CITY OF ANNA

ORDINANCE NO. 857-2020

AN ORDINANCE OF THE CITY OF ANNA, TEXAS; AMENDING THE ANNA CITY CODE OF ORDINANCES BY AMENDING CHAPTER 9 PLANNING AND DEVELOPMENT REGULATIONS; ARTICLE 9.03 DESIGN STANDARDS; DIVISIONS 1 THROUGH DIVISION 9; PROVIDING FOR A PENALTY FOR ANY VIOLATION OF THIS ORDINANCE NOT TO EXCEED $2,000; PROVIDING FOR SAVINGS AND SEVERABILITY, AND REPEALING CLAUSES; PROVIDING FOR AN EFFECTIVE DATE; AND PROVIDING FOR THE PUBLICATION OF THE CAPTION HEREOF.

WHEREAS, the City Council of the City of Anna, Texas (the "City Council"), has previously adopted ordinances, rules, and regulations governing Planning and Development Regulations including design standards for public infrastructure; and

WHEREAS, the City Council has investigated and determined that it would be advantageous and beneficial to the City and its citizens to amend Chapter 9 Planning and Development Regulations, Article 9.03 Design Standards of the Anna City Code of Ordinances ("Anna Code") by referring to the City of Anna Design Standards Document, as approved by the City Council and amended from time to time;

NOW, THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ANNA, TEXAS, THAT:

Section 1. Recitals Incorporated.

The above-referenced recitals are incorporated herein as if set forth in full for all purposes.

Section 2. Amendment.

In accordance with Article 1.01 of the Anna City Code of Ordinances, ("Anna Code"), the following amendments are made to Chapter 9 (Planning and Development Regulations, Article 9.03 (Design Standards);

ARTICLE 9.03 DESIGN STANDARDS

Division 1. Generally

Sec. 9.03.001 ~~Introduction~~Design Standards Manual

(a) The "Design Standards ~~and Specifications~~ Manual" is designed to implement the provisions of the subdivision ordinance and to provide for the orderly, safe, healthy and uniform development of the area within the city's corporate limits and its extraterritorial jurisdiction (ETJ).

~~(b) The 4th edition of the NCTCOG Standard Specifications for Public Works Construction dated October 2004 as modified by the City of Anna Special Provisions are supplemental and are made a~~

~~part of these design standards. These documents are to be considered as the minimum requirements of engineering design. The adherence to the requirements of these documents and/or the approval by the city and its agents in no way relieves the developer of the responsibility for adequacy of design, which may require more stringent standards than these, the completeness of plans and specifications or the suitability of the completed facilities. In unusual circumstances, the city may determine that designs other than those of the standards are necessary and will inform the developer of such requirements before final engineering review.~~

(b) The Design Standards Manual is hereby adopted by the City Council and may be amended from time to time by the City Council by ordinance. The Design Standards Manual shall be considered the minimum requirements for engineering design and construction of public infrastructure in the City of Anna, Texas.

~~(c) The developer shall obtain authorization from the city, in writing, for any deviations from the requirements set forth in the design standards and specifications manual.~~

~~(2008 Code, pt. III-B, sec. 1.1)~~

(c) A copy of the latest edition of the City of Anna Design Standards Manual is available at the office of the City Secretary, at the Public Works Department facility, and online at the City of Anna website.

(Ordinance __ adopted 4/28/2020)

~~Sec. 9.03.002 Standards of design~~

~~The design standards, as adopted by the city, are set forth herein. These standards shall be considered as the minimum requirements, and it shall be the responsibility of the developer to determine if more stringent requirements are necessary for a particular development. It is not intended that the design standards cover all aspects of a development. For those elements omitted, the developer will be expected to provide designs and facilities in accordance with good engineering practice and to cause the facilities to be constructed utilizing first class workmanship and materials. (2008 Code, pt. III-B, sec. 1.2)~~

