

WATER & WASTEWATER REGULATIONS FOR LAND DEVELOPMENT
(updated March 20, 2023)

GALVESTON COUNTY WATER CONTROL
AND IMPROVEMENT DISTRICT NO. 1

SECTION 1: Policy

This Board adopted policy shall be known and may be cited as the “Water & Wastewater Regulations for Land Development within Galveston County Water Control and Improvement District No. 1 or for Developments considered for Annexation”.

SECTION 2: Scope & Compliance

All plats, subdivisions of land, or development of property requiring the dedication of water lines, sewer lines, and/or facilities to the District shall conform to the requirements for these regulations. The District will not provide water and/or sanitary sewer service until full compliance with the regulations have been met which may include approval from District Engineer.

SECTION 3: Definitions

For the purpose of interpreting these regulations, certain words used herein are defined as follows:

- A) Subdivision: The term “Subdivision” means the division of a parcel of land into two (2) or more lots or parcels for the purpose of transfer of ownership or building development, or if any portion is intended for public use, any division of a parcel of land. The term includes re-subdivision and when appropriate to the context shall relate to the process of subdividing or to the land subdivided. The term includes re-subdivision and the alteration of parcels of lots by the modification of existing property lines.
- B) District: The term “District” refers to Galveston County Water Control and Improvement District No. 1.
- C) Development: The term “Development” means the construction or addition of any structure to a lot, block, or tract of land that may require water, sewer, or fire protection services.
- D) Developer: The term “Developer” refers to the individual or entity with primary responsibility for to Development.
- E) Developer Agreement: The term “Developer Agreement” refers to the agreement made between the District and the Developer outlining any required improvements to be made to the District’s existing water and wastewater systems in order for the District to provide service to the Development.
- F) Preliminary Drawing: The drawing of any lot, or parcel of land not intended to be recorded or of record.
- G) Final Drawing: The final drawing is the division of any lot, tract, or parcel of land that is to be recorded of record.
- H) Interpretation: It is the Developer’s responsibility to familiarize himself to understand these regulations, If any section or words are unclear to the Developer; it is his responsibility to contact the District for interpretation.

SECTION 4: General Requirements

- A) When in a City or County maintained public right-of-way, all water and sewer lines shall be located no closer than five (5) feet to the right-of-way line and seven (7) feet to the edge of the existing pavement.
- B) When in a TxDOT maintained public right-of-way, all water and sewer lines shall be located in a separate utility not less than ten (10) feet wide outside TxDOT’s right-of-way.

C) Capacity Analysis:

A water and wastewater capacity analysis, completed by the District's Engineer, must be performed for all residential developments or expansions greater than twenty-five (25) Equivalent Single-Family Connections (ESFC) or any Multi-use / Commercial / Industrial Development greater than one (1) acre in size. The Developer shall pay the cost of the analysis as outlined in Section 8.

D) Miscellaneous Requirements:

- 1) The description and location of all permanent survey monuments, block corners, and other markers shall be shown on the drawings and meet the following standards unless the City or County with jurisdiction has more stringent requirements:
 - a) Each lot must be accurately surveyed, and suitably corner markers located.
 - b) Every change of direction on the perimeter survey shall be permanently marked.
 - c) Permanent benchmarks, based on Horizontal State Plane Coordinates (NAD83) Texas South Central Zone and Vertical NAVD88 Geoid 18, not more than one thousand (1,000) feet apart along all right-of-way lines. Elevation on fire hydrants, manhole rings, and spikes in utility poles will not be acceptable.

SECTION 5: Water and Sewer Design Approval Procedure

STAGE 1

- A) Preliminary Discussion: The Developer shall meet with District Staff and District Engineer to discuss the proposed Development, the location to be developed, and the Development's feasibility for obtaining water and sewer service from the District. No commitment is being made by the District during this phase.

