

CITY OF ODESSA



STANDARDS AND REQUIREMENTS

FOR

**STREET, ALLEY, WATER, SEWER
AND DRAINAGE IMPROVEMENTS**

ADOPTED SEPTEMBER 23, 2003

STREET, ALLEY, WATER, SEWER AND DRAINAGE IMPROVEMENTS
STANDARDS AND REQUIREMENTS

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ARTICLE I - GENERAL PROVISIONS

Section 1. Requirements

The developer of a subdivision shall furnish and cause to be constructed improvements in accordance with the requirements, standards and specifications set forth in Article II and III, together with any other improvements set forth in any subdivision improvements agreement executed in connection with the plat or replat approval of said subdivision.

Section 2. Submission of Plans

The developer's engineer shall submit complete plans for street, alley, water, sewer, and drainage improvements on reproducible transparent sheets, 23" x 36" in size, along with all data and calculations related to improvements in the subdivision, and such plans shall show all existing or proposed surface and sub-surface improvements and obstructions. Plans and profiles shall be shown at scales not less than 1" to 50 feet horizontal and 1" to 5 feet vertical. Plans shall show ready for construction, line and grade stakes will be set by the developer's surveyor; but these stakes will not be set until after the developer's surveyor has properly staked on the ground with iron pins all points of curves, points of tangency, and block corners needed to install public improvements and all other utilities to serve the subdivision. After construction, all lot corners within the subdivision will be staked as required by law. After improvements have been staked, the developer's engineer shall furnish the City cut sheets for all improvements including cut sheets for dirt alleys.

All construction involving City infrastructure and/or City participation shall be let or approved by the City of Odessa and prepared upon the City of Odessa's standard specifications for materials and performance and in compliance with all applicable City, State, and Federal requirements.

After construction of improvements, digital submittals of as-built drawings will be submitted to the City Engineer within 90 days.

Section 3. Subdivision Improvements Agreement

Prior to the approval of the final plat or replat of any subdivision for which improvements are required under the ordinances of the City of Odessa, there shall be a subdivision improvements agreement executed by the developer and the City of Odessa setting forth the improvements required in connection with said subdivision. Such improvements shall include street, alley, water, sewer, drainage and any other applicable public improvements. The subdivision improvements agreement shall grant a contract lien to the City of Odessa upon the property contained in the subdivision securing the costs and expenses of installing and constructing the required subdivision improvements. In lieu of the requirement for a lien in the subdivision improvements agreement, the developer shall have the option of securing the estimated costs and expenses for the required subdivision improvements by a bank escrow agreement, a bank letter of credit, the deposit with the City of a bank cashier's check, a developer's subdivision bond or any other security device approved by the City Council at the time of its approval and ratification of the subdivision improvements agreement.

In connection with the contract lien created by a subdivision improvements agreement, the Director of Finance of the City of Odessa shall be authorized to execute a release of all or any portion of such subdivision from the lien upon verification by the Director of Public Works that such release will not impair sufficient security of the City concerning the required subdivision improvements due to partial or full completion of the required improvements or due to other applicable consideration.

ARTICLE II - STREET AND ALLEY IMPROVEMENTS

Section 1. Duty to Construct

The developer of a subdivision shall furnish and construct all paving improvements therein, including drainage, street paving, and any required alley paving, in accordance with the applicable standards herein established. All dirt alleys shall be graded to elevations shown on plans and left in good condition.

Section 2. Supplemental Improvements Agreement

Supplemental improvement agreements may be entered into by a developer and the City Council in which the developer agrees to furnish and provide certain street, alley or drainage improvements exceeding the requirements of this ordinance in exchange for the waiver by the City of the furnishing of certain street, alley or drainage improvements required by this ordinance.

Section 3. Basis of Costs

All streets shall be paved. The subdivider shall bear the cost of paving the entire width of all streets, including quality control, except the City shall pay the additional cost, over and above the cost of a 40 feet wide section, for streets in residentially zoned areas as defined herein. For the purpose of determining overwidth participation in paving costs, "Residentially zoned areas" shall include single-family estate district, single-family residence district-1, single-family residence district-2, single-family district-3, special dwelling district, two-family residence district-1, two-family residence district-2, four-family residence district, mobile home estate district, and mobile home district. In areas zoned other than for residential purposes as defined herein, the subdivider shall pay the total cost of the pavement for the class of street required. As to any street that abuts a residentially zoned area as defined herein, on one side and not on the other, the City shall pay the cost difference by which one-half of the width of the street exceeds 20 feet.

When the City initiates the construction of a collector or higher classification of street, prior to the development of the abutting property, the landowner(s) will not be responsible for the cost of street construction if the following conditions are met:

1. The landowner(s) donate the entire right-of-way for street construction and sidewalks as required by Section 16A of the Subdivision Ordinance, without cost, in a manner acceptable to the City.
2. The funding for the construction project is primarily from County, State, or Federal or Economic Development Funds, or from sources other than the City.

Section 4. Width of Streets

All paving shall be to the width herein specified for the respective classification of streets and in the current master thoroughfare plan and other master plans of the City, except where a supplemental improvement agreement for pavement of a varying standard is approved by the City.

<u>Street Classification</u>	<u>Minimum Pavement Width</u>
Local or Residential	40'
Industrial Collector	50'
Collector	50'
Minor Arterial	64'
Principal Arterial	88'-112'

Section 5. Design and Material Standards

Curb, gutter, pavement, base and drainage design of all streets and alleys shall be in accordance with the City's standard specifications and designed to meet the conditions of soil, terrain and subsurface conditions prevailing in the area and shall be installed under the supervision of the City Engineer, or such licensed professional engineer as may be designated by the City Council. Minimum standards for local streets and alleys shall be 6" caliche base and 1-1/2" hot mix. Minimum standards for all other streets shall be 8" caliche base and 2" hot mix.

Section 6. Compliance with Right of Way Ordinance

Contractors not under contract to the City, working in the public right of way shall conform to the requirements of the City of Odessa Code of Ordinances, Chapter 16 - Streets and Sidewalks, Article IV Right of Way Construction Ordinance. If the work performed is not fully covered by the right of way ordinance, the requirements as determined by the Director of Public Works shall be followed.

Section 7. Approval of Plans

Street plans shall be submitted to and approved by the City Engineer prior to commencement of construction on water and sewer lines and/or streets.

Section 8. Street Name Signs

The developer shall pay to the City the cost of furnishing and installing all street name signs, including pole.

Section 9. Street Lighting

In residential areas streetlights shall be installed at each intersection with not less than 250 feet nor greater than 500 feet between lights for intermediate block. In non-residential areas streetlights shall be installed in accordance with the "American Standard Practice for Roadway Lighting".

Streetlights shall be installed on steel poles. The developer shall pay to the Street Light Service Provider the cost of steel poles. The City shall approve the design for the installation of streetlights.

Section 10. Monuments

New subdivisions shall be monumented with brass markers in cast iron boxes labeled "survey marker" at locations approved by the City Engineer. These monuments shall be identified on the face of the plat with reference numbers, coordinates and other information required to adequately establish the location of this monument. Every subdivision shall have at least two monumented corners and some large or irregular shaped subdivisions may require additional monuments. Monuments shall be numbered with the above coordinate information identified on the final plat of the subdivision. The reference number for each monument shall be stamped on the brass marker and will be established using NAD 83.

ARTICLE III - WATER AND SANITARY SEWER EXTENSIONS FOR INDIVIDUAL OWNERS AND DEVELOPERS

Section 1. Purpose of Article; Vested Rights not to be Created

The intent and purpose of this article is to provide for the furnishing of water and sanitary sewer utilities for each and every platted lot throughout the City and, under special circumstances, outside the city. The developer of a subdivision shall furnish and construct all utility improvements therein, including water main lines and sanitary sewer main lines in accordance with the applicable standards herein established. An equitable charge, which shall be stated herein, to be known as "pro rata" shall be collected by the City, for water and sanitary sewer connections in the City on a front foot basis as a fair and proportionable distribution of the cost of water and sanitary sewer main extensions to serve property not previously served and to provide a contribution to be uniformly enforced against all affected property. No person shall acquire any vested rights under the terms and provisions of this chapter.

Existing septic and water systems may continue to be used provided they comply with all health and state and federal regulatory requirements and the use and development of the property remains the same.

All property to be developed shall connect with the City's water and sewer system except where the Director of Public Works determines that such connection will require an unreasonable expenditure when compared with other methods of sewage disposal or other methods of obtaining a water supply, taking into consideration the size of the development and the distance necessary to extend utilities.

All expenses incurred by the extension of sanitary sewer and water lines not specifically assigned to the City by ordinance shall be the responsibility of either the applicant or other property owners served by the extension, and not the City of Odessa.

Section 2. Definition of Terms

Whenever the words, forms or phrases defined herein or pronouns used in their place occur in this ordinance, the intent and meaning shall be interpreted as follows:

Applicant - The Owner of a lot or tract of land, or his agent, requesting water and/or sanitary sewer service.

City - The City of Odessa, Texas, a municipal corporation, acting by and through: (a) its governing body, or (b) its City Manager, each of whom is required by Charter to perform specific duties.

City Attorney - The City Attorney of the City of Odessa, Texas, or his duly authorized assistants or agents.

City Auditor - The City Auditor of the City of Odessa, Texas, or his duly authorized assistants or agents.

City Council - The Council of the City of Odessa, Texas.

City Engineer - The City Engineer of the City of Odessa, Texas, or his duly authorized assistants or agents.

City Manager - The Manager of the City of Odessa, Texas.

City Secretary - The City Secretary of the City of Odessa, Texas, or his duly authorized assistants or agents.

Consumer - The actual user of water or sanitary sewer service from a City connection.

Developer - Owner or agent of the owner subdividing lots or tracts for sale or lease as homes, apartments, commercial shopping centers, or industrial sites.

Director of Finance - The Director of Finance of the City of Odessa, Texas, or his duly authorized assistants or agents.

Director of Public Works - The Director of Public Works of the City of Odessa, Texas, or his duly authorized assistants or agents.

Director of Utilities - The Director of Utilities of the City of Odessa, Texas, or his duly authorized assistants or agents.

Evaluated Cost - The cost of a water and/or sewer main as established by unit values for the size of main and appurtenances as established herewith in this ordinance.

Front Foot - The actual linear distance which any given lot or tract of land abuts upon a street or alley.

Individual Owner - A person requesting extension of water or sewer service to a property which will be used as his own residence or business or an individual commercial or industrial concern requesting extension of water or sewer service to property to be used for its own operation, which property or a portion thereof will not be sold, leased or rented in connection with its intended function.

