

CITY OF LA MARQUE

CHAPTER 2

~~GRAPHIC REQUIREMENTS~~

CONSTRUCTION PLAN AND MISCELLANEOUS REQUIREMENTS

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CONSTRUCTION PLAN AND MISCELLANEOUS REQUIREMENTS

2.1 REQUIRED PLAN SHEETS

- 2.1.1 Cover Sheet
- 2.1.2 Plat (latest version of the plat shall be included in the drawings)
- 2.1.3 Construction Notes and Legend
- 2.1.4 Overall Layouts for Proposed Improvements (Water and Sewer, Drainage, Paving, etc.)
- 2.1.5 Drainage Area Map and Calculations
- 2.1.6 Lot Grading Plan
- 2.1.7 Plan and Profiles
- 2.1.8 Storm Water Pollution Prevention Plan
- 2.1.9 Specific Construction Details
- 2.1.10 Standard City of La Marque Construction details

2.2 DRAWING REQUIREMENTS

- 2.2.1 Provide a cover sheet for all projects involving three or more drawings (including detail sheets). Plan sheet numbers and names shall be shown on the cover sheet. Include a vicinity map to identify project location within the City. Provide the City of La Marque signature block for the City Engineer with a note stating that approval is valid for 1 year only from date of signatures. Provide a signature block for the City Engineer on all internal sheets. Signature blocks is provided in Appendix “B”.
- 2.2.2 Drawings shall be prepared on nominal 24 inch x 36 inch overall drawings.
- 2.2.3 Show service area on cover sheet or area map.
- 2.2.4 After final approval has been granted, submit drawings with mylars on India ink or produced by on mylars. The engineer shall also submit, at this time, electronic AutoCAD (.dwg) and digital file in (PDF) file(s) of all construction plan sheets on digital versatile disk (DVD).

- 2.2.5 Details of special structures (not covered by approved standard drawings, such as stream or gully crossings, special manholes, or junction boxes, etc.) shall be drawn with vertical and horizontal scales equal to each other.
- 2.2.6 Each set of construction drawings shall contain overall paving and utility layout drawings indexing specific plan and profile sheets. Show all lot lines, property lines, rights-of-way lines and easement lines. Standard City drawings, where applicable, shall be included. All sheets shall have standard title blocks.
- 2.2.7 Draw overall layouts to a scale of 1 inch = 50 feet, 60 feet, 100 feet, or 200 feet.
- 2.2.8 Plan stationing must run from left to right, except for short streets or lines originating from a major intersection, where the full length can be shown on one sheet.
- 2.2.9 A north arrow is required on all sheets and should be oriented either toward the top or to the right.
- 2.2.10 Standard scales permitted for plans and profiles of paving and utility construction drawings are as follows:
- A. Major thoroughfares, streets with esplanades over 400 feet in length, or special intersections/situations:
 - a. 1 inch = 10 feet horizontal, 1 inch = 1 feet vertical
 - b. 1 inch = 20 feet horizontal, 1 inch = 2 feet vertical
 - B. Minor or residential single-family streets:
 - a. 1 inch = 20 feet horizontal, 1 inch = 2 feet vertical
 - b. 1 inch = 40 feet horizontal, 1 inch = 4 feet vertical
 - c. 1 inch = 50 feet horizontal, 1 inch = 5 feet vertical
- 2.2.11 Each sheet of the plans shall have a benchmark elevation and description, along with applicable flood plain information. Include Base Flood Elevation, FIRM panel number and flood zone designation. All files shall be designed to Texas State Plane Coordinate System – South Central 4204, NAVD 88, or current adjustment.
- 2.2.12 The seal, date, and original signature of the Licensed Professional Engineer responsible for the drawings shall be required on each sheet developed by the engineer. The engineer may use a stamped or embossed imprint for his seal; however, the embossed imprint must be shaded such that it will reproduce on prints.
- 2.2.13 If a roadway exists where drawings are being prepared to improve or construct new pavement or a utility, label the existing roadway width, surface type, and thickness, if available without destruction of pavement. Pavement thickness can be ascertained by coring. The resultant void shall be grout-filled.
- 2.2.14 Show all streets and/or roadway alignments on all drawings.