STAGE 2

- A) Preliminary Development Plan Submittal: Developer shall submit to the District and District Engineer a copy of the proposed development site plan and utility layout. The Developer shall also provide a tabulation of the land area to be devoted to various uses and a calculation of the average residential density per net acre with water and sewer demands that are to be used by the District Engineer to calculate water and sewer availability and capacity.
- B) Capacity Analysis: To receive a formal letter of capacity commitment from the District, the District's Engineer will first need to perform a water and wastewater capacity analysis based on the Developer's provided Preliminary Development Plan.
- 1) This analysis will begin only after the Developer pays the District the required fee as outlined in Section 8.
 - 2) The District Engineer will take the provided water and sewer demands of the Development and perform the following:
 - a) Water demands from the Development will be entered into the District's water system model to verify whether the District can meet the demands (daily, peak, and fire) with the existing water system infrastructure. The District Engineer will plan for the proposed water service to be provided by a looped system. The District will not allow a proposed Development to be served by a single dead-end water line. In addition, the District Engineer will review the minimum water system capacity requirements required by the Texas Commission on Environmental Quality (TCEQ) and confirm if the District's plant facilities (i.e., pumps, ground/elevated storage tanks, etc.) have adequate capacity to serve the Development or if additional plant capacity is needed to serve the Development.

- b) The theoretical capacity of the District's wastewater collection system, lift stations and wastewater treatment plant in the development area will be calculated using available data. The current wastewater usage will be estimated to obtain the theoretical available remaining capacity of the system. The sewer demands from the proposed Development will be compared to the available remaining capacity of the wastewater collection system, lift station(s) and wastewater treatment plant to verify if the existing infrastructure can serve the proposed Development. If the proposed Development exceeds the available remaining wastewater capacity, the District Engineer will propose long term solutions or improvements.
- c) Anticipated duration to complete this analysis is 4 to 6 weeks but may vary depending on the development size and location within/outside the existing District service boundary.
- 3) The District and District Engineer will meet with the Developer to discuss the results of the capacity analysis and, if needed, infrastructure improvements.
- 4) The District will prepare and provide a Utility Commitment Capacity Letter to the Developer based on the following conditions:
 - a) The results of the capacity analysis determine that no further improvements are required to the District's existing water and wastewater systems and plant capacities to service the Development; OR
 - b) The results of the capacity analysis determine that additional improvements are required to the District's existing water and wastewater systems and/or plant capacities to service the development. The District and Developer shall enter into an agreement ("Developer Agreement") that outlines these necessary improvements and the entity responsible for payment of associated design fees and construction costs.
- 5) The District's Utility Commitment Capacity Letter is valid for two (2) years from the date of issuance unless the Letter provides otherwise. The Developer must be at Stage 4) Construction of the Development within this time frame. If the District's Utility Commitment Capacity Letter expires prior to the start of construction for the Development, the District's capacity commitment is no longer valid and the Developer shall make a formal request to the District for a capacity commitment renewal. This renewal may also require the Developer to pay for another capacity analysis if the District Engineer determines that it is needed.

STAGE 3

- A) Design Drawing Submittals and Construction Approval: The Developer shall submit to the District, at appropriate 30%, 60%, 90% and 100% design stages, three (3) hard copies and one (1) electronic copy (in PDF format) of the Development's utility design plans and specifications for review by the District and District Engineer. The Developer shall also pay a plan review fee to the District as outlined in Section 8. The District reserves the right to waive certain design milestone submittals depending on the size of the proposed development.
 - 1) The District and District Engineer shall review the utility plans and details and confirm conformance to District requirements. Any comments received by the Developer will need to be addressed in the subsequent submittal.
 - a) Utility design plans and specifications shall be signed and sealed by a Professional Engineer registered in the State of Texas with sufficient experience to perform this work and conform to TCEQ and District design guidelines as specified in Section 10 and the District Standard Drawing Details.
 - b) The Developer shall submit to the District an approval letter from the TCEQ approving the design of the water and sewer systems.
 - c) If utility easements are required for District facilities, the Developer will need to designate such easements to the District on the development plat or prepare and provide the District with a separate written easement document. The final plat or easement documents shall be

recorded at the real property records of Galveston County, Texas prior to the District's acceptance of the improvements, if any.

