the ball test described previously, the water for the manhole test may be obtained from a fire hydrant in the area or the Contractor shall use trucks to haul the water to the manhole for use in testing. The maximum leakage for hydrostatic testing shall be 0.025 gallons per foot diameter per foot of manhole depth per hour. After filling of the manhole, the water level in the manhole shall be maintained full for one hour. If concrete manholes are used, a wetting period of 24 hours will be allowed, with the manhole being refilled at the end of the 24-hour period with the test beginning at that time. If a manhole fails the exfiltration test, it shall be repaired and retested using the same procedure as outlined above. All manhole tests shall be performed in the presence of the Engineer or his representative.

- a) **Inspection:** During the construction of sewer lines, the City of Hallsville's Water Superintendent will oversee the work. The Water Superintendent shall have the authority to approve or disapprove the installation of all pipe, manholes, and services. Any additions or revisions to the work shall be at the discretion of the Water Superintendent. A complete inspection report must be kept daily and signed by the Water Superintendent. The report shall be turned into the City of Hallsville at the end of each work week. The Water Superintendent and Mayor shall have the final approval or disapproval or make any changes at their discretion. The City may also charge an inspection fee at the discretion of the City.
- b) **Plans and Record Plans:** A complete set of Plans and Specifications shall be prepared by a registered engineer. The documents and drawings shall be signed and sealed by said engineer prior to submitting the documents to the City for review. Upon completion of the construction, a set of record plans shall be submitted to the City which document any changes during the construction of the project.
- c) **Seeding and Erosion Control:** The Contractor shall be responsible for seeding areas disturbed during construction and shall maintain erosion control measures as directed by the Project Engineer. If applicable, a Stormwater Pollution Prevention Plan may be

prepared for the project and adhered to at the discretion of the Project Engineer.

- d) **Warranty:** The Contractor shall provide a 2-year warranty for all work performed. He shall be responsible for any repairs or maintenance to the sewer line and the ditch lines.

4. PAVEMENT DESIGN

1. **General:** The purpose of these guidelines is to guide the engineer in design and preparation of plans and specifications for the construction of public paving and drainage improvements. All paving and drainage improvements shall be designed and constructed in accordance with standard details of the Texas Department of Transportation (TxDOT) of the City of Hallsville. Drainage facilities shall be designed using TxDOT culvert and storm drain design standards unless otherwise approved by the City of Hallsville. Materials and construction methods for paving and drainage work (technical specifications) shall conform to “State Department of Highways, Streets, and Bridges,” except where specifically superseded herein. Where any questions arise as to the interpretations of the standards of design, the decision of the City Engineer will be final.
2. **Roadway Design:**
 - a) **ROADWAY PAVEMENT DESIGN:** The City of Hallsville does not have a typical or standard pavement section, therefore, this section presents the method for the thickness design of roadway pavements. It contains the design requirements for various street widths and traffic conditions, various subgrade support soils, and various types of pavements materials. Pavement design options are based on a combination of the above variables.
Step 1: Determine the structural support of the roadway’s existing subgrade. The subgrade is defined by having a California Bearing Ratio Test (CBR) performed in accordance with ASTM Method D 1883-73 (Standard Test Method for Bearing Ratio of Laboratory - Compacted Soils) by a geotechnical and construction materials testing lab.

Locations of boring to obtain soil sample are to be placed along the proposed roadway to provide a representative view of the existing

subgrade. Laboratory tests are to be performed on these representative's soil samples to determine natural moisture content, liquid and plastic limits, and percent passing the No. 200 sieve. These test are to be performed in accordance with ASTM Methods D 2216, D 4318, and D 422, respectively. Additional CBR tests are to be performed where above lab test on soil samples of the existing subgrade reveal variations in the subgrade soil according to the "Unified Soil Classification". Unified Soil Classifications are to be determined using procedures in accordance with ASTM Method D 2487. Additional CBR tests are to be performed on soil samples where roadway subgrades produce cuts into varying subgrade soils.

The existing subgrade shall always be able to provide a stable working platform when the soil is compacted to a density of 95% of standard proctor at optimum moisture content according to ASTM Method D 698. All organic and unstable material is to be removed during construction and replaced with select fill.