Mayor - The Mayor of the City of Odessa, Texas.

Off-site Main - Water and/or sewer mains totally outside of a tract of land to be subdivided and developed for resale.

On-site Main - Water and/or sanitary sewer mains that lie within a subdivision or along one or more sides of subdivision and serve that subdivision exclusively.

Oversize Cost - The difference between the evaluated cost of the main as built and the evaluated cost of the size of main determined to be the minimum size required to serve the subdivision. The minimum size main upon which oversize cost shall be determined shall not be less than the standard main defined herein.

Programmed Extension - Water and/or sanitary sewer extensions included in master plan of the system design for which funds have been specifically provided in a properly authorized program of capital fund expenditures.

Property Owner - The record title holder of premises served or to be served with a connection to a City water or sanitary sewer main.

Pro-Rata - The portion of the cost of water and/or sanitary sewer main extensions to be paid by the applicant. The amount of these charges, per front-foot, is stated in this ordinance.

Service Lateral - A distribution line from the main line to the property line to provide water service to the individual customer or sewer collection line from the main line to the service point.

Side Mains - Water and/or sanitary sewer mains that lie along one or more sides of a subdivision and serve other adjacent property in addition to that for which the extension was made.

Standard Size Sewer Main - A sanitary sewer main six inches (6") or larger in diameter. Minimum requirements and grades for sewer main lines (e.g., 6": 0.5 feet per 100 feet, etc.) shall be in accordance with "Design Criteria for Sewerage Systems" published by the Texas Commission on Environmental Quality.

Standard Size Water Main - A water main six inches (6") or larger in diameter, adequately supported by eight inch (8") or larger water mains to provide standard fire protection as recognized by the National Fire Protection Association.

Street Lines - The property line of the property in question that is adjacent to the street right of way.

Utilities Department - The Utilities Department of the City of Odessa.

Section 3. Rates for Extensions

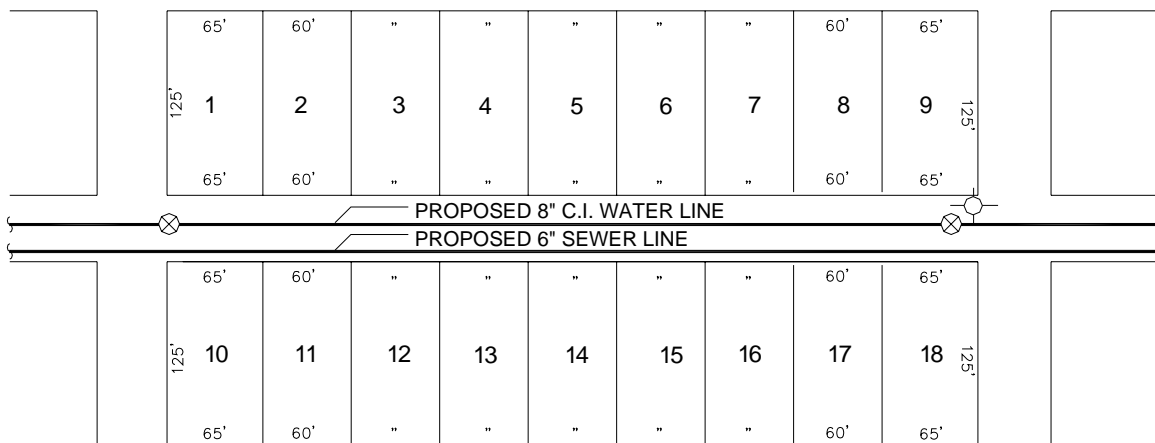
The City of Odessa may extend water and sanitary sewer mains in the streets and alleys, or easements, within the City Limits in order to permit connections by persons desiring and seeking water service and sanitary sewer service. A charge, which shall be known as the "pro rata", shall be made against each lot or tract of land and the owner thereof, whose water or sewer line shall be hereafter connected with any water main or sanitary sewer main in the City, and the charge shall be at the following rates, which rates are a portion of the total cost of such water and sanitary sewer mains:

For mains completed prior to January 1, 1995, the rates for such pro rata shall be \$3.50 per front foot of the lot or tract of land to which water connections may be made and \$2.50 per front foot of the lot or tract of land to which sanitary sewer connections may be made.

For mains completed subsequent to December 31, 1994, the rates for such pro rata shall be \$7.00 per front foot of the lot or tract of land to which water or sanitary sewer connections may be made.

The above front foot rates shall apply to property fronting on streets in areas platted into the usual rectangular lots or tracts of land, with a depth not to exceed 150 feet. Should any lot abut a street on two or more sides, the front footage shall be the shortest width of the lot or tract measured along projected intersecting property lines. (Exhibit "A")

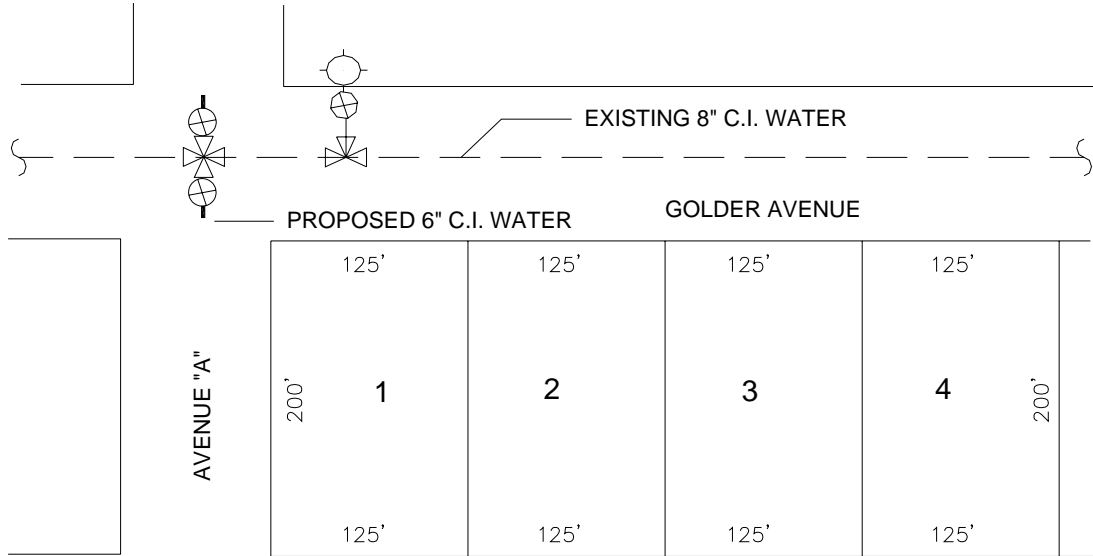
EXHIBIT "A"



Usual rectangular platting of lots. Pro rata charges based on lot frontages. Front footage for lots 1, 9, 10, and 18 would be the 65 foot sides.

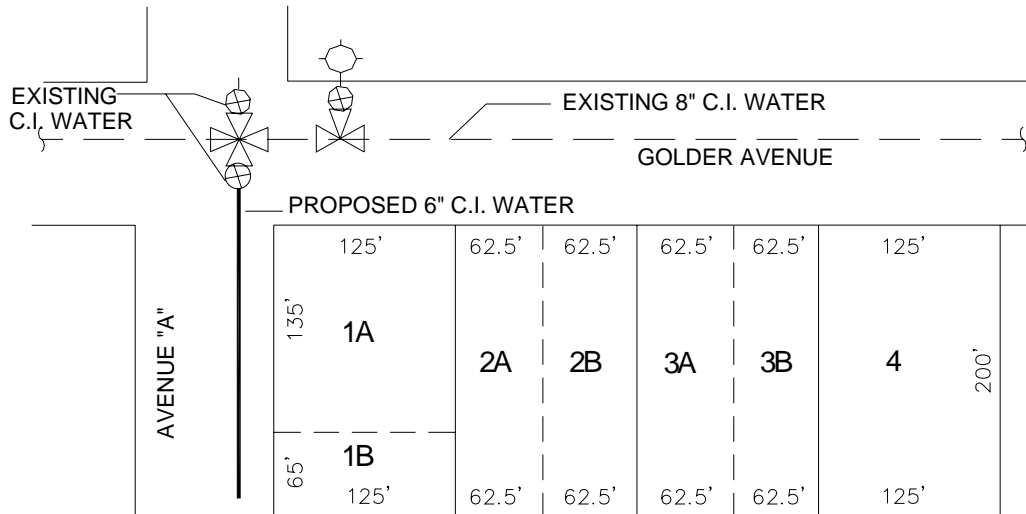
Where lots or tracts have greater depth than 150 feet from the front street line, and are occupied, or are to be occupied exclusively as one or two family individually owned dwelling places, then additional depth shall not be assessed. If the property in question or adjacent property is later subdivided, then the terms of this ordinance shall govern and apply to such property frontage as is created. (Exhibits "B" and "C")

EXHIBIT "B"



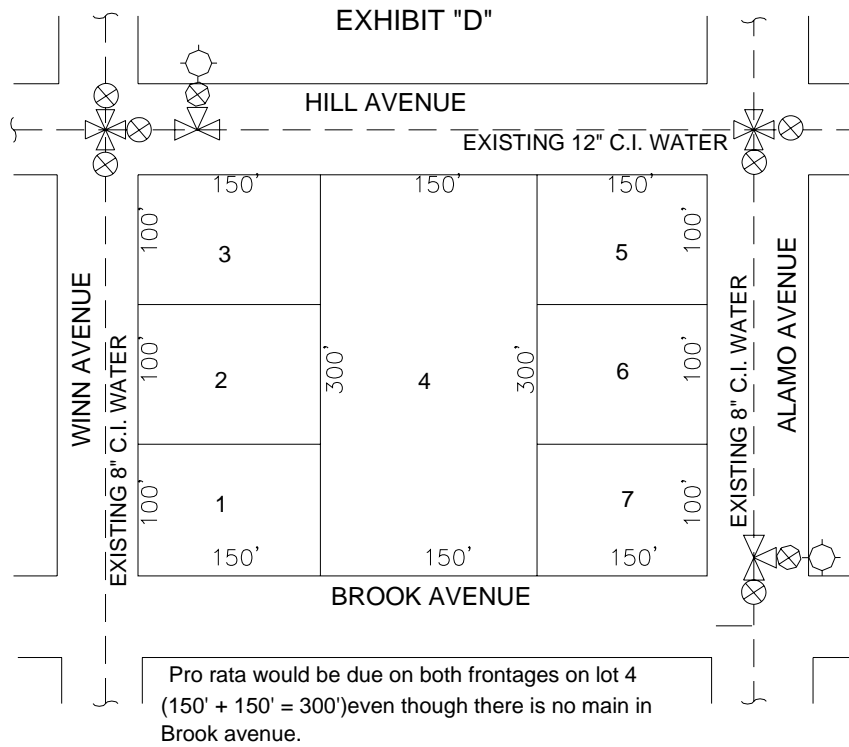
Residential lots - Pro rata due on each 125' frontage on Golder Avenue.

