DIVISION 2 - CONSTRUCTION PLAN AND MISCELLANEOUS REQUIREMENTS

2.1 Required Plan Sheets

2.1.1 Cover sheet.
2.1.2 Preliminary plat. (Recorded plat shall be included in the record drawings.)
2.1.3 Construction notes and legend.
2.1.4 Overall plans for proposed improvements.
2.1.5 Drainage area map.
2.1.6 Site grading plan.
2.1.7 Plan and profiles.
2.1.8 Specific construction details
2.1.9 Standard Public Works construction details.
2.1.10 Street Light Layout from CenterPoint Energy (shall be included in the record drawings).

2.2 Drawing Requirements

2.2.2 A bench mark elevation and description is required on each sheet.

2.2.3 Label each plan sheet as to street right-of-way widths, pavement widths and thickness, type of roadway materials, curbs, intersection radii, curve data, stationing, existing utilities type and location, etc.

2.2.4 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.

2.2.5 A north arrow is required on all sheets and should be oriented either upward or to the right.

2.2.6 Show all lot lines, property lines, rights-of-way lines, and easement lines.

2.2.7 A cover sheet shall be required for all projects involving three (3) or more plan and profile sheets. All plan sheet numbers should be included on the cover sheet. A vicinity map should always be included to show the project location.

2.2.8 If a roadway exists where plans are being prepared to improve or construct new pavement or to construct a utility, this roadway should be labeled as to its existing width, type of surfacing, and base thickness, if available.

2.2.9 Plans prepared for the City of Webster shall be prepared using permanent ink, photographic or other approved process on Mylar.

2.2.10 Do not place match lines in intersections.

2.2.11 Service areas shall be delineated on the cover sheet or area map.

2.2.12 All utility lines within the right-of-way or construction easement should be shown in the plan and profile view.

2.2.13 Show flow line elevations and direction of flow of all existing ditches.

2.2.14 Show natural ground profiles along the centerline of each right-of-way or an easement line except as required below. When there is a difference of 0.50 feet or more from one right-of-way or easement line to the other, show dual right-of-way profiles.

2.2.15 Resolve all known conflicts of proposed utilities with existing utilities.

2.2.16 Plans shall be standard twenty-four inch by thirty-six inch (24" x 36") or (22” x 34”) overall dimensions.

2.2.17 Details of special structures not covered by approved standard drawings, such as stream and gully crossing, special manholes, etc., should be drawn with the horizontal and vertical scales equal to each other.

2.2.18 Plans shall be drawn to accurate scale, showing proposed pavement typical cross-sections and details, lines and grades, and all existing topography within the street rights-of-way; and at intersections, the cross street shall be shown at sufficient distance in each direction along the cross street for designing adequate street crossings.

2.2.19 Grades should be labeled for the top of curb except at railroad crossings. Centerline grades are acceptable only for paving without curbs and gutters.

2.2.20 Curb return elevations and grades for turnouts shall show in the profile.

2.2.21 Gutter elevations are required for vertical curves where a railroad track is being crossed.

2.2.22 The surface elevation at the property line of all existing driveways should be shown in the profile.

2.2.23 Station all esplanade noses affected by proposed construction, both existing and proposed.

2.2.24 Station all points of curvature, points of tangency, radius returns and grade change, points of intersection in the plan view. Station all radius returns and grade change points of intersection in the profile with their respective elevations.

2.2.25 The standard scales permitted for plans and profiles of paving and utility plans are as follows:

A. Major thoroughfares or special intersections/ situations:

1" = 2' Vertical; 1" = 20' Horizontal

B. Minor streets:

1" = 5' Vertical; 1" = 50' Horizontal
or
1" = 4' Vertical; 1"= 40' Horizontal
(for reconstruction on minor streets, a larger scale may be required to show detail.)