- 2.2.15 Develop drawings to accurate scale showing proposed pavement, typical cross-sections, details, lines and grade, all existing topography within street right-of-way, and any easement adjacent to the right of way. At intersections, the cross-street details shall be shown at sufficient distance (20 feet minimum distance outside the primary roadway right-of-way) in each direction along the cross-street.
- 2.2.16 Match lines shall not be placed at cross-street intersection for roadway alignment.
- 2.2.17 Natural ground profiles shall be shown as follows:
- A. For privately-funded projects, centerline profiles are satisfactory except where a difference of 0.50 feet or more exists from one right-of-way or easement line to the other, in which case, dual profiles are required.
 - B. For the City of La Marque projects, provide natural ground profiles for each right-of-way line. Easement profiles shall also conform to this requirement.
- 2.2.18 Identify all lot lines, property lines, easements, right-of-way, and drainage outfalls.
- 2.2.19 Label each plan sheet as to street/easement widths, pavement widths, pavement thickness where applicable, type of roadway materials, curbs, intersection radii, curve data, stationing, existing utilities (type and location), and any other pertinent feature affecting design.
- 2.2.20 Show all utility lines four inches or larger within the rights-of-way or construction easement in profile view. Show all utility lines, regardless of size, in the plan view, including fiber optic cables.
- 2.2.21 Graphically, show flowline elevations and direction of flow for all existing ditches.
- 2.2.22 Label proposed top of curb grades except at railroad crossings. Centerline grades are acceptable only for paving without curbs and gutters.
- 2.2.23 Curb return elevations for turnouts shall be shown in profiles.
- 2.2.24 The surface elevation at the property line of all existing driveways shall be shown in profile.
- 2.2.25 Station all esplanade noses or the centerline of all esplanade openings with esplanade width shown - both existing and proposed.
- 2.2.26 The design of both roadways is required on all paving sections with an esplanade.
- 2.2.27 Station all point of curvatures (PC) and point of tangency (PT), radius returns, and grade change point of intersection (PI) in plan view. Station all radius returns and grade change PIs in profile with their respective elevations.
- 2.2.28 Standard City Details shall be included, when applicable.

- 2.2.29 All property ownership and easement recordation information shall be shown on the plans.
- 2.2.30 Provide stormwater pollution prevention plan, including details on all public and private projects.

2.3 EASEMENTS

- 2.3.1 All easements and recording information, existing and proposed, shall be shown on the construction plans.
- 2.3.2 Storm sewer, sanitary sewer, and water line easements shall be dedicated for the specific intended use. Easements for a specific facility shall be exclusive and shall not overlap other easements, except to cross the easements.
- 2.3.3 Dry Utility Easements shall be minimum sixteen-feet (16').

2.4 UTILITY LOCATIONS

- 2.4.1 All utilities shall be underground with the exception of electric primary lines. The electric primary lines, defined as feeders or three phase lines, should be located around the subdivision perimeter whenever possible.

2.4.2 Water Line Location

- A. All water lines shall be located within a public right-of-way or within dedicated waterline easements. The location of water lines within a public street right-of-way is described in Section 3.3.3.
- B. Water lines shall not be located in combination easements.

2.4.3 Sanitary Sewer Location

- A. Sanitary sewers of twelve inches (12") or larger in diameter shall be within a public right-of-way or an easement adjoining the right-of-way. Sanitary sewers may be located in exclusive or combination easements provided the easement widths comply with Section 2.3.
- B. Sanitary sewers shall not be located in side lot easements.
- C. Sanitary sewers should be located within the right-of-way between the property line and the back of curb on the opposite side of the right-of-way from the water main.

2.4.4 Storm Sewers

- A. Storm sewers shall be located in the public street right-of-way in accordance with Section 5.3.6.E.c.
- B. All storm sewer lines shall be located within public rights-of-way or approved easements. Placement of a storm sewer in side lot and back lot easements is discouraged.

2.5 PRIVATE FACILITY LOCATIONS

- 2.5.1 Installation of private facilities, including utilities, in public road rights-of-way and their adjoining easements shall be approved by the City of La Marque.
- 2.5.2 Private facilities shall not conflict with other facilities in the right-of-way and shall not be located in exclusive easements as required in these Standards. All structures within the public right-of-way require approval from the City Engineer and shall be located so as to not interfere with existing or proposed public facilities.
- 2.5.3 All facilities in the right-of-way shall be located at least two feet (2') behind the curb and all underground facilities in the right-of-way shall be located at least two and one-half feet (2.5') below the top of curb on a public street.
- 2.5.4 Private facilities shall be constructed in accordance with construction plans approved by the City Engineer.
- 2.5.5 Landscaping within the public right-of-way or adjoining easements shall not affect public utilities or traffic visibility.

2.6 CROSSINGS

- 2.6.1 Highway Crossings - All State and County Roads
 - A. State Highway crossings shall be constructed in conformance with the requirements of the Texas Department of Transportation.
 - B. A water main shall be encased in a steel pipe casing extending at least five feet (5') from outside edge of each service road or outside edge of pavement, across the right-of-way to a similar location on the other side of the highway. For highway or roadway crossing with open ditches, the casings shall extend from right-of-way to right-of-way.
 - C. County road crossing shall be constructed in accordance with Galveston County requirements.
 - D. Where additional right-of-way has been acquired or will be required for future

widening, the casing, where required, should be carried to within ten feet (10') of each future right-of-way line.