EXHIBIT "C"



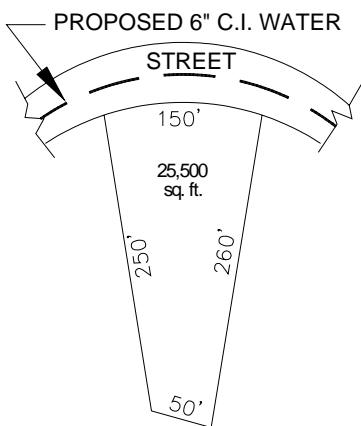
Same lots subdivided - No new frontage created on Golder Avenue (Lots 1A, 2A, 2B, 3A and 3B.) Pro rata would become due on Lot 1B whether or not a main extension is required.

On lots or tracts of land which extend through from one street to another, with frontage on both streets, and where the distance between the street lines is 260 feet, or more, then the pro rata charges herein provided for shall be paid on both frontages when a connection is secured to the lot or tract. (Exhibit "D")



Where lots or tracts are irregular in size or shape, then pro rata charged shall be based upon equivalent rectangular lots or tracts using one foot for each 120 square feet of area, or the pro rata charges provided herein on the average frontage of such tracts, whichever is least. (Exhibit "E")

EXHIBIT "E"

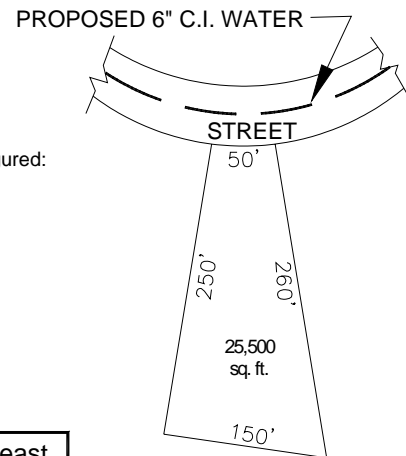


Irregular Lots - Frontages would be figured:

Method 1: $\frac{150 \text{ ft.} + 50 \text{ ft.}}{2} = 100 \text{ ft.}$

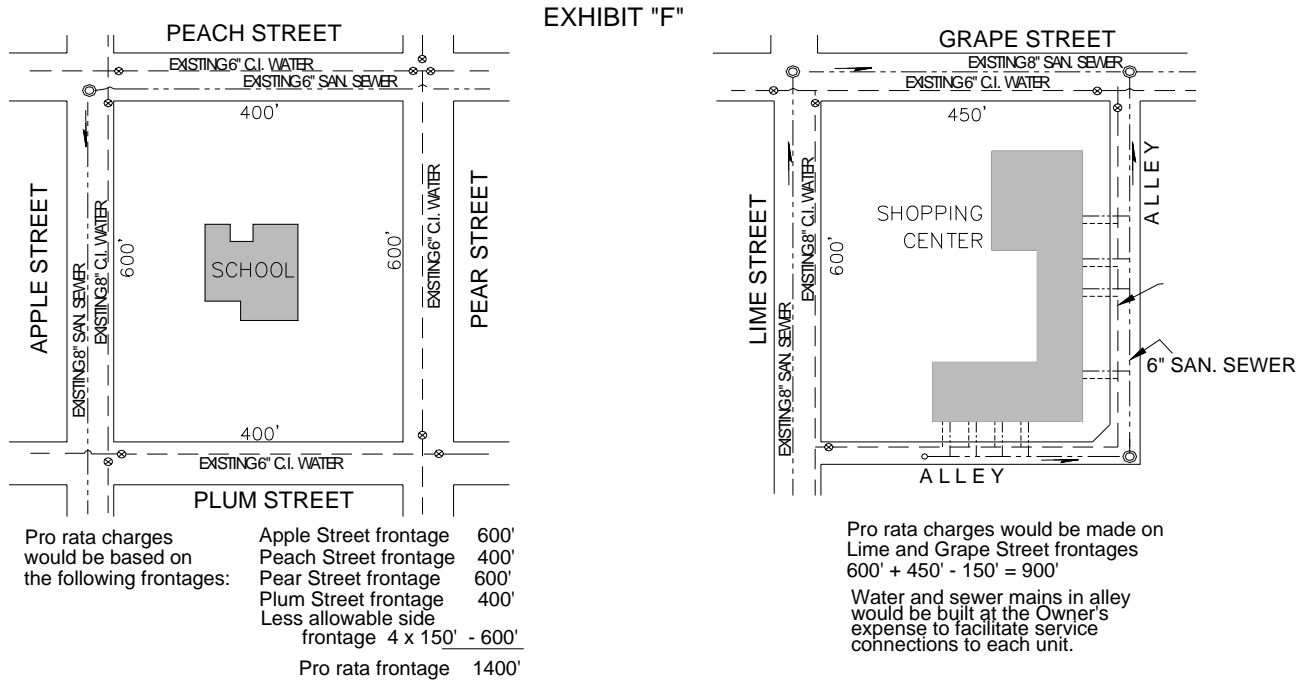
Method 2: $\frac{25,500 \text{ sq. ft.}}{120 \text{ sq. ft.}} = 212.5 \text{ ft.}$

Use method no. 1 since it is least.



Where lots or tracts are intended to be used for other than one or two family dwellings and have a depth greater than 150 feet from the front street lines, then the pro rata herein provided shall be paid on the frontage on all streets which the property may abut minus 150 feet frontage for each corner of the property abutting a street intersection. Should said property be re-subdivided whereby main extensions are required to serve same, the terms of this ordinance shall apply.

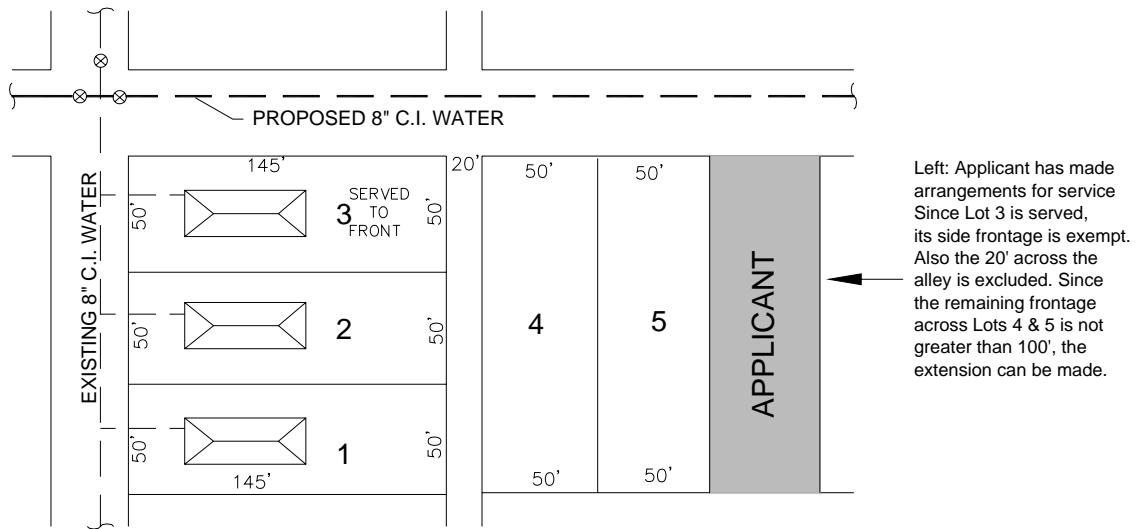
Where unsubdivided tracts of land are to be developed as a unit for shopping centers, apartment sites, industrial sites, or other similar uses, the applicant will pay pro rata charges on street frontages as outlined for business properties. Any mains extended through or into such tracts for service to individual buildings or leased spaces will be built at the applicant's expense in accordance with Section 7. Metering and service connections shall be in accordance with Chapter 19, City of Odessa Code of Ordinances. (Exhibit "F").



Section 4. Extensions for Individual Owners

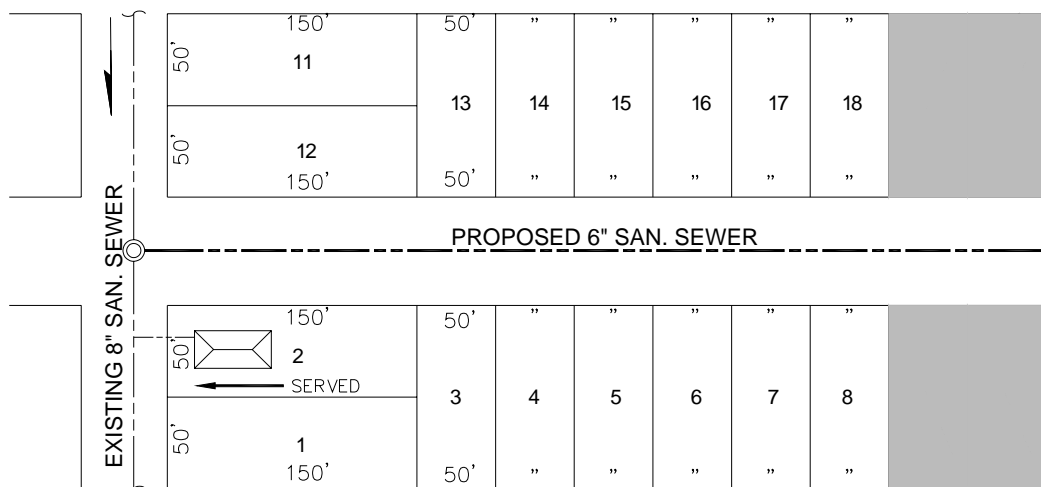
Upon request of an applicant and receipt of payment of the charges due, the City of Odessa shall extend, lay or construct all necessary sanitary sewer and water mains, including valves and hydrants a distance of 100 feet, excluding streets, alleys, etc., plus the distance across the frontage necessary to provide the service for which application has been made. The owners of all intervening property served by the given main extensions will be required to pay the charges provided for herein at such time as their property is connected to the mains thus laid. Where an applicant for service secures an extension and service under this particular option for main extensions, he will pay the pro rata charges on all property owned by him and which is served by the extension requested. In applying the 100 foot rule, the required extension of main shall be figured in such manner as to leave out of the calculations that portion of any main adjacent to property already having other than a temporary water service, and for which the pro rata charges thereon have been paid or credited under terms of this ordinance. (Exhibit "G")