~~Sec. 9.03.003 Standard specifications for construction~~

~~The City of Anna Special Provisions to the NCTCOG Standard Specifications for Public Works Construction as adopted by the city is referenced in this document. The Standard Specifications for Construction set forth the minimum requirements for materials and workmanship for streets, parking lots, sidewalks, drainage, water, and wastewater systems. These specifications should be considered as minimum requirements and such additional requirements as the developer or the city may consider appropriate should be added as supplements. (2008 Code, pt. III-B, sec. 1.3)~~

~~Sec. 9.03.004 – Standard details~~

~~In an effort to have uniformity and to facilitate maintenance, the city has adopted the North Central Texas Council of Governments (NCTCOG) Standard Drawings as modified by the City of Anna Special Provisions for certain facilities such as manholes, street sections, sidewalks, water, wastewater, storm water, curb inlets, barrier-free ramps, etc. The City of Anna Special Provisions to the NCTCOG Standard Details are located in division 8 of this article. The NCTCOG Standard Specifications can be obtained from the North Central Texas Council of Governments at 616 Six Flags Drive, Suite 200, Arlington, Texas, 76005, (817) 640-3300. (2008 Code, pt. III-B, sec. 1.4)~~

~~Sec. 9.03.005 – Materials testing and quality control~~

~~Testing of materials and quality control for all development construction shall be performed by an approved materials testing laboratory and payment for such services shall be made by the contractor. The city engineer shall approve the testing laboratory nominated to perform the service. It is the contractor's responsibility to show, through test procedures and results, that the work is in conformance with these design standards. All testing shall be completed with an employee or representative of the city present. (2008 Code, pt. III-B, sec. 1.5)~~

~~Sec. 9.03.006 – Utilities to be underground~~

~~All utilities within a residential development shall be placed underground. Utilities are defined for this purpose as water pipelines, wastewater pipelines, storm water pipelines, natural gas pipelines, telephone wires, cable TV wires and electric wires. In case of special or unique circumstances, the city may grant variances or exceptions to this requirement. Any request for variance or exception should be submitted in writing to the city setting forth the justification for an exception. The granting of a variance or exception by the city will be in writing. No work will be accepted without written approval from the director of public works or city designee, or in the case of franchise utilities, the city council. Commercial developments may have overhead utilities as approved by the city. (2008 Code, pt. III-B, sec. 1.6)~~

~~Sec. 9.03.007 – Submittal to utility companies~~

~~(a) The developer shall be responsible for submittal of information needed to design private utilities for the development. This information shall be submitted to TXU-Electric, ONCOR, Southwestern Bell, ATMOS-Gas, the cable TV franchise and any other appropriate utility.~~

~~(b) Written confirmation shall be submitted with the final engineering drawings, verifying that the affected utility companies have reviewed the final plat and easement description and agree that the easement locations and sizes are adequate and consistent with the design requirements of the utilities.~~

~~(2008 Code, pt. III-B, sec. 1.7)~~

~~Sec. 9.03.008 – Requirements of final engineering drawings~~

~~The final engineering drawings will consist of drawings showing all information necessary to completely review the engineering design of improvements proposed for or affected by the site and sealed by a registered professional engineer, licensed in the State of Texas. (2008 Code, pt. III-B, sec. 1.8)~~

~~Sec. 9.03.009 – Final acceptance~~

~~After improvements have been constructed, the developer shall be responsible for providing to the city "as-built" or "record drawings" mylars and one (1) set of "black line prints." The city will not accept the subdivision until the mylars and prints are submitted to the city. Mylars and prints shall be sized 22" x 34". The city shall also be furnished pdf images of each sheet named according to the sheet title and sheet number and AutoCAD 2010 or later format drawings on a CD-ROM (No XREFS) of the "as-built" or "record drawings" (digital). (2008 Code, pt. III-B, sec. 1.9)~~

~~Sec. 9.03.010 – Warranty~~

~~As a condition of final acceptance the contractor shall furnish a two (2) year maintenance bond in the amount of 100% of the public improvements, which shall become effective from the date of acceptance. (2008 Code, pt. III-B, sec. 1.10)~~