Step 2: Identify the class of the street to be built. Street classifications are determined by the following attributes: Master Street Plan designation. Zoning, existing and future traffic volumes, and street width (See Table II-A-1). Choose the street type which matches the design roadway's attributes. If a design roadway's attributes fall between street classes, for example, a street that has both residential and commercial zoning, choose the street class which produces the most stringent pavement design.

TABLE 4 - A - 1
STREET CLASSIFICATIONS

Class	Zoning	Width (F-F)	Maximum Avg. Vehicle Per Day	Percent Trucks	Avg. Gross Weight (lbs)	Single Axle Load Limit (lbs)
Cul-de-Sac	Residential	30'	500	2	20,000	20,000
Standard	Residential	30'	4,800	5	25,000	20,000
Collector	Residential	40'	9,600	5	30,000	20,000
Collector	Commercial	40'	11,200	15	30,000	20,000
Collector	Industrial	40'	9,600	20	30,000	20,000
Arterial	All	64'	24,300	15	30,000	20,000

- 1) The maximum average vehicle per day numbers were obtained from the 1987 Tyler Urban Transportation Study for a level of service "C". These values were developed from the Texas State Department of Highways and Public Transportation 1985 Highway Capacity Manual.
- 2) The Asphalt Institute, U.S. Federal Highway Administration.
- 3) The Asphalt Institute, U.S. Federal Highway Administration.

Step 3: Determine the total thickness of the pavement section for each type of pavement design. Three pavement design tables are provided, (see tables II-A-2, II-A-3, and II-A-4); one for flexible base pavement, one for full-depth hot mix asphaltic concrete pavement, and one for concrete pavement. Each design table is divided into street classification columns and subgrade CBR% rows. Using the street class identified in Step 2, follow this column down until it intersects the subgrade CBR% rows determined in Step 1. This number represents the total thickness of pavement section, in inches, to be used.

Step 4: Determine the thickness of base. The minimum surface thickness is found at the bottom of each street class column. To obtain the thickness of base, subtract the surface thickness from the total thickness of the pavement section. On roadways that have an existing subgrade CBR% greater than 12, step four often provides the most economical design and the design process could be stopped, (see Example Problem II-A-1), however, for roadways that have subgrade CBR% less than 12, the design process should continue to provide an economical design.

Step 5: Select a suitable subbase material if the process is continued. Subbase material can be the existing subgrade treated with lime or cement, or a select fill material, such as iron ore topsoil. The subbase material is sampled and the subbase strength is defined by having a CBR test performed.

TABLE 4 - A - 2
FLEXIBLE BASE PAVEMENT DESIGN
(DSIGN PERIOD = 20 YEARS)

TOTAL PAVEMENT SECTION					
SUBGRADE OR SUBBASE CBR%	RESIDENTIAL 32" F-F INCHES	COLLECTOR 39' & 52' F-F INCHES	ARTERIAL ROAD 34' WIDTH INCHES	ARTRIAL STREET 64' & 40' F-F INCHES	ARTERIAL BLVD 100' & 76' F-F INCHES
2	32	35	36.5	38	39
3	24	27.5	29	30	31
4	21	23	24	24.5	25
5	18	19.5	20.5	21	21.5
6	16	17.5	18	18.5	19
7	14	16	16.5	17	17.5
8	13	14.5	15	15.5	16
9	12	13.5	14	14.5	15
10	11	12.5	13	13	13.5
12	9.5	10.5	11	11.5	12
15	8	9	9.5	10	10
20	7.5	8	9	9.5	10
25	7.5	8	9	9.5	10
MINIMUM SURFACE & BASE SECTION					
HMAC	2	2	2	2.5	3
BASE	5.5	6	7	7	7
MINIMUM STABILIZED SUBBASE SECTION					
	6	6	6	6	6
FLEXIBLE BASE SPECIFICATIONS					
Texas State Department of Highways & Public Transportation "1982 Standard Specifications for Construction of Highways, Streets, and Bridges" Items 248 & 249 shall govern except California Bearing Ratio Tests will replace Tri-axial Classes and the maximum PI=9. The base shall be compacted to a density of 95% of modified proctor at optimum moisture content according to ASTM Method D 1557.					
Grade	1,2,3	1,2,3	1,2,3	1,2	1,2
Minimum CBR% of Base	40	60	70	70	80

Step 6: Determine the new thickness of base and surfacing. Taking into action the subbase CBR% value and using the pavements design table again, follow the same street class column down until it intersect the

thickness, in inches, of base and surfacing. The base thickness is found by subtracting the surface thickness from the total thickness of base and surfacing.