- d) The City of Dickinson reviews and approves the private side plumbing plans, permits, and inspections for the District. Developer shall coordinate and provide separate submittal to the City of Dickinson for approval on these items. Any plan review fees required by the City of Dickinson are separate from any fees required by the District.
- 2) Upon receipt of the 100% utility plans and details and confirmation that all comments have been addressed, the District will issue a Construction Approval Letter to the Developer outlining the District's Construction Requirements, Tap Fee Schedule and Inspection Fee Schedule.
- 3) The District's Construction Approval Letter is valid for up to one (1) year from the date of issuance. If the District's Construction Approval Letter expires prior to the start of construction for the Development, the District's construction approval is no longer valid and the Developer shall make a formal request to the District for a construction approval renewal. This renewal may also require the Developer to pay the District another plan review fee.

STAGE 4

- A) Construction: The Developer, Developer's Engineer, and Developer's Contractor shall coordinate with the District during construction on the following items:
 - 1) The District shall be notified and requested to attend the pre-construction meeting to establish lines of communication during construction with the Developer's Contractor.
 - 2) The District shall be provided with a copy of the Contractor's utility submittals for review. Any District comments will need to be incorporated into the submittal response made by the Developer's Engineer. The District will need to be provided with a copy of the final approved submittal for each utility item.
 - 3) The District shall be provided an overall construction schedule that notes when connections to the District's existing facilities will be made by the Developer's Contractor. No taps or connections to the District's existing facilities shall be made by the Developer's Contractor unless under the presence of the District's Inspector.
 - 4) The Developer or Developer's Contractor shall pay the District the required tap fees and other costs identified in the District Construction Approval Letter prior to the District establishing active utility service to the development.
 - 5) The Developer or Developer's Contractor shall reimburse the District for any costs incurred related to the inspection of all water and sewer facilities installed by the Developer's Contractor as outlined in Section 8. This cost must be paid in full to the District prior to the District establishing active utility service to the development. These fees are separate from any fees required by the City of Dickinson.

STAGE 5

- A) Construction Acceptance & Maintenance Period: The District will require the following items be performed prior to the District's acceptance of the construction work:
 - 1) The District shall be notified and requested to attend the Substantial Completion and/or Final Completion Walkthrough(s). Any punch list items identified by the District will need to be incorporated into the final punch list prepared by the Developer's Engineer.
 - 2) The District shall be notified upon completion of the punch list items. The District will confirm that the punch list items have been addressed to the District's satisfaction and provide concurrence to the Developer's Engineer.
 - 3) The District shall be provided one (1) electronic copy (in PDF format) of the project's record drawings incorporating all changes or revisions made during construction.

- 4) Developer or Developer's Contractor shall post a maintenance bond in an amount equal to the value of work performed by the Developer's Contractor or other legal guarantee acceptable to the District to insure the District for maintenance for one year. After this one year maintenance period, the District will formally take over and maintain these utility facilities.
- 5) Upon receipt of the one year maintenance bond, the District will issue their Certificate of Acceptance.
- 6) The Developer will be responsible for notifying and scheduling with the District on the one year warranty inspection walkthrough.

SECTION 6: Guarantee of Construction Improvements

Approval of any final Development plans and/or documents shall not impose a duty upon the District concerning the maintenance or improvements of any such dedicated parts until one year after such improvements are made by the Developer and accepted by the District. Developers shall post a maintenance bond in an amount equal to the value of work performed by the Developer's Contractor or other legal guarantee acceptable to the District to insure the District for maintenance for one year. Prior to final approval by the District, together with all dedications of right-of-way for public use or utility easement for District use, the Developer shall formally agree in writing to provide necessary improvements in accordance with prevailing requirements of the District. Unless and until any development plan has been first approved in the manner and by the authorities provided for in this policy, no water service or sewer construction shall be made.

SECTION 7: Expenditure of Public Funds

The acceptance of a final plan by the District does not in any manner obligate the District to finance or furnish any improvements within the approved development.

SECTION 8: Schedule of Fees (Fees subject to change by future Board Action)

The following fees shall be collected by the District.

A) Capacity Analysis: If a Development meets the criteria established in Section 4 requiring a capacity analysis, the Developer will be required to pay the District a capacity analysis fee based on the following categories:

1. Developments Located Inside District Boundaries
 - a) NOT Anticipated to Require New or Expanded Infrastructure, Lump Sum Fee = \$5,600.00
 - b) Anticipated to Require New or Expanded Infrastructure, Lump Sum Fee = \$10,800.00.
2. Developments Located Outside District Boundaries, Lump Sum Fee = \$13,900.00.