C. The scales described above are the minimum allowable. Larger scales may be required to show details of construction.

D. Deviations to these scales can only be allowed with the specific approval of the City Engineer.

2.2.26 In addition to the plan and profile sheets described above, each set of construction drawings shall contain paving and utility key drawings indexing specific plan and profile sheets. Key overall layouts may be drawn at a scale of one inch equals one hundred feet (1" = 100') or one inch equals two hundred feet (1" = 200').

2.2.27 Standard City details, where applicable, shall be included.

2.2.28 Construction plans shall include a legend describing standard symbols that may not be described in the plans.

2.2.29 All property ownership and easement information will be shown in the construction plans. Harris County recording information shall be shown in the construction plans. When ownership, easement, and right-of-way recording information is not shown on the plat included in the plans, this information will be shown on the construction plan sheets.

2.3 Graphic Standards

The graphic standards for the City Webster are taken directly from the City of Houston's "General Design Requirements for Sanitary Sewers, Storm Sewers, Water Lines, and Paving". These graphic standards are provided in Appendix A.

2.4 Easements

2.4.1 All easements and recording information, existing and proposed, shall be shown in the construction plans in accordance with Section 2.2.29.

2.4.2 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.

2.4.3 Water line easements - the following minimum width easements are required when facilities are not located within public street rights-of-way or water line easements:

A. Fire hydrants located outside of public rights-of-way or water line easements shall be encompassed by a ten-foot by ten-foot (10' x 10') or as required exclusive easement. Fire hydrants may not be located within any other type of easements.

B. Water meter easements shall be exclusive and should be located adjoining a public right-of-way or water line easement.

C. Two-inch (2") and smaller meters serving non-residential and multi-family developments shall be set in five-foot by five-foot (5' x 5') or as required exclusive water meter easements.

D. Three-inch (3") and larger meters shall be set in a minimum of ten-foot by twenty-foot (10' x 20') or as required exclusive water meter easements.

E. When specifically approved by the City Engineer, water mains may be located in easements not adjacent to public street rights-of-way. These water mains shall be centered in a sixteen-foot (16') wide or as required exclusive easement restricted to water only.

F. Water mains may be located at the center of a ten-foot (10’) water line easement, provided the easement adjoins the public right-of-way.

2.4.4 Sanitary Sewer Easements - the following minimum easement widths are required for the type of service:

A. Rear lot easements combining utilities with buried electric service and sanitary sewers of eight inches (8") and ten inches (10") in diameter shall have a minimum width of sixteen feet (16') or as required.

B. The total width of the easements as specified in paragraph A above shall be at least equal to the depth of the proposed sewer line.

C. The width of all exclusive sanitary sewer easements shall be equal to the depth of the sewer from finished grade plus two (2) pipe diameters. Sewer shall be located in the center of the easement. The minimum width of a sanitary easement shall be sixteen feet (16') or as required when split along a lot line, and ten feet (10') wide or as required for easements located within a single lot.

D. Exclusive sanitary sewer easement adjoining a public right-of-way may be five feet (5') wide provided the sewer is at least five feet (5') from the edge of the easement and the sewer is no deeper than ten feet (10'). Sewers at greater depth than ten feet (10') shall be centered within an exclusive easement parallel and adjoining the right-of-way as described in Section 2.4.4 C.

E. Exclusive easements for force mains of all sizes shall have a minimum width easement of sixteen feet (16') or as required for a single force main where the force main is not located adjacent to a public right-of-way. Where the force main is located in an easement adjacent to public right-of-way, the force main may be located at the center of a ten-foot (10') wide or as required easement.

F. Combined storm and sanitary sewer easement shall have minimum widths as required in Section 2.4.5 for storm sewer easements. Additionally, the sanitary sewer main, trunk or force main shall be located such that the centerline of the pipe shall be at least half the width of the easement, defined in Section 2.4.4 C, but not less than seven and one-half feet (7.5'), from the edge of the easement.

G. For combined storm and sanitary sewer easements located adjacent to public rights-of-way where the sanitary sewer is located along the outside of the easement, the centerline of the sanitary sewer pipe shall be at least half the width of the easement defined in Section 2.4.4 C, but not less than seven and one-half feet (7.5') from the outside edge of the easement.