~~Secs. 9.03.011–9.03.040 – Reserved~~

~~Division 2. Streets~~

~~Sec. 9.03.041 – General provisions~~

~~The street system, including the street layout, shall be in accordance with generally accepted engineering practices and in compliance with the comprehensive plan, the latest thoroughfare plan, the zoning ordinances, the subdivision regulations and other applicable regulations. The plans and specifications, and other applicable data, shall be submitted to the city for review. Construction shall not commence prior to approval of the plans and specifications by the city. All changes during construction shall be submitted to the city's engineer for approval and acceptance by the city prior to any construction modifications. (2008 Code, pt. III-B, sec. 2.1)~~

~~Sec. 9.03.042 – Street arrangement~~

~~(a) – Unless otherwise approved by the city, provisions shall be made for the extension of existing major arterials, collector streets and local streets in accordance with the thoroughfare plan and any specific street alignments as adopted by the city council.~~

~~(b) Off-center intersections will be considered for approval only for minor collector and local streets, and only when there is a minimum centerline separation of 125', unless otherwise approved by the city's engineer.~~

~~(c) Within residential areas, the following design elements are encouraged:~~

~~(i) developing only a limited number of access points to arterial streets bordering the subdivision;~~

~~(ii) incorporating curvilinear streets into the plan;~~

~~(iii) more than one point of access; and~~

~~(iv) incorporating a discontinuous residential street network, which utilizes three-way intersections in lieu of four-way intersections. When these factors are incorporated into a residential street plan, the result is enhanced character and traffic safety.~~

~~(2008 Code, pt. III-B, sec. 2.2)~~

~~Sec. 9.03.043 Thoroughfare and street geometry~~

~~(a) Geometric design standards are presented in two formats within this division. Table 2.1 identifies specific design criteria for each standard roadway type. Figures 2.1A and 2.1B show the typical cross-section for each standard roadway type. It is noted that dimensions shown are to the back of curb, unless specifically identified otherwise.~~

~~(b) Each roadway type is keyed to the city thoroughfare plan, with the exception of local streets. The reader is referred to this document for information as to the locations where these roadways are to be used.~~

~~TABLE 2.1. GEOMETRIC DESIGN STANDARDS~~

~~FIGURE 2.1A~~

~~FIGURE 2.1B~~

~~TYPICAL CUL-DE-SAC PLAN VIEW~~

~~FIGURE 2.2~~

~~MEDIAN DESIGN STANDARDS~~

~~FIGURE 2.3~~

~~MINIMUM DRIVEWAY SPACING AND CORNER CLEARANCE~~

~~(2008 Code, pt. III-B, sec. 2.3)~~

~~Sec. 9.03.044 Turn lanes~~

~~All left-turn storage areas shall be ten (10) feet wide with minimum storage requirements for left-turn lanes as in figure 2.2. The transition curves used in left-turn lanes shall be two (2), 250-foot radius reverse curves with a total transition length of 100 feet. (2008 Code, pt. III-B, sec. 2.4)~~

~~Sec. 9.03.045 Median openings, width, location and spacing~~

~~(a) Arterial thoroughfares in the city are to have raised medians. Arterials having single lane two-way left-turn lanes are discouraged and may be allowed only in special circumstances with the approval of the city council.~~

~~(b) Median openings at intersections shall be from right-of-way to right-of-way of the intersecting street, unless otherwise approved by the city's engineer.~~

~~(c) The width of mid-block median openings shall not be less than 60 feet, or greater than 70 feet.~~

~~(d) Using the above requirements, examples of the minimum distance between median openings on a divided street where left-turn storage is provided in both directions are:~~

~~(1) 310 feet from nose to nose of the median from the intersection of two major thoroughfares to a street or drive (see figure 2.2);~~

~~(2) 260 feet from nose to nose of the median from the intersection of two secondary thoroughfares or a secondary thoroughfare and a major thoroughfare to a residential street or a drive; and~~

~~(3) 220 feet from nose to nose of the median for intersection combinations of drives and/or residential streets.~~

~~(2008 Code, pt. III-B, sec. 2.5)~~

~~Sec. 9.03.046 Driveway locations~~

~~(a) Minimum standards for driveway separation accessing the same site are shown in figure 2.3. This standard applies to all nonresidential uses.~~

~~(b) There is a minimum distance upstream and downstream from adjacent intersections within which driveways should not be located. This separation distance varies with the classification of street and is shown in figure 2.3. This standard applies to all nonresidential users.~~

(c) At mid-block access points, there is a minimum distance from a median nose, within which driveways should not be located. This is shown in figure 2.3 and is equally applicable along both major and minor arterials for nonresidential uses.