Step 7: Determine the thickness of the subbase material selected in Step 5. This is found by subtracting the total thickness of base and surfacing in Step 6 from the total thickness of base and surfacing in Step 6 from the total thickness of the pavements section in Step 3. However, the minimum thickness of a subbase material is six (6") inches.

Step 8: Determine the overall pavement section design. Add the surface thickness and base thickness found in Step 7 (see Example Problem II-A-2).

Step 9: Design submittal. Submit on the forms provided (see form II-A-9) the roadway pavement section designs performed and the road way pavement design recommended to the City Engineer for his approval. Also submit the results of the CBR test performed by a geotechnical and construction materials testing lab.

TABLE 4 - A - 3
FULL DEPTH HMAC PAVEMENT DESIGN
 (DESIGN PERIOD = 20 YEARS)

TOTAL PAVEMENT SECTION					
SUBGRADE OR SUBBASE CBR%	RESIDENTIAL 32" F-F	COLLECTOR 39' & 52' F-F	ARTERIAL ROAD 34' WIDTH	ARTERIAL BLVD 100' & 76' F-F	
	INCHES	INCHES	INCHES	INCHES	
2	12.5	14	15.5	16.5	
3	10.5	12	13.5	14	
4	9.5	10.5	12	12.5	
5	8.5	9.5	11	11.5	
6	8	9	10	10.5	
7	7.5	8.5	9.5	10	
8	7.5	8	9	9.5	
9	7	7.5	8.5	9	
10	6.5	7.5	8	9	
12	6	7	7.5	8	
15	5.5	6.5	7	7.5	
20	5.5	6	7	7	
25	5.5	6	6.5	7	
MINIMUM SURFACE & BASE SECTION					
TYPE "D"	1.5	2	2	2.5	3
TYPE "B"	4	4	4.5	4.5	4
MINIMUM STABILIZED SUBBASE SECTION					
	6	6	6	6	6

Hot Mix Asphaltic Concrete Specifications:

Texas State Department of Highways & Public Transportation "1993 Standard Specifications for Construction of Highways, Streets, & Bridges" Item 340 with coarse aggregate being crushed so that a minimum of 50% of particles retained on \$3 sieve shall have more than a crushed face when tested in accordance with Test Method Tex-413 A (Particle Count).

TABLE 4 - A - 4
CONCRETE PAVEMENT DESIGN
 (DESIGN PERIOD = 35 YEARS)

TOTAL PAVEMENT SECTION						
SUBGRAD E OR SUBBASE CBR%	RESIDENTIAL 30 F-F		COLLECTOR 39' & 52' F-F	ARTERI AL ROAD 34" WIDTH	ARTERIA L STREET 64' & 40' F-F	ARTERIA L BLVD 100' & 76' F-F
	Cul- de- sac	Standard				
	Inche s	Inches				
2	7	8	9	10	11	11
3	6	7	8	9	10	10
4	6	7	8	9	10	10
5	6	6	7	8	9	9
6	6	6	7	8	9	9
7	6	6	7	8	9	9
8	6	6	7	8	9	9
9	6	6	7	8	9	9
10	5	6	7	8	8	8
12	5	6	6	7	8	8
15	5	6	6	7	7	7
20	5	5	6	7	7	7
25	5	5	6	6	7	7
MINIMUM STABLIZED SUBBASE SECTION						
	6	6	6	6	6	6

Concrete Specifications:

Texas State Department of Highways & Public Transportation "1993 Standard Specifications for Construction of Highways, Streets, and Bridges," Item 360 within a minimum compression strength of 3000 PSI at 28 days (5 sacks of cement per cubic yard) with #3 rebar on 18" c-c each way.

FORM 4 - A - 9

**CITY OF HALLSVILLE
ROADWAY PAVEMENT SECTION DESIGN**

SUBDIVISION/PROJECT NAME: _____

STREET NAME: _____

STEP 1: California Bearing Ratio test (CBR) of Existing Subgrade

Boring #	Station #	Offset Distance	Depth of Material Tested	CBR%

STEP 2: Street Classification: _____

STEP 3: Total Thickness of Pavement Section.