EXHIBIT "G"



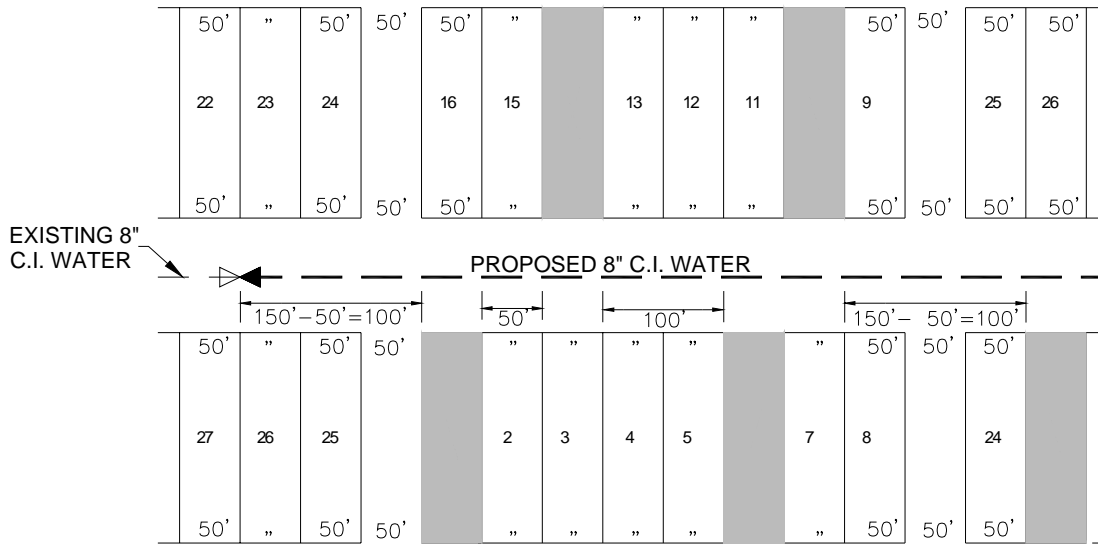
An exception to the above 100 foot rule shall be made where two or more individual applicants desire water and/or sanitary sewer service and the nearest applicant is more than 100 feet from existing mains; the City shall extend their mains upon receipt of payment of the charges due under this ordinance provided there is one customer for every 100 feet of such extension, excluding street intersections and that portion of the extension adjacent to property already having other than temporary water and/or sanitary sewer service. (Exhibits "H" and "I")

EXHIBIT "H"



Four applicants (lots 9, 10, 19, and 20) have made arrangements for service. An extension of 550' is required. Since Lot 2 is served, its side frontage of 150' is exempt, and there are four applicants for the remaining 400' (one connection per 100'), the extension can be made.

EXHIBIT "I"



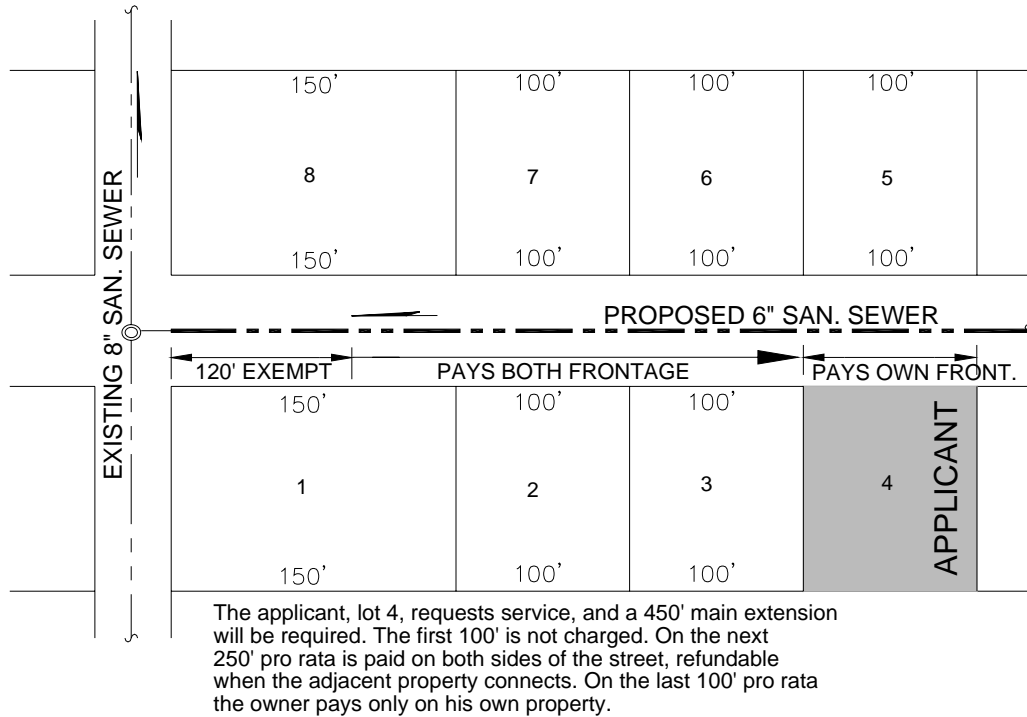
Above - Five applicants have made arrangements for service. Since there is a skip of not greater than 100' between connections (streets exclude), the extension can be made.

At the option of the City, the following method for extending water and sanitary sewer mains may be used where the applicant's property is more than 100 feet from an existing water or sanitary sewer main. This method shall be evidenced by a written contract between the applicant and the City and shall be available only for use by an individual owner, personal or corporate, to secure water and sanitary sewer service for the individual's residence or business. Where eligible for this option, the applicant may advance and pay unto the City the entire pro rata costs as set forth in this article, to wit:

\$7.00 per front foot of the lot or tract of land to which water or sanitary sewer connections may be made

on all property served by the desired main extension, less the 100 feet allowable. Such amounts shall be paid for each side of the street or alley, except that as to applicant's own frontage he shall pay for his side only. The City, when said money has been actually deposited with the Director of Finance, will construct the said desired water and/or sanitary sewer main along a street, alley or easement. When any property for which such person had advanced the pro rata costs is connected to the said main extension, then, in that event, the pro rata advanced for the frontage of the connecting property shall be refunded by the City to the applicant making the original deposit. At such time as sufficient frontage is connected so that the original applicant who advanced total pro rata would be eligible for extension under other provisions of this ordinance, such applicant will be refunded the remainder advanced except for the charges due on the property for which the extension was originally made. The refund provisions of any such extension contract shall be effective only for a period of five calendar years from date of acceptance of the improvements by the City. No applicant or contracting party will be eligible for refunds after this period has expired. (Exhibit "J")

EXHIBIT "J"



When extension is requested by an industry or commercial concern using large quantities of water and cannot meet the requirements of one customer per 100 feet, then extension may be made at the discretion of the City provided 40% of the estimated annual revenue from such customer will support interest and principal payments on the total cost of the extension required to serve.

Section 5. Rental or Leased Property

Should property be rental or leased property, the City is authorized to refuse service on the property and/or to discontinue service to any or all properties owned by, or places served in the name of, the owner until the property owner makes satisfactory arrangements with the City under the terms of this ordinance to pay the applicable pro rata.

Section 6. Indemnity Agreement

Where, in the opinion of the Director of Public Works or the Director of Utilities, the property is subject to flooding or the sanitary sewer is subject to being surcharged due to infiltration of storm waters, or the property is subject to being flooded by an overcharged sewer due to its elevation in relation to the proposed sewer line, then the owner or developer shall be denied a sanitary sewer main for service to the property unless the owner or developer agrees to install check or backflow valves in each house sewer and agrees to indemnify fully the City and save it whole and harmless from and against any and all damages, costs, or expenses of every kind, character or nature, where real or asserted, accruing upon or about the buildings due to surcharge of the sanitary sewer. Said agreement shall be executed by the owner or developer of the property and filed in the deed records of Ector County, Texas, and shall be a covenant running with the land and shall be binding on the owner, his successors or assigns.

Section 7. Basis of Extension

A. Basis of Extension Inside City Limits.

Where extensions of water and sanitary sewer systems are required to serve property inside the City limits, as now adopted or as hereinafter amended by annexation, which is to be subdivided or platted for development by a developer as defined in Section 2 above, water and sanitary sewer facilities may be extended to such properties on the following basis and in accordance with minimum standards and procedures described below:

Platting Required. Water and sewer service from the City shall not be available to any lot, tract or plot of land, or any part thereof, unless and until a plan, plat or replat of such lot, tract or plot of land has conformed to the platting requirements of the City, has been approved by the City Planning and Zoning Commission, and has been filed for record with the County Clerk of Ector or Midland County, Texas, as appropriate.

Before final platting, owners of the tract or subdivision shall submit to the Director of Public Works, for his approval, a plan showing the location and size of water and sanitary sewer mains, and valves and fire hydrants as detailed in Section 9 to follow, which will be required to insure adequate service and fire protection to the lots specified in such proposed tract or subdivision. Should the developer desire to plat more lots than he will construct utilities to serve, the City Council may, in its discretion, accept in lieu of such finished work or accomplished contract a bond or bank letter of credit in such sum as it may deem sufficient as a guarantee that such water and sanitary sewer mains, valves and fire hydrants will be installed and completed within such time as it may designate, and the developer shall furnish a covenant running with the land agreeing to construct such utilities and the City Council may accept and approve such plans before the actual installation of water and sanitary sewer mains, valves or fire hydrants.

Any owner of two or more lots in a subdivision in which water and sanitary sewer mains, valves and fire hydrants have not been installed, who builds improvements on such lots for resale or rental and desires to connect such property to City water or sanitary sewer shall be considered to be a developer for purposes of this Section 7. Such owner shall comply with all requirements imposed by this Section upon developers for obtaining City water or sanitary sewer. Requirements may include installation of separate water and sewer laterals for each lot created by dividing a previously serviced lot.

B. Basis of Extension Outside City Limits.

Water and sanitary sewer facilities may be extended outside the City to certain eligible property subject to listed conditions.