(2008 Code, pt. III-B, sec. 2.6)

Sec. 9.03.047 Block lengths

In general, streets shall be provided at such intervals as to serve cross traffic adequately and to intersect with existing streets. Where no existing plats control, the blocks shall be not more than 1,200 feet in length. Block arrangements must provide access to all lots, and in no case, shall a block interfere with traffic circulation. (2008 Code, pt. III-B, sec. 2.7)

Sec. 9.03.048 Street intersections

(a) More than two streets intersecting at one point shall not be allowed. All streets and thoroughfares should intersect other streets and thoroughfares at an angle of ninety (90) degrees unless otherwise approved by the city's engineer.

(b) Arterial and collector street intersections shall have property line corner clips with a minimum tangent distance of thirty (30) feet. Residential streets shall not normally be required to have a corner clip at their intersection with other streets or thoroughfares, but a 10-foot by 10-foot sidewalk corner easement will be required.

(c) Curb radii at intersections shall have a minimum radius of thirty (30) feet along arterials, twenty-five (25) feet along collectors and twenty (20) feet along residential streets.

(d) In any case where streets intersect at an angle of other than ninety (90) degrees, the city shall review and comment regarding non-standard right-of-way corner clips and curb return radii.

(2008 Code, pt. III-B, sec. 2.8)

Sec. 9.03.049 Relation to adjoining streets

(a) The system of streets designed for the development, except in approved cases, must connect with streets already dedicated in adjacent developments. Where no adjacent connections are platted, the streets must be the reasonable projection of streets in the nearest subdivided tracts and must be continued to the boundaries of the tract development, so that other developments may eventually connect with the proposed development.

(b) At the intersection of a new subdivision street with an existing boulevard arterial, the developer of the subdivision shall construct a median opening in the boulevard, unless otherwise directed by the city in writing.

~~(c) Strips of land controlling access to or egress from other property or any street or alley or having the effect of restricting or damaging the adjoining property for development or subdivision purposes or which will not be taxable or accessible [assessable] for special improvements shall not be permitted in any development unless such reserve strips are conveyed to the city in fee simple. The city planning director or the city's engineer makes this determination. When such access is needed to maintain permanent city-owned utilities, the roadway will be an improved right-of-way. If the utilities are temporary, an improved easement may be approved.~~

~~(2008 Code, pt. III-B, sec. 2.9)~~

~~Sec. 9.03.050 Dead-end streets, cul-de-sacs and courts~~

~~Cul-de-sacs are permitted and encouraged within residential subdivisions. Use of this design shall provide proper access to all lots and shall not exceed six hundred (600) feet in length, measured from the center of the cul-de-sac to the center of the intersecting street (not a dead-end street). Specific aspects of the standard cul-de-sac design are given in figure 2.1B. In lieu of the typical design shown, the city may approve alternative concepts for a specific application. (2008 Code, pt. III-B, sec. 2.10)~~

~~Sec. 9.03.051 Street grades~~

~~Arterial streets may have a maximum grade of seven and one-half (7-1/2) percent, for a maximum continuous distance of two hundred (200) feet. Collector streets may have a maximum grade of seven and one-half (7-1/2) percent. Residential streets may have a maximum grade of ten (10) percent, unless otherwise approved by the city, where the natural topography is such as to require steeper grades. All streets must have a minimum grade of at least five-tenths (0.5) of one (1) percent. Centerline grade changes with an algebraic difference of more than one (1) percent shall be connected with vertical curves in compliance with the minimum length requirements set forth in table 2.2.~~