Flexible Base
(Table II-A-2)

Full Depth HMA
(II-A-3)

Concrete
(II-A-4)

STEP 4: Thickness of Base

Flexible Base

Full Depth HMA

Total thickness of Pavement
Section (Step 3)

Surface Thickness

(-)

(-)

Base Thickness _____
 STEP 5: Subbase material (if used) _____

	Flexible Base	Full Depth HMAC	Concrete
Type of Subbase Material	_____	_____	_____
CBR% of Subbase	_____	_____	_____

FORM 4 - A - 9

**CITY OF HALLSVILLE
 ROADWAY PAVEMENT SECTION DESIGN**

STEP 6: Thickness of Base & Surfacing. (If a subbase is used)
 Flexible Base Full Depth HMAC Concrete

Total Thickness of Base & Sub surfacing	_____	_____	_____
Surface Thickness (-)	_____	_____	_____
Base Thickness	_____	_____	_____

STEP 7: Subbase Material Thickness (If a subbase is used)
 Flexible Base Full Depth HMAC Concrete

Total Pavement Section Thickness (Step 3)	_____	_____	_____
Total Thickness of Base Surfacing (Step 6) (-)	_____	_____	_____
Subbase Thickness (Minimum 6")	_____	_____	_____

STEP 8: Overall Pavement Section Design
 Flexible Base Full Depth HMAC Concrete

Surface Thickness	_____	_____	_____
-------------------	-------	-------	-------

Base Thickness _____

Subbase Thickness _____

RECOMMENDATION: MATERIAL	THICKNESS	
SURFACE	_____	_____
BASE	_____	_____
SUBBASE	_____	_____
SIGNATURE: _____		
TITLE: _____		
DATE: _____		

DESIGN GUIDELINES FOR SUBDIVISION IMPROVEMENTS
CITY OF HALLSVILLE, TEXAS

A. WIDTH: Pavement widths shall in no case be less than the widths shown in the following table:

<u>Type Street</u> <u>Width</u>		<u>Minimum</u> <u>Paving Width*</u>	<u>R.O.W.</u>
Arterial Boulevard	(6-lane)	100'	130'
	(4-lane)	76'	130'
Arterial Street	(4-lane w/turn lane)	64'	100'
	(2-lane w/turn lane)	40'	72'
Arterial Road Rural/Suburban	(2-lane)	34'	60'
Collector Street	(4-lane)	52'	72'
	(2-lane w/turn lane)	39'	60'
Residential		30", or 24" **	
Alley (residential)		15'	
(other than residential)		20'	

(Dimensions are from face of curb to face of curb or edge of pavement centered in right-of-way.)

** In subdivisions with all lots greater than two (2) acres.

- B. GRADES: Profile grades shall be set on top of curbs or on roadway centerline for streets without curb and gutter.

Profile grades shall not be less than 0.5 feet rise or fall in one hundred feet (10%). Grade changes exceeding one per cent (1%) shall be made with vertical curves. To satisfy requirements of minimum sight distance, comfort, and appearance, the City has adopted AASHTO criteria for minimum vertical curve length (1) in feet:

$$L=KA$$

K = Factor from table below

A = Algebraic difference of grades in percent

Design speed established by City Engineer:

DESIGN SPEED	30	35	40	45	50	55	60	65
Minimum K Value								
Crest Vertical Curve		30	40	60	80	110	150	190
230								
Sag Vertical Curve	40	50	60	70	90	100	120	130

- C. Top of curb profile shall be set low enough for adjacent properties to drain into the street. Curb separation shall not exceed crown height except in situation of super elevated curves of divided thorough fares shall have straight grade from median curb to outside curb rather than parabolic crown on each lane.
- D. Buried pipe, cables, or other obstruction shall not exceed into the subgrade of a street and an additional six (6) inches of cover shall be provided whenever possible.
- E. STREET DESIGN CRITERIA:

Horizontal Alignment:

Street alignment design shall consider not only the best use of the land, but also traffic safety considerations. Plan and profile of proposed street must be approved by the City Engineer with respect to horizontal curve length, degree of curvature, curve super elevation, and other elements of traffic safety prior to approval of the subdivision plans by the City Engineer. Minimum radius and maximum degree of curvature shall be governed by TxDOT design standards.

Reserve curves on Thoroughfares and Collector streets shall be separated by a minimum tangent of one hundred (100) feet.

Cul-de-sacs, Dead-End Streets:

The maximum length of cul-de-sacs or dead-end streets with a permanent turnaround shall be six hundred (600') feet, except under usual conditions with the approval of the City Council.