1. Eligibility. If property is not within the City limits, City shall not extend its water or sewer services (collectively referred to as "City services") to such property unless such property is eligible by reason of one or more of the following conditions:
 - a) City services at the time of the adoption of this ordinance. However, if based on an industrial district contract, or other contract, such industrial district contract, or other contract, must continue.
 - b) Subject to a current industrial district contract. (An industrial district contract is required in order for property to receive city utility services if such property is authorized for the creation of an industrial district in the extraterritorial jurisdiction of the City of Odessa as provided in Section 42.044, Texas Local Government Code. The statute provides that "industrial district" has the

meaning customarily given to the term but also includes any area in which tourist-related businesses and facilities are located. Attorney General Opinion No. JM-189 states that an industrial plant is a factory, business or concern which is engaged primarily in the manufacture or assembly of goods or the processing of raw materials, or both.)

- c) Subject to a water contract approved by a water control and improvement district and the City.
- d) Included within an area designated by the State or Federal Government, or both, as a superfund impacted service area, where the capital expense of installing the water works is to be funded by the State or Federal Government, or both, by contract approved by the City of Odessa.
- e) Is owned by a government entity and water service is used for purposes of irrigation of government property pursuant to a contract with the City.
- f) When the right-of-way, design and construction are funded by another governmental entity pursuant to a contract or contracts approved by the City Council.
- g) Sewer services can be extended by contract to other entities remediating contaminated groundwater necessary to protect the water in the affected aquifer. The City may also provide water service to the residential property owners whose groundwater has been contaminated and is being remediated by the entity. The entity shall pay all right-of-way, design, construction, and all remediation monitoring, operation and maintenance costs.
- h) The property to be served immediately abuts or fronts an existing and authorized City water distribution line, if water service is requested, and a City sewer collection line, if sewer service is requested. This policy shall also apply to a sewer collection line of Gulf Coast Authority provided such use is authorized by contract between Gulf Coast Authority and the City. This section shall not apply, however, if City does not have authority to use the line. This subsection shall also not apply if, because of special circumstances, the proposed use would be cost prohibitive or create a special operational problem as determined by the City Manager, or his/her designee. This subsection shall not apply if it is for an industrial use and an industrial district contract is required. This subsection does not apply to land that is intended to be subdivided or developed.
- i) The facilities to be constructed and/or the right-of-way to be granted to the City are considered beneficial to the City, as determined by the City Council, taking into consideration the total City system. However, if it is an industrial use, an industrial district contract shall be required.
- j) In the event that the property of the applicant for water or sewer service is not eligible for designation as an industrial district, but the City Manager determines that the proposed use should be approved for purposes of economic development and the creation of jobs, and that it will not have a negative effect on the health and safety of the community, the City Manager is authorized to approve a contract for city utility services, as an exception to the requirement in subsection 1.h that, "the property to be served immediately abuts or fronts an existing and authorized City water distribution line, if water is requested, and a City sewer collection line, if sewer service is

requested."

- k) In addition to the above listed eligibility requirements, the City Manager shall use the following criteria in determining if water or sewer service will be provided:
 - i. Availability of utility lines to the area.
 - ii. Impact of the utility service on the City's system.
 - iii. Availability of water resources to support a customer base outside the city limits.
 - iv. Other criteria as deemed appropriate.
2. Conditions For Utility Services Outside City. In the event that property is eligible for an extension of services as provided in subsection 1, such extension of services shall require compliance with the following conditions:
- a) Water and sewer service from the City shall not be available to any lot, tract or plot of land, or any part thereof, unless an approved plat or replat of such property is filed of record with the County Clerk of Midland or Ector County.
 - b) City must own or be granted, clear of any claims, liens, or charges, all utility easements, right-of-way easements, necessary approvals of other governmental or private entity, mainline extensions, pipes, valves, necessary appurtenances and meters necessary to deliver water or sewer to the property of the owner without any cost to the City. Any water meters shall be unobstructed by fences, gates and other visual impediments.
 - c) The owners must agree to sign a contract, approved by the City Manager, setting forth all of the terms and conditions and agree that the contract can be filed in the deed records so as to bind subsequent purchasers of the property purchasing water or sewer service from the City.
 - d) No connections will be allowed into a large transmission main or interceptor.
 - e) Rates will be assessed at 1.5 times the comparable service rate in the City; and in the event that the rate is ever reduced or modified by law or by a higher regulatory authority, the City shall have the right to terminate the service. If in an industrial district, the rate shall be 1.0 times the comparable service rate in the City.
 - f) The owner shall comply with any applicable state or federal law, the City's Plumbing Ordinance, quality standards for sewage as specified in Chapter 15B of the City Code, and all other ordinances regulating and specifying requirements for water and sewer use in the City, as now or hereinafter adopted, or as hereinafter amended, including the right to connect or disconnect users. If the owner's plumbing does not meet the City's Plumbing Code, the owner will be required to install a backflow assembly approved by the City. The assembly must be tested by a backflow prevention assembly tester registered with the City upon installation and annually thereafter.
 - g) Cross connections to the public water supply shall be prohibited and an air gap or backflow assembly approved by the City may be required. If required, the owner shall be responsible for the cost of installation for initial and annual testing as well as ongoing maintenance of the assembly.
 - h) The City reserves the right to annex the property pursuant to law unless

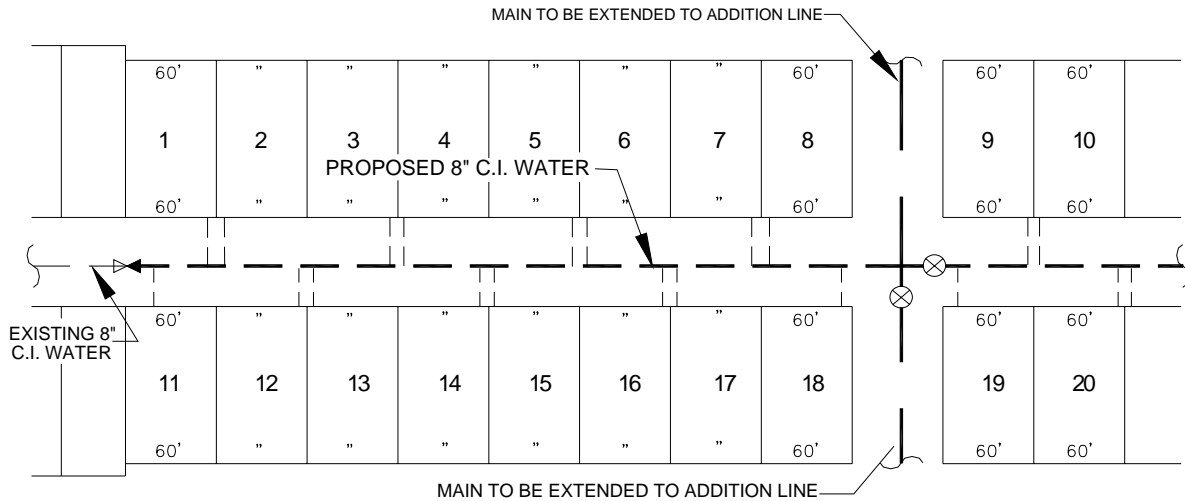
subject to an industrial district contract. The fees to be charged by City for utility services are not to be interpreted as payments in lieu of annexation.

- i) The provision of water service shall also be subject to any requirements imposed by the Colorado River Municipal Water District, the supplier of water to the City of Odessa.
- j) The quantities of water to be delivered to owner shall be limited as follows:
 - i. to those quantities available for sale and delivery after first satisfying the demand and needs of all city and city customers uses within the city limits of Odessa, at the time of delivery, and
 - ii. committed by contract to other persons or private or public entities, located outside the City limits, prior to the approval of the contract. In the event of curtailment, City and customer uses in the City shall have the highest priority. Exceptions may be made for purposes of economic development.
- k) Use of water must comply with the City Water Conservation and Drought Contingency Plan.
- l) Other conditions considered reasonable and necessary by the City Manager, or the City Manager's designee.
- m) The owner must be willing to pay all costs for the construction of the water or sewer lines. These costs shall include design, right-of-way/easement, and construction costs as well as City costs required to evaluate the feasibility of the project and to inspect the installation. All constructed lines must be approved and accepted by the City pursuant to City's permitting and construction requirements.
- n) The owner must pay, before the City will process a request for service outside the City limits, the Outside City Utility Service Application Fee of \$50.00 for the initial lot and an additional \$10.00 for each additional lot. If service is approved, the owner must pay all filing fees for the contract.
- o) Requirements may include installation of separate water and sewer laterals and taps for each lot created by dividing a previously serviced lot.

C. Extensions within Property to be Developed

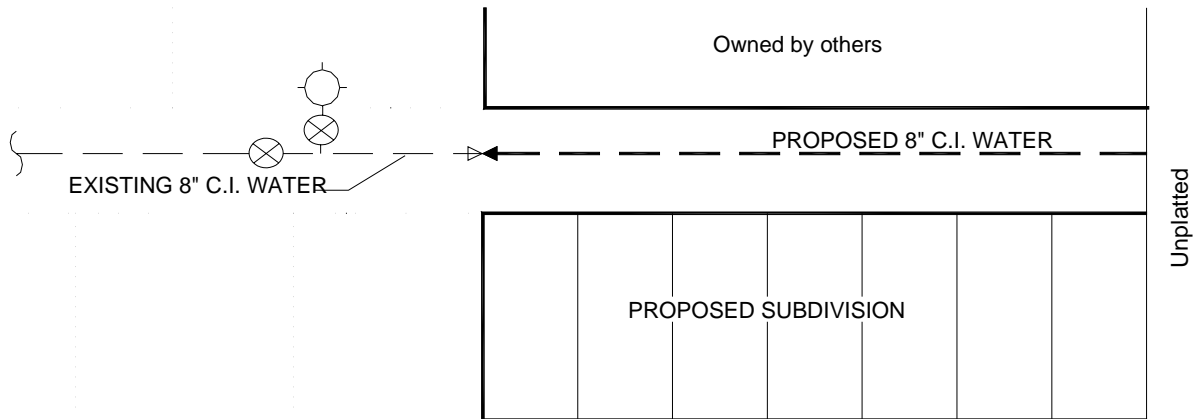
1. Developers of such property will defray the entire cost of water and sanitary sewer systems within their subdivision except that the City will refund the oversize cost of any water main or sanitary sewer main larger than 8" in size, unless a larger size is required to serve the subdivision in question. The City Engineer shall determine the size of mains for adequate service. The City will make refunds of oversize cost, upon acceptance of the systems. (Exhibits "K" and "L")

EXHIBIT "K"



In above subdivision, the mains are on-site. Total cost to be borne by developer.