2.6.2 Street Crossings

- A. All water main and sprinkler line crossings under major thoroughfare boulevards shall be encased. For all water mains, steel casing shall be used. For fire sprinkler lines, SDR 26 PVC or welded steel pipe shall be used.
- B. Conduits and sewers that do not carry liquid under pressure may be bored and jacked or microtunneled into place without an encasement pipe.
- C. Crossings under existing concrete streets shall be constructed by boring and jacking or microtunneling. PVC pipe shall be jacked into place using equipment designed for that purpose. Water may be used to facilitate the boring and jacking operations. Jetting the pipe main into place will not be allowed. When conditions exist that warrant open cut across an existing street, specific approval by the City Engineer is required.
- D. All street crossings shall be constructed in accordance with construction plans approved by the City. All street crossings shall be inspected by the City. All street crossings shall meet the requirements of these Standards.

2.6.3 Railroad and Pipeline Crossings

- A. For railroad crossings, the carrier pipe shall be encased in steel pipe casing extending from right-of-way to right-of-way.
- B. All construction within the railroad or pipeline right-of-way shall conform to minimum requirements set out in the agreement with the owner of the right-of-way.

2.6.4 Ditch and Stream Crossings

- A. Aerial crossings attached to the vehicular bridge structure are preferred by the City.
- B. Where existing or proposed bridges have sufficient space and structural capacity for installing water mains or conduits (twelve inches (12") or smaller) under the bridge, but above the top of the bent cap elevation, such installation will be permitted upon specific approval of the construction plans. In all cases, the water main or conduit shall be above the bottom chord of the bridge and eighteen inches (18") above the 100-year water surface elevation. All conduits attached to a bridge shall be constructed using steel pipe and shall extend a minimum of ten feet (10') beyond the bridge bent or to the right-of-way line, whichever is greater. All conduit attached to a bridge shall be maintained by the owner of the conduit

or will be subject to removal.

C. Separate, free-standing crossings across drainage ways are discouraged.

D. All stream or ditch crossings shall be constructed of steel pipe from right-of-way to right-of-way.

2.7 TRENCH SAFETY

2.7.1 Trench safety is required for all excavations greater than five feet (5') in depth, and shall conform to all applicable OSHA regulations.

2.8 BENCH MARKS

2.8.1 A permanent bench mark shall be set in each subdivision section or at a spacing of one mile, whichever is greater. The benchmark shall have an elevation based on the North American Vertical Datum of 1988 (NAVD 88), current adjustment.

2.8.2 The bench mark elevation and location shall be certified by a registered public surveyor as a Texas Society of Professional Surveyors (TSPS) Standard and Specifications for Category 8, TSPS Third Order Vertical Control Survey.

2.8.3 Accuracy of elevations for benchmarks shall be Texas Society of Professional Surveyors Category 8, Third Order.

2.8.4 All bench mark locations shall be provided with ties to existing monuments including coordinates based on the North American Vertical Datum of 1988 (NAVD 88), Texas State Plane Coordinate System, South Central Zone.

2.8.5 Bench marks shall be constructed of a brass disc set in concrete. The concrete footing for the bench mark shall be eight inches (8") in diameter and three feet (3') deep. Concrete shall be reinforced with two number four (2-#4) bars.

2.8.6 The construction plans shall clearly identify the location of the benchmark and shall include a complete description, coordinates and elevation, with adjustment date, of the benchmark.

2.9 RESIDENTIAL LOTS AND IMPROVEMENTS

2.9.1 All residential lots shall drain to a public right-of-way directly adjoining the lot. Drainage from a residential lot to a public right-of-way at the rear or side of a lot may be permitted provided the drainage system has been properly designed to accept the flow. Drainage from a residential lot to an adjoining greenbelt or golf course shall require a public easement for drainage purposes to be maintained by the homeowner's association or appropriate entity. Drainage to a private easement shall

be noted on the recorded subdivision plat. Drainage to a drainage district easement shall be approved by applicable Drainage District.

- 2.9.2 A lot grading plan showing proposed minimum slab elevations shall be included in the construction plans. If slab elevations do not change, a notice of minimum elevation will suffice.

2.11 FLOOD PLAIN MANAGEMENT

- 2.10.1 All flood plain development within city limits or the ETJ shall be reviewed and approved by the City Engineer.
- 2.10.2 Amendments to the published flood insurance rate maps, map revisions and all requests for changes to the base flood elevation within La Marque city limits or its ETJ shall be submitted to the City Engineer for review.
- 2.10.3 All data submitted shall be prepared under the supervision of a registered professional engineer and/or a registered public surveyor and shall comply with all requirements of the Federal Emergency Management Agency National Flood Insurance Program Regulations.