Turnarounds are to have a minimum right-of-way width of 100 feet and a minimum of pavement width of 80 feet for a single-family use, and a minimum right-of-way width of 120 feet and a minimum pavement width of 100 feet for all other uses.

Temporary paved turnarounds are to be provided at ends of streets more than one lot deep that will be extended in the future. The following note should be placed on the Plat: "cross-hatched area is temporary easement for turnaround until street is extended (give direction) in a recorded plat".

No other dead-end streets shall be allowed, except as herein provided.

Street Intersections:

Except where existing conditions will not permit, all streets shall intersect at a 90-degree angle. Variations of more than 10-degrees on Residential or Local Streets and more than 5-degrees on Collectors and Thoroughfares must have the approval of the City Engineer.

Acute angle intersections approved by the City Engineer are to have 25 foot or greater radii at acute corners.

Each new street intersecting with or extending to meet an existing street shall be tied to the existing street on centerline with dimensions and bearing to show relationship.

Driveway cuts or entrances to single-family or two-family uses shall not be allowed along thoroughfares, unless a siding street, or an alley with natural screening device, is provided outside the pavement of the Thoroughfare.

- F. Curb and gutter is required on all street within and abutting the development unless variances have been granted by the City Council.
- G. Street plans and construction for a development unit must include all streets platted in that unit to the limits of that unit.
- H. Curb returns shall have a minimum radius of 20 feet measured of the face of curb. Greater radii may be required in skewed intersections or in industrial developments. Curb returns for driveways shall have a minimum radius of 10 feet.

- I. All medians, if approved by the City Engineer, shall be landscaped with grass and trees and shall have automatic sprinkler system and shall be maintained by the homeowner's association.
- J. The streets shall have street lights to be paid for by the Developer. The street lights for residential areas shall be electric company standard lights and shall be mounted with 175-watt mercury vapor lamps or equivalent maximum distance between lights is 400 feet, or at least one at each intersection, whichever is less.
- K. The Developers shall reimburse the City of Hallsville for providing and placing street signs in accordance with the current City standards.
- L. Concrete valley gutters are required if Stormwater runoff is allowed to cross through an intersection.

I. PAVING PLANS:

- A. Paving plans shall be prepared on nominal 11" X 17" or 22" x 34" Plan Profile sheets. Drafting medium, lettering, layout, etc., are all optional except to the extent required herein.
- B. Plan shall be drawn to a scale of not more than two hundred feet to the inch (1" = 200') on 11"x17" sheets and fifty feet to the inch on 22"x34" sheets for new streets and shall include the following:

- 1) Street pavement width, right-of-way width, and stationing from left to right on sheet of proposed and adjacent existing streets.
- 2) Street names, centerline bearings, and existing topographic features, such as utility poles, fire hydrants, culverts, inlets, lakes, etc.
- 3) Angles and stations of intersections.
- 4) North arrow.
- 5) Lot lines, lot numbers, subdivisions lines, and city limits lines.
- 6) Curb radii, special curb grade points, such as curb returns, top of inlet, etc.
- 7) Sheet pay quantity table, special notes.
- 8) Underground utilities in so far as possible.
- 9) Location of soil borings.
- 10) Graphic scale.
- 11) Directional arrows showing direction of gutter drainage.
- 12) Engineer's seal and signature.

- C. Profile shall be drawn to a scale to match the plan view horizontally and not more than five feet to the inch (1" = 5") vertically. Paving profiles shall include:

- 1) Existing ground profiles along the centerline and each right-of-way line.