EXHIBIT "L"

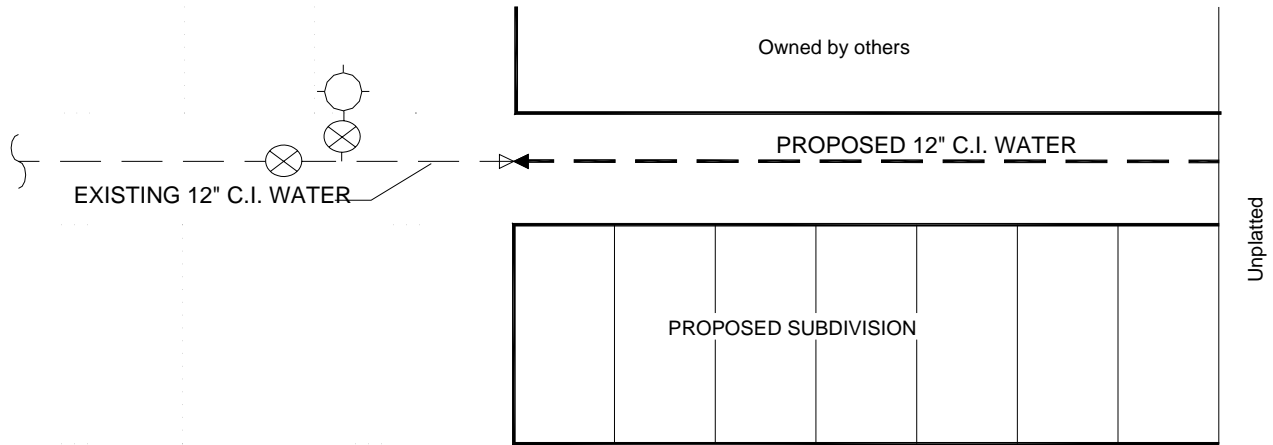


In above, since the main extension pictured serves property owned by others as well as the subdivision, the developer will be refunded one-half of the evaluated cost of the main upon acceptance of the project.

2. Mains lying along one or more sides of a subdivided tract:
 - a) For side mains 8" and smaller the developer will be refunded one half the evaluated cost of the size main constructed as set forth in Section 10 below, such refunds will be made upon acceptance of the system by the City.
 - b) For side mains larger than 8" in size the developer will be refunded the difference between the evaluated cost of such water and/or sanitary sewer main and one-half the evaluated cost of an 8" main or such larger sizes as are required to serve the subdivision for which extensions are required, provided the developer has advanced the total cost of such mains. Where such mains are laid by City contract in conjunction with the development, the developer will pay the City of Odessa one-half the evaluated cost of an 8" water or sanitary sewer

main, or such sizes as are required to serve the subdivision. Upon acceptance of the system by the City, any refunds due will then be made. (Exhibit "M")

EXHIBIT "M"



In the above, upon the acceptance of work, the developer will be refunded the difference between evaluated costs of a 12" main and an 8" main, plus one-half of the evaluated cost of an 8" main.

D. Off-Site Extensions

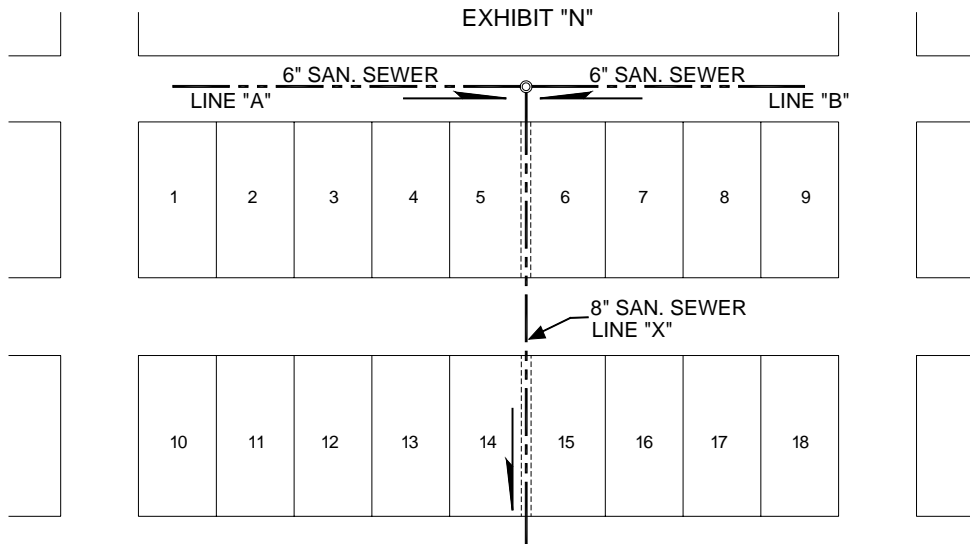
Off-site extensions required to serve property development: where water and/or sanitary sewer facilities are not available to a tract to be developed the City will extend such facilities to the nearest subdivision property line within the following limitations:

1. Water transmission mains or trunk sewers for which funds have been specifically programmed and for which funds are available, will be extended to serve property to be developed, provided the total cost of such off-site water and/or sanitary sewer facilities, including City inspection and engineering costs, is determined by the City, in its sole discretion, to be reasonable based on proximity to existing facilities, potential for development, and the ability to provide appropriate water and sewer service. Where programmed items of construction will extend through the area to be subdivided, and such construction is accomplished by City contract, the developer will pay to the City of Odessa, the pro-rata price of an 8" water and/or sanitary sewer main or such sizes as are required to serve the subdivisions for which extension is required.
2. Off-site water and sanitary sewer mains for which funds have not been specifically programmed will be constructed at the expense of the developer requiring such extensions; provided, however, that the City will refund the cost of such mains off-site, as by the pro-rata costs established in Section 3, as adjacent development occurs to the installed line. In no instance will more than the total evaluated cost of off-site facilities be refunded. The developer will not be eligible for any refunds after five (5) calendar years from date of acceptance of the improvements by the City.

Section 8. Fees Due for Existing Mains

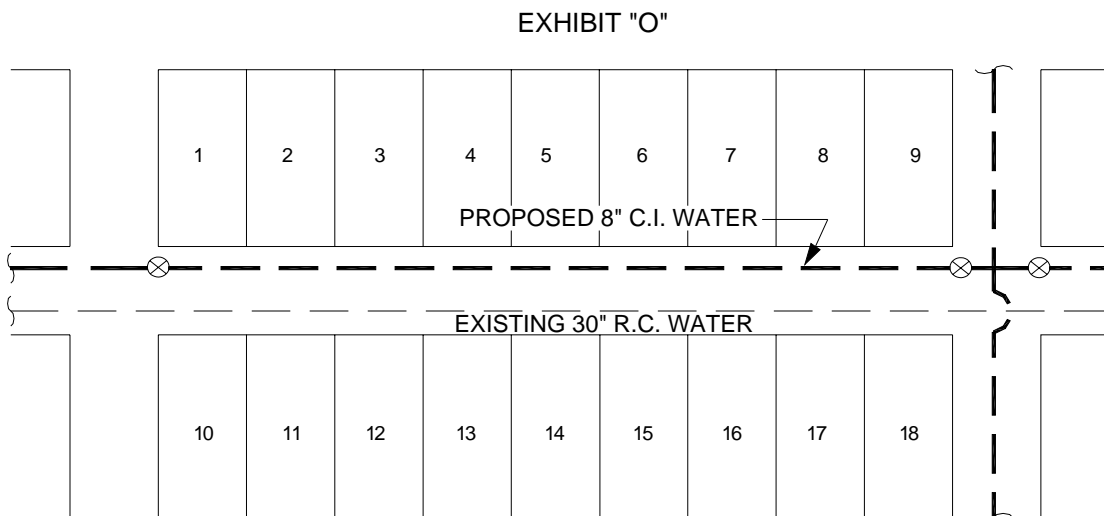
Where a main is in place or proposed to be built by the City in or adjacent to the property to be developed: should an existing or proposed water main or sanitary sewer main lie in a street, alley or easement in an area or tract of land to be subdivided and developed, before extensions from or connections to such line or lines will be made by a developer he shall pay to the City of Odessa the total of \$14.00 per linear foot of

water main and \$14.00 per linear foot of sanitary sewer main. Should such existing or programmed main lie alongside the subdivision, one-half of these costs shall be paid. (Exhibit "N")



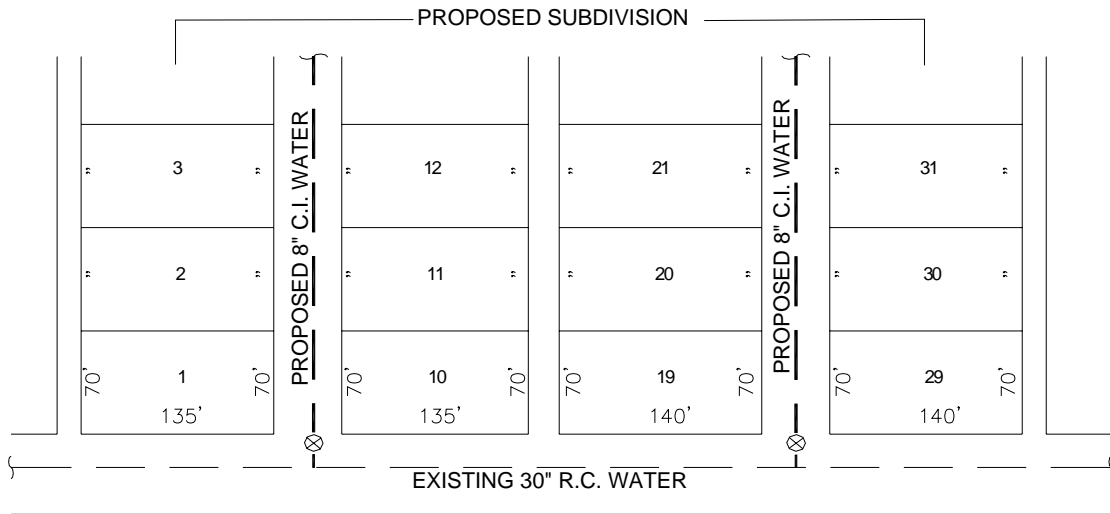
In above sketch, on existing sewer lines "A", "B", and "X", the developer will pay: \$14.00 per linear foot on line "X" which extends through the subdivision; and \$7.00 per linear foot on lines "A" and "B" which lie alongside the subdivision.