Once this fee is received in full by the District, the District Engineer will be authorized to perform this capacity analysis. The District reserves the right to request for the Developer to pay additional fees if the results of the capacity analysis require expanded infrastructure when it was originally not anticipated.

B) Plan Reviews: The cost of review of a Design Drawing Submittal by the District and/or District Engineer shall be paid for by the Developer at the time of submittal. The plan review fees are based on the following development categories:

1. Residential Plan Review Fees:
 - a) 1-10 ESFC Development = \$250.00
 - b) 11-24 ESFC Development = \$500.00
 - c) 25 or Greater ESFC Development = \$1,000.00

2. Commercial / Industrial / Mixed-Use Plan Review Fees:

- a) Less than one (1) acre = \$250.00
- b) Greater than one (1) acre = \$1,000.00

C) Construction Inspection: If District personnel perform an inspection, the Developer or Developer's Contractor shall pay the District the cost it incurs related to the inspection of all water and sewer facilities installed by the Developer's Contractor on a monthly basis and within thirty (30) days of the District's invoice for such costs. The fee charges for this service shall be based on the following inspection charges and are separate from those collected by the City of Dickinson:

- 1. Hourly - \$100 per inspection hour (minimum charge of \$100 per inspection).
- 2. Half Day - \$500 per every inspection lasting four (4) hours.
- 3. Full Day - \$1,000 per every inspection lasting eight (8) hours (considered full working day).

SECTION 9: Variances

The District may authorize a variance of any requirement of this Policy if it deems strict compliance with the requirements of this article is not in the best interest of the general public. In permitting such variance, the District shall take into consideration the existing and proposed water and sewer plan, public health, safety, convenience, and welfare in the District. The District when granting such variance shall cause to be incorporated in the official minutes of the Board of Directors meeting the specific variance granted.

SECTION 10: District Water and Sanitary Sewer System Design Requirements

A) Sanitary Sewer System

- 1) Design: All sanitary sewer system improvements shall be designed in accordance with the Texas Commission on Environmental Quality (TCEQ) Chapter 217 and the District's requirements noted herein and on the District's Standard Detail Drawings.
- 2) Materials: Sanitary sewer lines shall be of the following materials:
 - a) Polyvinyl Chloride (PVC) minimum SDR-26 heavy wall sewer pipe and fittings conforming to the latest revision of ASTM D-3034, ASTM D-2241, ASTM D-1784, STM D-2672, having a cell classification of 12454-B, and shall have flexible elastomeric gasket joints as approved by the District.
- 3) Construction: Sanitary sewers shall be constructed according to the latest revision of TCEQ Chapter 217 and ASTM D-2321 (PVC) as to trenching, bedding alignment, grade, installation, backfill, and compaction. Sanitary sewer and manhole separation with water lines shall follow TCEQ requirements.
- 4) Manholes: Manholes shall be spaced a distance not to exceed 500 feet and shall conform to the District's Standard Detail Drawings, including a 32" diameter hinged ring and cover per detail. Manholes to be precast concrete and minimum 4-foot diameter. No brick materials allowed. Concrete design mix to include Zypex waterproofing admixture.
- 5) Force Mains: Force mains shall be constructed of the following materials:
 - a) Polyvinyl chloride (PVC) DR 18 (235 PSI) with restrained joints (either integral bell or bell and spigot joints restrained at fittings), and elastomeric gaskets conforming to the latest revision of AWWA C900 and ASTM D-2241.