- 2) Proposed top of curb profile line and existing top of curb line where curb has previously been built. If proposed street does not curb and gutter (for lot sizes exceeding two acres) show property centerline and ditch profiles.
 - 3) Vertical curve data including curve length, external distance, "K" value, and stationing and elevations for vertical point of intersection (VPI), point of curve (VPC), point of target (VPT), and low point or high point. Percent grades shall be shown on all targets.
 - 4) Benchmark (U.S. Coast and Geodetic Datum) description and elevations, on each sheet with temporary benchmarks set at minimum intervals of 300 feet.
 - 5) Top of curb grades shall be shown at not more than 500 foot intervals.
3. **Inspection:** During the construction of water lines, the City of Hallsville will provide an inspector to oversee the work. If requested by the City, the Developer must provide an experienced inspector from the design's engineer's office to inspect all installations of water and sewer lines and materials from the beginning of the project to its completion. The inspector shall have the authority to approve or disapprove the installation of all pipe, valves and hydrants. Any additions or revisions to the work shall be at the discretion of the City Inspector or the Water Superintendent. A complete inspection report must be kept daily and signed by the inspector. The report shall be turned into the City of Hallsville at the end of each work week. The Water Superintendent and the Mayor shall have the final approval or disapproval or make any changes at their discretion. The City may also charge an inspection fee at the discretion of the City.
4. **Plans and Record Plans:** A complete set of Plans and Specifications shall be prepared by a registered engineer. The documents and drawings shall be signed and sealed by said engineer prior to submitting the documents to the City for review. Upon completion of the construction, a set of record plans shall be submitted to the City which documents any changes during the construction of the project.
5. **Seeding and Erosion Control:** The Contractor shall be responsible for seeding areas disturbed during construction and shall maintain erosion control measures as directed by the Project Engineer. If applicable, a Stormwater Pollution Prevention Plan and be prepared for the project and adhered to at the direction of the Project Engineer.
6. **Warranty:** The Contractor shall provide a 1-year warranty for all work performed. He shall be responsible for any repairs or maintenance to the water line and the ditch lines.

5. DRAINAGE DESIGN

1. **General:** All storm water flow calculations and design of drainage structures to be constructed within the City limits of Hallsville shall be prepared in accordance with the Subdivision Ordinance and policies set forth by the FEMA National Flood Insurance Program, the Environmental Protection Agency, the US Army Corps of Engineers. All hydrologic and hydraulic design shall conform to Texas Department of Transportation (TxDOT) hydraulic design criteria except as noted herein. All storm drainage studies and drainage structure design shall be prepared by a registered professional engineer. Drainage improvements to include storm water detention on site. The engineering design shall be performed in such a way that post development storm water discharges shall not exceed pre development levels. Detention shall be designed to good engineering standards and shall be easily maintained.

Hydrology

1. **General:** All storm water flow calculations and design of drainage structures to be constructed within the City limits of Hallsville shall be prepared in accordance with the Subdivision Ordinance and policies set forth by the FEMA National Flood Insurance Program, the Environmental Protection Agency, and US Army Corps of Engineers. All hydrologic and hydraulic design shall conform to Texas Department of Transportation (TxDOT) hydraulic design criteria except as noted herein. All storm drainage studies and drainage structure design shall be prepared by a registered professional engineer.

Floods are usually considered in terms of peak runoff or discharge in cubic feet per second (cfs) and hydrographs as discharge per time. For the design of facilities such as storm drain systems, culverts, and bridges, peak discharge shall be used. Where flood routing or detention storage is designed, discharge hydrographs shall be provided.

2. **Drainage Area:** Drainage area size and shape should be determined using field surveys and/or topographic maps. Topography, soil type, vegetative cover, and future land use need to be considered when estimating runoff characteristics.
3. **Design Frequency:** The following table presents the minimum design frequency to use for each structure type.

Structure Type	Design Frequency	Check Flood
Curb Inlets	5 yr	25 yr
Sag Grate or Drop Inlets	25 yr	50 yr
Storm Sewer Pipe	25 yr	50 yr
Culverts	25 yr	50 yr
Bridges	50 yr	100 yr

Drainage Channels	50 yr	100 yr
Concrete Lined Channels	25 yr	100 yr

*and/or overtop up to 500 yr

4. Hydrologic Methods:

One of the following hydrologic methods shall be used to calculate ultimate design discharges.

Rational Method

The Rational Method should be used for estimating discharges for drainage areas up to 200 acres and is limited to simple watersheds where no significant flood storage occurs.