H. Where sanitary sewers or force mains are installed in easements separated from public rights-of-way by other private or utility company easements, the sanitary sewer easement should be extended along or across the private utility company easement to provide access for maintenance of the sewer or force main.

2.4.5 Storm Sewer Easements - the following minimum easement widths are required:

A. The minimum width shall be twenty feet (20') with the storm sewer centered in an exclusive easement, except as specifically approved by the City Engineer.

B. For storm sewers greater than ten feet (10') and less than fifteen feet (15') in diameter or width, the minimum width of an exclusive easement shall be twenty-five feet (25'), or as specifically approved by the Public Works and Engineering Department.

C. For storm sewers whose depth to flow line is greater than fifteen feet (15'), add five feet (5') to the minimum easement width specified in Section 2.4.5 A and/or 2.4.5 B, above.

D. For all easements specified in Section 2.4.5, a minimum distance of five feet (5') or as required must be maintained from the easement line to the outside edge of the storm sewer.

E. Where approvals are granted for a special use or combination easement located along side lot or back lot, the minimum width shall be twenty-five feet (25') or as specifically approved by the Public Works and Engineering Department. The easement width shall meet or exceed all other easement requirements.

F. For specifically approved storm sewers located in an exclusive easement adjacent to public rights-of-way, the minimum easement width shall be ten feet (10') or as specifically approved by the Public Works and Engineering Department. The easement width shall meet or exceed all other easement requirements.

2.5 Utility Locations

2.5.1 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.

2.5.2 Water Main Location

A. All water mains shall be located within a public right-of-way or within dedicated water main easements. The location of water mains within a public street right-of-way is described in Section 3.4.

B. Water mains shall not be located in combination easements without the specific approval of the Public Works and Engineering Department.

2.5.3 Sanitary Sewer Location

A. Sanitary sewer laterals less than ten inches (10") in diameter and less than eight feet (8') deep may be located within the back lot easement as described in Section 2.4.5.

B. Sanitary sewers of twelve inches (12") or larger in diameter are usually located within a public right-of-way or an easement adjoining the right-of-way. Large sanitary sewers shall be located within the public street right-of-way in accordance with Section 4.3.1. Sanitary sewers may be located in an exclusive or combination easements provided the easement widths comply with Section 2.4.5.

C. Sanitary sewers shall not be located in side lot easements without the specific approval of the Public Works and Engineering Department.

D. 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.

2.5.4 Storm Sewers

A. Storm sewer shall be located in the public street right-of-way in accordance with Section 5.3.

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. Specific approval of the Public Works and Engineering Department for the use of side lot or back lot easements for storm sewers should be obtained prior to plan preparation.

C. For boulevard paving sections with esplanades, the storm sewer is usually located in the center of the esplanade.

2.6 Private Facility Locations (Not Including Landscaping)

2.6.1 Installation of private facilities, including utilities, in public road rights-of-way and their adjoining easements shall be approved by the City of Webster.

2.6.2 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 shall be approved by the Public Works and Engineering Department and shall be located so as to not interfere with existing or proposed public facilities.

2.6.3 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 unless approved by the City Engineer.

2.6.4 Private facilities shall be constructed in accordance with construction plans approved by the Public Works and Engineering Department.

2.6.5 Landscaping within the public right-of-way or adjoining easements shall not affect public utilities or traffic visibility.

2.7 Crossings

2.7.1 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 crossings with open ditches, the casings shall extend from right-of-way to right-of-way.

C. 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.

2.7.2 Street Crossings

A. All water main and sprinkler line crossings under major thoroughfare boulevards shall be encased using a minimum of P.V.C. pipe, SDR 26, as shown on the City of Webster construction detail for "Water Main Encasement". Welded steel pipe may be substituted on street crossing, when specifically approved by the Public Works and Engineering Department.

B. Conduits and sewers that do not carry liquid under pressure may be bored and jacked into place without an encasement pipe or as specifically approved Public Works and Engineering Department.