- b) Ductile Iron (DI) with restrained joints (pressure class 350), double wrapped in 8-mil polyethylene in accordance with District's Standard Detail Drawings.
 - c) Mechanical joint ductile iron fittings conforming to AWWA C-153, pressure rating 250 psi. Cement lining in accordance with AWWA C-104 and interior/exterior coatings in accordance with AWWA C-104 and C-153.
 - d) PVC Pipe restraints shall be Megalug in accordance with District's Standard Detail Drawings.
- 6) Size: All sanitary sewer mains shall be a minimum of eight (8) inches in diameter unless in specific areas approved by the District. All force mains must be a minimum of four (4) inches in diameter unless it is used in conjunction with a grinder pump.
 - 7) Velocities: All sanitary sewer mains must contain a slope sufficient to allow a velocity not less than 2.0 feet per second and not more than 10 feet per second when flowing at full capacity. All force mains must contain a minimum velocity of either 3.0 feet per second for duplex lift stations or 2.0 feet per second for triplex or larger lift stations. Triplex or larger lift station force mains will also require a minimum flushing velocity of 5.0 feet per second to occur at least two times a day.
 - 8) Lift Stations: Lift Stations shall be duplex, with non-clog Flygt submersible pumps manufactured by Xylem conforming to minimum design criteria of the TCEQ. An all-weather access road, three phase electrical service and potable water service shall be provided at the proposed lift station site. All structures located above ground shall be enclosed. Pumps and controls, including SCADA, shall conform to the District's requirements.
 - 9) Services: Sanitary sewer service lines shall be 6" SDR-26 PVC or 4" Schedule 40 PVC as specified in the District's Standard Detail Drawings. Cleanouts shall be installed for each service at the property line with a threaded plug adapter (cap) installed a minimum of two (2) feet above existing grade. All taps to the sanitary sewer main shall either be a SDR-26 PVC tee or tap saddle with stainless steel straps. A SDR to DWV adapter shall also be provided when transitioning from SDR-26 PVC to Schedule 40 PVC.
 - 10) Grease Traps: Grease traps and a sampling well shall be installed for any commercial connection preparing food, or on any other connection responsible for waste discharges that include, but are not limited to, grease, oil, sand, or flammable waste. Design and capacity of grease trap shall be in accordance with City of Dickinson requirements and approved by the District. Grease traps shall be subject to periodic inspections by the Galveston County Health District. In addition, the connection may be subject to compliance with the District's latest Wastewater Pretreatment Ordinance.
 - 11) Testing: All sanitary sewer lines shall be tested in accordance with the TCEQ regulations, except that allowable leakage shall not be more than 50 gallons per inch of inside diameter per mile of pipe per twenty four hours for entire test section including manholes. The Developer shall provide all material, labor, and equipment necessary for testing. The District's Inspector shall be notified twenty-four (24) hours prior to a test and shall observe all tests. All test results shall be submitted in writing to the General Manager by the Developer. All PVC sanitary sewers shall be mandrel tested for deflection and televised prior to acceptance by the District. The maximum deflection allowed for the pipe shall be 1° per joint while fittings shall be based on the pipe size (2"-4" = 8°, 6" = 7°, 8"-12" = 5°, 14"-16" = 3.5°, 18"-24" = 3°, 30"-64" = 2°). One year from date of completion of construction and before final acceptance by the District, the Developer shall provide for the televised inspection of all sanitary sewer mains.
 - 12) The Developer is required to install service connections for sewer service. Obtain the current standards from the District prior to construction.