The Rational formula is expressed as: $Q = CIA$

where:

Q = maximum rate of runoff (cfs)

C = runoff coefficient

I = average rainfall intensity (in/hr)

A = drainage area (acre)

The following table suggests ranges of runoff coefficient (C) values that shall be used in calculating runoff:

Drainage Area Type	Runoff Coefficient (C)
Business	
Downtown areas	0.70 - 0.95
Industrial	
Light	0.40 - 0.80
heavy	0.60 - 0.90
Residential	
Single family < 1 acre	0.40 - 0.50
Single family > 1 acre	0.30 - 0.50
Multi-units	0.40 - 0.60
Apartments	0.50 - 0.70
Parks, cemeteries	0.15 - 0.25
Schools, playgrounds	0.30 - 0.40
Unimproved properties	0.20 - 0.35
Lawns	0.15 - 0.25

Streets	0.85 - 0.95
Roofs	0.75 - 0.95

The rainfall intensity (I) is the average rainfall rate in in/hr. for a specific rainfall duration and selected frequency. The duration shall be assumed to be equal to the time of concentration. Intensity for a given frequency is calculated using the following equation:

$$I = \frac{b}{(tc+d)^e}$$

where:

tc - time of concentration in minutes

e,b,d - coefficients for specific frequencies based on rainfall frequency-duration data contained in the National Weather Service Technical Paper 40 (TP 40)

Minimum time of concentration (tc) shall be 10 minutes to limit occurrences where the calculated rainfall intensity is unrealistically high.

NRCS Runoff Curve Number Methods

The Natural Resource Conservation service (formerly Soil Conservation Service) developed runoff curve number method as a means of estimating the amount of rainfall appearing as runoff.

Technical Release 20 (TR 20) employs the Runoff Curve Number Method and a dimensionless unit hydrograph to provide estimation of peak discharges and runoff hydrographs from complex watersheds. The procedure is applicable when the effects of urbanization, channel storage, flood control storage, and multiple tributaries.

Technical Release 55 (TR 55) is a simplified form of TR 20 and is used for estimating peak discharges for small watersheds where the time of concentration is less than 10 hours. TR 55 also includes a unit hydrograph procedure.

5. Hydrologic Method Selection

The hydrologic method selected for use must be in conformance with the conditions of the watershed.

Unit hydrograph methods using TR 20, HEC-1, or HEC-HMS shall be used when there are appreciable flood control facilities within the watershed.

Rational Method or TR 55 shall be used for drainage areas less than approximately 200 acres.

TR 55 may be used on any watershed where the time of concentration is less than 10 hours, except in those instances where unit hydrograph is required.

Hydraulics

Design of culverts, storm sewer, bridges, storm drains and other hydraulic facilities shall be in accordance with generally accepted engineering practice.

Inlets shall be designed such that the ponded width of the street flow does not encroach on the middle 10-foot width of roadway and does not overtop the curb during a 25-year frequency storm. Open channels and flumes from curb will not be allowed.

All storm sewer pipe shall be reinforced concrete pipe conforming to ASTM-76, unless otherwise approved by the City Engineer. Minimum pipe size shall be 18 inches inside diameter. All storm sewer pipe not in roadway right of way shall be located in an easement unless otherwise approved by the City Engineer.

Minimum inlet opening is 5-feet and shall conform to TxDOT standard inlet details unless otherwise approved by the City Engineer. All inlets shall have manhole rings and covers.

Drainage basins shall not be diverted into other drainage basins.

The drainage outfall shall be included in the design of storm sewer or culvert structures.

The Developer shall be responsible for obtaining necessary easements for construction on private property. It shall be the responsibility of the Developer to adequately contain and control discharge until the point that it can be released without adversely affecting adjacent property.

- 6. Inspection:** During the construction of water lines, the City of Hallsville's Water Superintendent will oversee the work. Any additions or revisions to the work

shall be at the discretion of the Water Superintendent. A complete inspection report must be kept daily and signed by the Water Superintendent. The report shall be turned into the City of Hallsville at the end of each work week. The Water Superintendent and the Mayor shall have the final approval or disapproval or make any changes at their discretion. The City may also charge an inspection fee at the discretion of the City.

7. **Plans and Records Plans:** A complete set of Plans and Specifications shall be prepared by a registered engineer. The documents and drawings shall be signed and sealed by said engineer prior to submitting the documents to the City of review. Upon completion of the construction, a set of record plans shall be submitted to the City which documents any changes during the construction of the project.
8. **Seeding and Erosion Control:** The Contractor shall be responsible for seeding areas disturbed during construction and shall maintain erosion control measures as directed by the Project Engineer. If applicable, a Stormwater Pollution Prevention Plan and be prepared for the project and adhered to at the direction of the Project Engineer.
9. **Warranty:** The Contractor shall provide a 1-year warranty for all work performed. He shall be responsible for any repairs or maintenance to the water line and the ditch lines.