These charges shall not be assessed to platted lots fronting a water transmission main that is in place and existing because connection to serve the individual lots from a transmission main is not allowed. In such instances the developer shall install a service main, if needed, to serve his property. Where such transmission main will side the platted property the developer will pay one-half the pro rata charges due. (Exhibits "O" and "P")



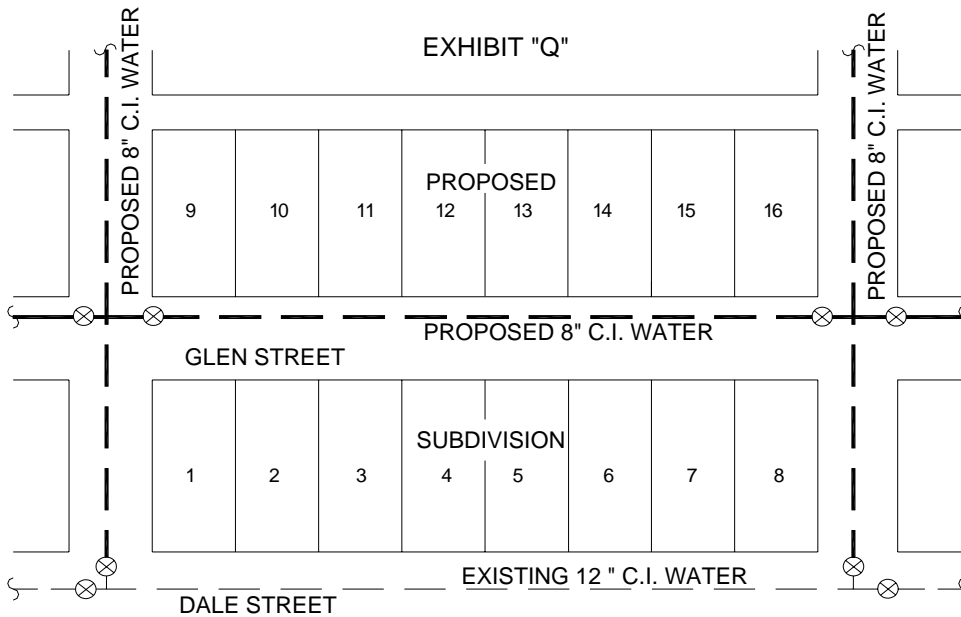
Since the developer is paralleling the 30" main with an 8", no charge would be assessed.

EXHIBIT "P"



In this case the 30" main lays alongside the subdivision. The developer will pay \$3.50 per linear foot on the subdivision frontage.

Where lots are platted backing a thoroughfare or street and a duplicate service main is built on their frontage street, the charges will not be assessed on the main to the rear of the lot. (Exhibit "Q")



Above Lots 1 through 8 serve into main to be built by developer in Glen street. Therefore, no charge would be made on main in Dale street

Mains smaller than those defined as standard will be replaced by the developer with mains determined by the City Engineer to be of adequate size for permanent service, or the developer will pay pro rata for such distance as the main must be replaced, whichever cost is greater.

Charges due the City from developers for existing mains serving the development will be offset against refunds which are or will become due the developer for laying mains in the same development. Charges due the City of Odessa in excess of refunds will be paid before water or sanitary sewer service is made available to the development. Such monies shall be paid to the Utilities Fund of the City of Odessa and will constitute a charge for use of such water and/or sanitary sewer main in place. The City will pay refunds due the developer in excess of charges, within 30 days of its acceptance of the mains.

Section 9. Method by Which Water and Sanitary Sewer Mains May be Constructed

Water and sanitary sewer main extensions to serve a real estate subdivision in the City may be accomplished in the following manner:

A. By Private Contract

Upon approval by the City, a developer of an addition or plat shall design and prepare construction plans of water and sanitary sewer facilities, or either of them, to serve the subdivision, including any access or off-site facilities that may be required. These plans shall conform in all details to the City's standard as to design, location, and size, and quality of materials and construction. City standards and specifications shall be minimum requirements.

The engineer submitting the plans and specifications must be a Licensed Professional Civil Engineer in the State of Texas, and affix seal and signature to the originals of all plans and specifications in accordance with applicable rules and regulations.

Three copies of the preliminary plans for water and sanitary sewer lines shall be submitted to the City of Odessa Public Works Department for approval along with a copy of the preliminary plat. After review of the preliminary plans by the City, one copy, along with a copy of the City's comments and recommendations, will be returned to the developer's engineer.

Three copies of the completed drawings for water and sanitary sewer plans and specifications shall then be submitted to the Director of Public Works for final approval, accompanied by two copies of the standards and specifications, two copies of the plans and specifications of the storm sewers and street and alley grades as approved by the Department of Public Works and two copies of the plat of the addition that has been recorded in the records of the County of Ector or Midland and has been so stamped. Upon final approval, one copy of the plans will be returned to the developer's engineer for the purpose of making such corrections or changes as the City may require. The developer's engineer will then furnish the Public Works Department three sets of corrected plans plus a complete set of reproducible sepias and digital media which will become permanent property of the Department of Public Works.

Upon final approval of the plans by the City of Odessa, the developer may enter into a contract with any individual or may himself construct the system as so planned; provided, however, that the construction and installation of the water mains and sanitary sewer mains, or either of them, shall be inspected by inspectors of the City to see that the installation is made in accordance with the plans and of the City's standard specifications which, in every instance, shall be a part of said installation contract. The person or company doing the construction work shall meet all of the City requirements as to permits, right-of-way construction bonds, and insurance for right-of-way construction work.

When the project is ready for construction, line and grade stakes will be set by the developer's engineers; but these stakes will not be set until after the developer's engineer

has properly staked on the ground with iron pins all points of curves, all points of tangency, all block corners, and all lot corners within the subdivision.

No installation of water or sewer mains will be made at any other location except a dedicated street, alley, or an easement running in favor of the City which has been filed for record with the County Clerk of Ector or Midland County, Texas, by the owner of said addition.

Any such installation, when made, shall become the property of the City, free and clear of all encumbrances.

The City specifically reserves the option to advertise for bids and install all or any portion of extensions of water and sanitary sewer lines over 8" in size where evaluated prices are not specified in Section 10 below.

B. By City Contract

The procedure for approval of construction plans shall be as for private contract, Paragraph "A" above.

Upon approval by the City a developer of an addition or plat shall design and prepare construction plans of water and sanitary sewer facilities that may be required. The City will not be obligated to proceed under a City contract for partial construction of a project. Bids for this construction work shall be secured and a contract awarded at a regular meeting of the Odessa City Council. The developer of the addition or plat shall, prior to award of the contract, deposit with the City the total estimated cost of all extensions required to serve, including the cost of approach or off-site mains fronting property not owned by the developer, if required by the provisions of Section 7, Paragraph "C", plus engineering and inspection fees. The City will inspect the construction of such mains and upon determination of final completion cost, will refund any excess amount deposited or require of such developer additional funds due to defray the entire cost of the entire project. Refundable amounts for off-site costs or oversize cost shall be in accordance with Section 7 preceding and will be determined and refunded on the basis of unit bid prices of the project; provided, however, the City reserves the right to reject any unbalanced or unfavorable bid and may refuse to proceed under this basis if weather or seasonal conditions are likely to cause excessive costs to bid for the work. If the developer desires to proceed under a contract deemed to be unbalanced or unfavorable, refundable amounts for off-site or oversize cost will be determined and refunded on the basis of evaluated cost. If the developer selects the City contract option, he shall stake the subdivision as for private contract, Paragraph "A" above, prior to a work order being issued by the City and shall properly coordinate after construction contracts so as not to interfere or damage water or sewer mains in place. Any damage, relocation or revisions necessitated by other construction shall be for the developer's account and the City may withhold water and sewer service until such accounts are settled.

Section 10. Evaluated Prices for Determination of Oversize Cost and Off-Site Facilities

Evaluated prices shall be based on the five (5) year construction history and/or recent public bidding history as determined by the City Engineer. The most recently completed Annual Construction Report produced by the Engineering Division will be used for these purposes.

Section 11. Letter of Intent to be Filed with City

Any developer desiring to make the installation of water and sanitary sewer main, or either of them, shall file a letter in writing with the Director of Public Works, stating that he elects to make the installation under

the terms and provisions of this ordinance, which said letter when received and accepted by the City shall then be binding upon both parties, that is, the City and the developer.

Section 12. Charges to be Credited to Utilities Fund

Any and all sums of money hereinafter collected as a fee or connection charge, at the rate set out in this ordinance, shall be credited to the Utilities Fund of the City.

Section 13. City Not Obligated if Funds Not Available

In no event shall the City be obligated to proceed under the terms of this ordinance if funds are not available or if, in the discretion of the City the extensions may not be practical.

Section 14. Rights under Previous Ordinances

The right of persons entitled to refunds under previous ordinances where the installations have actually been made of water and/or sanitary sewer mains prior to the adoption of this ordinance shall remain unaffected by this ordinance. All right and remedies which have accrued in favor of the City under said previous ordinances and amendments thereto shall be and are preserved for the benefit of the City.

Section 15. Existing Mains Exempt

All property platted into lots or tracts and having existing adequate water and sanitary sewer mains installed by the City at the effective date of the original pro rata ordinance, May 11, 1954, shall be exempt from the pro rata charges for the water and sanitary sewer mains as to the said existing mains. Where such property is later subdivided, whereby an extension of mains is required to serve same, then the terms of this ordinance shall govern. Where the property owner or developer has already paid or contributed towards any of the existing mains, then the property properly served by the existing mains without extension thereof shall be exempt from the pro rata charges for water or sanitary sewer connections.

Section 16. Administrative Decision Appealable to City Council

Where an administrative officer of the City is given the authority by this ordinance to make a determination or finding, any person disagreeing with such determination or finding may appeal to the City Council; provided, however, if the ordinance sets out criteria or guidelines for such determination or finding by the administrative officer, the City Council shall follow such criteria or guidelines in deciding to appeal or amend the subject ordinance.

Section 17. Repeal of Conflicting Ordinances

All existing ordinances, resolutions (particularly a resolution adopted by the City Council on May 11, 1954, and amendments thereto) and all policies of the City in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict and only to such extent. However, any developers refund contracts heretofore made under previous ordinances, resolutions or policies, which contracts are still in effect, shall not be affected by this ordinance.

Section 18. Invalidity

If any section, paragraph, sentence, clause or phrase of this ordinance shall be held by a court of competent jurisdiction to be invalid, such invalidity shall not affect the validity of the remaining parts of this ordinance. The City Council hereby declares that it would have passed the remaining parts of this ordinance if it had known that such part or parts thereof were held to be invalid.