B) Water Distribution System

- 1) **Design:** All water distribution system improvements shall be designed in accordance with the Texas Commission on Environmental Quality (TCEQ) Chapter 290 and the District's requirements noted herein and on the District's Standard Detail Drawings.
- 2) **Materials:** All pipe and fittings shall be approved by the American Water Works Association for carrying potable water. Water lines shall be constructed of the following materials.
 - a) Polyvinyl chloride (PVC) DR 18 (235 PSI) with restrained joints (either integral bell or bell and spigot joints restrained at fittings), and elastomeric gaskets conforming to the latest revision of AWWA C900 and ASTM D-2241.
 - b) Ductile Iron (DI) with restrained joints at fittings (pressure class 350), double wrapped in 8-mil polyethylene in accordance with District's Standard Detail Drawings.
 - c) Mechanical joint ductile iron fittings conforming to AWWA C-153, pressure rating 250 psi. Cement lining in accordance with AWWA C-104 and interior/exterior coatings in accordance with AWWA C-104 and C-153, NSF61 approved.
 - d) PVC Pipe restraints shall be Megalug in accordance with District's Standard Detail Drawings.
 - e) All water lines shall have bank run sand embedment in accordance with District's Standard Detail Drawings.
- 3) **Valves:** All gate valves shall be resilient seated, non-rising stem, 2-inch square operating nut conforming to the latest revisions of AWWA C-500 and open left. Approved manufacturer is Mueller. All valves to include stainless steel bolts and shall be provided with an approved "A" Section valve box and cover. At intersections of water distribution lines, the number of valves will be one less than the number of radiating lines.
- 4) **Hydrants:** All fire hydrants shall be in accordance with District specifications. Hydrants shall be three-way with National Standard threading and include a 5" Hydro-Storz connection coupling on the main pumper nozzle. Approved manufacturers are Mueller or American Darling. Hydrants shall be located on six inch (6") or larger lines and looped with six inch (6") or larger lines. Minimum District fire flow requirement for all Hydrants shall be 1,000 gpm in residential and 3,500 gpm in all non-residential. Hydrants shall be spaced every 300 feet along commercial corridors and every 500 feet along residential streets in a manner acceptable to the fire department. There shall be a gate valve between the main and fire hydrant.
- 5) **Looping and Flushing Valves:** All water lines shall be looped whenever a dead end water line exceeds 250 feet. An automatic flushing device shall be provided at the end of all dead end lines and within 50 feet of a closed storm sewer for discharge of water.
- 6) **Services:** Water service lines shall be polyethylene tubing, 200 PSI, with sizes as specified in the District's Standard Detail Drawings. Corporation stop shall be Ford model with compression fitting. Curb Stop shall be Ford model with locking wing nut. All taps, regardless of water line size, to use 304 stainless steel, type 354 single strap tap saddle.
- 7) **Meters:** Water meters shall be provided by and installed by the District, with sizes and risers as specified in the District's Standard Detail Drawings. Proposed water meter sizes shall be approved by the District. All commercial/industrial connections shall have an approved testable backflow prevention device to be installed by a licensed plumber per state plumbing code and tested annually by the customer with results provided to the District.
- 8) **Size:** All water mains shall be a minimum of six (6) inches in diameter unless in specific areas approved by the District.

- 9) Pressure: Minimum pressure in the system shall be designed under a peak consumption to 55 pounds per square inch (PSI).
- 10) Construction: Water lines shall be constructed according to the applicable AWWA standards and District Standard Details as to trenching, bedding, alignment, grade, installation, backfill and compaction, but no less than four feet (4') of cover with six-inch sand wrap backfill. Water line separation with sanitary sewer lines and manholes shall follow TCEQ requirements.
- 11) Testing: All water lines are to be hydrostatically tested by the Contractor at 125 PSI for 8 hours or 150 PSI for 4 hours. Bacterial analysis samples shall be taken and have 100% negative results by the District before the new water system is connected to existing district lines. All water lines shall be tested in accordance with TCEQ requirements. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{S D \sqrt{P}}{133,200}$$

in which L is allowable leakage, in gallons per hour; S is the length of pipeline tested; D is the nominal diameter of the pipe in inches; and P is the average test pressure during the leakage test in pounds per square inch gauge. Testing shall be in accordance with AWWA C-600, and C-651. The Developer shall provide all materials, labor, and equipment necessary for testing. The District Inspector must be notified twenty-four (24) hours prior to test and shall observe all tests. All test results shall be submitted in writing to the General Manager by the Developer. The maximum deflection allowed for the pipe shall be 1° per joint while fittings shall be based on the pipe size (2"-4" = 8°, 6" = 7°, 8"-12" = 5°, 14"-16" = 3.5°, 18"-24" = 3°, 30"-64" = 2°).

- 12) The Developer is required to install the service connections for water service. Obtain the current standards from the District prior to construction.

C) Safety Standards

The Developer and Developer's Engineer shall be responsible for retaining the construction services of a reputable contractor for the installation of all water and sewer lines. Said contractor shall comply with all applicable OSHA safety standards. Further, said contractor shall comply with the District's confined space entry requirements.

APPROVED BY GALVESTON COUNTY WCID NO. 1
 BOARD OF DIRECTORS AT THE REGULAR MEETING OF MARCH 20, 2023