C. Crossings under existing concrete streets, other than major thoroughfares, shall be constructed by boring and jacking. P.V.C. 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 the place will not be permitted. When conditions exist that warrant open cut across an existing street, the Public Works and Engineering Department shall specifically approve the crossing.

D. All open cut installations across existing or proposed streets shall be backfilled as shown in the City of Webster Construction Details. Cement stabilized sand backfill shall meet the requirements of Section 4.2.3.

E. All street crossings shall be constructed in accordance with construction plans approved by the City. All street crossings shall be inspected by the Public Works and Engineering Department. All street crossings shall meet the requirements of these Standards.

2.7.3 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.

2.7.4 Ditch and Stream Crossings

A. Crossing under a stream or ditch is preferred by the City. The top of the carrier pipe shall be designed to provide a minimum clearance of at least four feet (4') below the ultimate flow line and sides of the ditch and with sufficient bottom length to exceed the ultimate future ditch sections.

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 not allowed.

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

2.8 Trench Safety

All construction within the City of Webster shall conform to the requirements for trench safety. Trench safety is required for all excavations greater than five feet (5') in depth. Adequate details for construction in accordance with applicable OSHA regulations will be required in all construction plans that are approved by the City of Webster.

2.9 Street Lighting

2.9.1 The installation of street lighting shall be mandatory along all public streets in the City of Webster. In addition, the installation of street lighting is strongly encouraged along existing or repaved streets.

2.9.2 The location of street lights will be designed by CenterPoint Energy formerly known as Houston Lighting and Power Company (HL&P) and reviewed and approved by the Public Works and Engineering Department.

2.9.3 Private lighting systems may supplement or replace all or a portion of public street lighting as long as the net result provides equivalent lighting to the standard set herein. A perpetual entity, such as an incorporated homeowners association and/or an appropriate private entity, shall notify the City of Webster of its agreement to pay for the operation, maintenance, and insurance of a private lighting system prior to installation of the system. The system shall be approved by the City Engineer.

2.9.4 Street lights shall be designed in accordance with CenterPoint Energy

Standards & Guidelines.

2.10 Bench Marks

2.10.1 A permanent bench mark shall be set in each subdivision section or at a spacing of one mile, whichever is greater. The bench mark shall have an elevation based on the National Geodetic Vertical Datum of 1929, current adjustment.

2.10.2 The bench mark elevation and location shall be certified by a registered public surveyor as a Texas Surveyors Association Standard and Specifications for Category 8, TSA Third Order Vertical Control Survey.

2.10.3 Accuracy of elevations for bench marks shall be Texas Surveyors Association Category 8, Third Order.

2.10.4 All bench mark locations shall be provided with ties to existing monuments including coordinates using Texas Plane Coordinate System, Central Zone.

2.10.5 Bench marks shall be constructed of a brass disc set in concrete as approved by the City of Webster. 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) rebars.

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

2.11 Residential Lots and Improvements

2.11.1 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 shall require a public easement for drainage purposes to be maintained by the homeowner's association or appropriate private entity. Drainage to a private easement shall require specific approval by the City Engineer. Drainage to a private easement shall be noted on the recorded subdivision plat. Drainage to a Harris County drainage easement shall be approved by the Harris County Drainage District.

2.11.2 A lot grading plan showing proposed minimum slab elevations will be included in the construction plans. If slab elevations do not change, a notice of minimum elevation will suffice. The minimum slab elevation shall also be shown on the subdivision plat.

2.12 Flood Plain Management

2.12.1 All development shall conform with the requirements of the National Flood Insurance Program, as required by the regulations of the local governing authority having jurisdiction.

2.12.2 Amendments to the published flood maps, map revisions and all requests for changes to the base flood elevation within the City of Webster city limits shall be submitted to the Community Development Department for approval. Technical data required by the Federal Emergency Management Agency and justification for the proposed change must be included with all requests.

2.12.3 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.