ARTICLE IV DRAINAGE IMPROVEMENTS

Section 1. Purpose

The purpose of this Article is to establish policies governing storm drainage facilities within the City Limits of the City of Odessa, Texas, and its extraterritorial jurisdiction in order to protect the general health, safety and welfare of the public by reducing flooding potentialities, controlling excessive runoff, minimizing erosion and siltation problems, and eliminating damage to public facilities resulting from uncontrolled storm water runoff.

Section 2. Definition of Terms

Whenever the words, forms, phrases defined herein, or pronouns used in their place, occur in this ordinance, the intent and meaning shall be interpreted as follows:

"C" Factor Determination - means the same as "runoff coefficient".

Closed System - A system that carries storm drainage by way of conduit, inlets, and other types of closed structures.

Design "Storm Frequency" - The frequency in years at which the specific intensity of rainfall will probably occur.

Detention Basins - Artificial or man-made depressions that have the capability of storing storm drainage runoff.

Flume - A lined channel section used to carry storm water between structures.

Fully Developed Watershed - A tract of land defined by topography that has been or can be fully developed.

Head Losses - Loss of energy in a system due to friction.

Headwalls - A structure either upstream or downstream near a pipe or culvert used to transition the flow of water and to resist erosion.

Hydraulic Capacity - Ability of system to carry the designed storm.

Inlet - Type of opening designed to allow storm water to enter a system. There are low point inlets or on grade inlets.

Manning Equation - An equation that was developed by Manning to determine the flow of water in a system.

Natural Channels and/or Earthen Channels - A system, either natural or manmade, that carries storm drainage by way of an open system that is not lined.

Offsite Drainage - Drainage that initially or collectively crosses subject property and onto adjacent property.

Outfall of Storm Sewer System - The point at which a closed system empties into an open system.

Playa or Playa Lake - A natural depression that has the capability of storing storm drainage runoff.

Reinforced Concrete Lined Open Channels - A system that carries storm drainage by way of open channels with reinforced concrete used as a means to prevent erosion or to increase capacity.

Roughness Coefficient - Also referred to as an "n" factor. A number developed to account for the degree of roughness that affects the flow of water.

Runoff Coefficients - Also, referred to as a "C" factor. The factor that reflects the development conditions of a tract of land.

Time of Concentration - The longest time that will be required for a drop of water to flow from the upper limit of the drainage area to the point of concentration.

Section 3. General Design Requirement

- A. The purpose of this section is to establish standard criteria, principles, procedures and practices for design of storm drainage facilities.
 - 1. The design factors, formulas, graphs and procedures presented or referred to herein are intended for use as engineering guides in the design of drainage facilities and in the solution of drainage problems involving the quantity, method of collection, transportation and disposal of storm water.
 - 2. Methods of design other than those indicated or referred to herein may be considered where experience clearly indicates they are preferable; however, these deviations shall not be attempted until approval has been obtained from the City Engineer.
 - 3. The methods outlined or referred to herein include accepted principles of surface drainage engineering and should be a working supplement to basic design information obtainable from textbooks and publications on drainage.
- B. Determination of Design Discharge:

The two methods acceptable for use in the City of Odessa are:

- 1. Rational method to be used on small watersheds of 1,000 acres or less.

$Q = CiA$, in which

Q is the peak runoff rate in cubic feet per second (cfs). Actually, Q is in units of inches per hour per acre; since this rate is in/hr/ac differs from cfs by less than one percent, the more common cfs is used.

C is a runoff coefficient depending on characteristics of the drainage area.

i is the average rainfall intensity in inches per hour (in/hr).

The rational method is based on the following assumptions:

- a) The peak rate of runoff at any point is a direct function of the average rainfall intensity during the time of concentration to that point.
- b) The frequency of the peak discharge is the same as the frequency of the average rainfall intensity.

- c) The time of concentration is the time required for runoff to become established and flow from the most remote (remote in time, not necessarily distance) part of the drainage area to the point under design.
- 2. Unit hydrograph techniques may be used for areas greater than 1,000 acres. The City Engineer shall approve the technique and the data to be used for the determination of the design discharge prior to the calculations being completed. A complete set of all detail calculations must be submitted to the City Engineer for approval prior to completion of the plans for the drainage system.

C. Drainage Area:

- 1. Area of the watershed shall be determined using approved engineering methods.
- 2. Outline of drainage areas must follow natural drainage features in non-urbanized areas. Consideration shall be given to man-made features in urbanized areas.

D. Runoff Coefficients:

- 1. Storm drainage shall be designed for ultimate development of the watershed and, therefore, runoff coefficients used shall consider these fully developed conditions. Master plans, zoning maps and land use plans shall be used to determine the ultimate development.
- 2. Table I gives values for runoff coefficients that shall be used in the determination of storm water runoff.

TABLE I
Runoff Coefficient "C"

Retail or Commercial Areas	0.90
Industrial Areas	0.70
Residential Areas	0.50
Park or Open Space Areas	0.30

E. Rainfall intensity - duration - frequency curves for this area have been developed using the most current data available. These curves are as published in the Drainage Criteria Manual for the City of Odessa, which data is approved and incorporated herein by reference. A copy of these curves is on file with the Director of Public Works and is available for inspection.

F. Roughness Coefficients "n" have been determined for the City of Odessa. Table II shall be used when assigning values for "n".

TABLE II
Computation of Composite Roughness Coefficient
For Excavated and Natural Channels
 $N = (n_0 + n_1 + n_2 + n_3 + n_4) m$

Material Involved	<u>Channel Conditions</u>	<u>Value</u>
n_0	Earth	0.020
	Rockcut	0.025
	Fine Gravel	0.024
	Coarse Gravel	0.028

Degree of Irregularity	Smooth	0.000
n ₁	Minor	0.005
	Moderate	0.010
	Severe	0.020
Variation of Channel	Gradual	0.000
Cross Section	Alternating Occasionally	0.005
n ₂	Alternating Frequently	0.010-0.015
Relative Effect of Obstructions	Negligible	0.000
n ₃	Minor	0.010-0.015
	Appreciable	0.020-0.030
	Severe	0.040-0.060
Vegetation	Low	0.005-0.010
n ₄	Medium	0.010-0.025
	High	0.025-0.050
	Very High	0.050-0.100
Degree of Meandering	Minor	1.000-1.200
m	Appreciable	1.200-1.500
	Severe	1.500
Roughness Coefficient for Line Channels		
Concrete n = 0.017	Open Channel Hydraulics	
Line -		
Rubble n = 0.022	Ven Te Chow, Ph.D.	
Rip Rap		

G. Time of Concentration

1. Time of concentration shall be calculated for the watershed under consideration.
2. No time of concentration less than 15 minutes shall be used.

Section 4. Municipal Storm Drainage System Standards

Drainage and street facilities shall be designed to accommodate at a minimum the following minimum design frequency:

<u>Type of Facility</u>	<u>Minimum Design Frequency</u>
Channels, Creeks	50 year
Culverts	25 year
Streets	100 year
at right-of-way line (with 12 inches over top of curb)	
Flumes between buildings	100 year
Closed Systems	5 year
Storm sewers (with inlet on grade)	
Storm sewers draining at low points	25 year

Section 5. Headwalls

Headwalls shall be constructed at the inlet and outlet of all storm sewer systems.

Section 6. Approved Drainage Facilities

The five different types of basic drainage features or systems are as follows:

- A. Closed systems (storm sewers).
- B. Lined open channels.
- C. Natural or earthen channels.
- D. Playa lakes and/or detention basins.
- E. Streets and/or flumes.

Section 7. Special Requirement for Lined Open Channels

- A. To be reinforced concrete or other alternatives approved by the City Engineer.
- B. Access to be provided for maintenance purposes.

Section 8. Special Requirements for Playa Lakes and/or Detention Basins

- A. Access shall be provided for maintenance purposes.
- B. The City Engineer will approve all detention basins on an individual basis.
- C. Natural playa lakes shall not be filled unless such loss in drainage capacity is equally compensated for in some other manner.
- D. Finished floor of buildings in or adjacent to playa lakes, or drainage way shall be a minimum of 1 foot above the 100-year storm.

Section 9. Special Requirements for Streets and Flumes

- A. Street crowns may vary from standard street crowns for drainage purposes if approved by the City Engineer.
- B. Inverted streets may be used on local streets if approved by the City Engineer. Inverted streets may not be used on collector or thoroughfare streets as shown on the Master Thoroughfare Plan except as approved by the City Engineer.
- C. Overwidth streets may be used for drainage purposes if approved by the Director of Public Works.
- D. Buildings adjacent to flumes shall set at least one foot above the top of the flume.
- E. Buildings shall have finished floor elevations set one foot (1') above top of curb or greater if required to maintain 100 year flood within right-of-way or as approved by the City Engineer.

Section 10. Special Requirements for Natural or Earthen Channels

- A. All channel improvements such as filling shall be protected with sodding, backsloping, cribbing or other bank protection, as approved by City Engineer.
- B. All channel sides shall have a slope at least equal to 4 to 1 or flatter.

- C. Such systems shall not have velocities in excess of ten feet (10') per second.
- D. Access to such channels shall be provided for maintenance purposes.

Section 11. Special Requirements for Bridges and Culverts

- A. Bridges and culverts shall be designed to pass runoff from a 25-year frequency storm unless a large structure is required to comply with B and C below.
- B. For drainage structures designed for residential streets, water overtopping the structure from the 100-year frequency storms shall not flood the roadway to a depth greater than fifteen inches (15") above the roadway gutter and all water shall be redirected into the immediate downstream system.
- C. For drainage structures designed to carry any street other than a residential street, water overtopping the structure from a 100-year frequency storm shall not flood the roadway to a depth greater than nine inches (9") above the roadway gutter and all water shall be redirected into the immediate downstream system.

Section 12. Legal Responsibility

The requirements contained in all City ordinances with regard to surface drainage or water sources shall be considered as minimum requirements only, and the owner, his agent and independent contractor, shall be responsible for complying with all State and Federal laws as well as all duties imposed on such owner, agent or independent contractor by common law. Such owner, agent or independent contractor shall also be required to obtain all permits required by the State of Texas or the Federal Government.

Section 13. Construction

All construction shall be in accordance with the City of Odessa specifications, which are approved and incorporated herein by reference, a copy of which is on file with the Director of Public Works and is available for inspection.

Section 14. Right of Appeal

Where the City Engineer is given the authority by this ordinance to make a determination or finding, any person disagreeing with such determination or finding, may appeal to the City Council for a final determination. In case of such an appeal, the City Council can consider and by motion approve any drainage requirements that meet a standard of good engineering practice.