~~TABLE 2.2. CREST VERTICAL CURVES~~

~~(2008 Code, pt. III-B, sec. 2.11)~~

~~Sec. 9.03.052 Pavement design~~

~~(a) Pavement and pavement subgrades (roadway and fire lanes) shall be designed based on representative on-site soil subsurface conditions. Pavement design calculations shall be prepared by professional engineer licensed in the State of Texas, and be submitted with the preliminary construction plans for review as part of the construction plan review process. The submittal shall include the pavement design traffic loadings and design life.~~

~~(b) Pavement and subgrade shall be as follows:~~

~~(1) Residential pavement. Reinforced concrete pavement thickness shall be determined by pavement design calculations. Minimum thickness of reinforced concrete pavement shall be no less than six (6) inches reinforced with no. 3 bars at 18-inch centers both ways. Concrete strength shall be NCTCOG Item 303.3.4.2, class C (3,600 psi compressive strength in 28 days), with a cement content of not less than 6 sacks per cubic yard. Subgrade preparation and thickness shall be based on pavement design calculations and shall be lime stabilized no less than six (6) inches in depth. All curbs shall be 6" monolithic barrier curbs.~~

~~(2) Arterial, minor collector, major collector, and fire lane pavement. Reinforced concrete pavement thickness shall be determined by pavement design calculations. Minimum thickness of reinforced concrete pavement shall be no less than eight (8) inches reinforced with no. 3 bars at 18-inch centers both ways. Concrete strength shall be NCTCOG Item 303.3.4.2, class C (3,600 psi compressive strength in 28 days), with a cement content of not less than 6 sacks per cubic yard. Subgrade preparation and thickness shall be based on pavement design calculations and shall be lime stabilized no less than six (6) inches in depth.~~

~~(3) Subgrade.~~

~~(A) Subgrade design shall be based on representative on-site subsurface soil conditions and testing. Testing shall be in accordance with the NCTCOG Standard Specifications for Public Works Construction and be completed by a geotechnical testing lab. The geotechnical investigation shall be submitted to the city as part of the pavement design submittal. In general, the soils testing shall include representative soil borings of the site and the testing of Atterburg limits. Based on the testing results, the pavement design shall provide the percentage of the subgrade lime stabilization proposed. Stabilization shall span the width of the street, back-of-curb to back-of-curb, plus twelve (12) inches beyond the back of curb on each side, and be a minimum of six (6) inches in depth, unless greater extents recommended by the geotechnical investigation. Subgrades shall be mechanically compacted to ninety-five (95) percent Standard Proctor densities at optimum moisture.~~

~~(B) Future driveway cuts on existing streets shall have proposed driveway pavement constructed within 48 hours of driveway excavation or a temporary concrete mud mat shall be constructed to protect the existing street subgrade from excessive moisture penetration or moisture evaporation.~~

~~(2008 Code, pt. III-B, sec. 2.12)~~

~~Sec. 9.03.053 Parkways, grades and sidewalks~~

~~(a) All parkways shall be constructed to conform to top of curb grades with a standard transverse slope of one-quarter (1/4) inch per foot rise from top of curb to right-of-way.~~

(b) Where the natural topography is such as to require steeper grades, transverse slopes (except for sidewalk) up to three-quarters (3/4) inch per foot may be used with approval of the city.

(c) Sidewalks shall be provided for all residential streets in subdivisions zoned for one- or two-family dwellings and on all streets designated on the adopted master thoroughfare plan. Barrier-free ramps and sidewalks along screening walls, landscaped areas, trails or in parks, shall be installed by the developer with street construction and the sidewalks in front of residential lots shall be installed by the home builder. The city may require sidewalks in other locations. Where provided, these shall not be less than four (4) feet in width with the inside edge of the sidewalk to be placed one (1) foot off the property line and located wholly within the dedicated street right-of-way, sidewalk corner easement or road easement in the case of private streets. This requirement may be waived by the city council.

(d) Sidewalks placed adjacent to the back of the curb must be six (6) feet wide and approved by the city's engineer.

(e) Sidewalks shall be of concrete having a minimum of 3000 psi compressive strength in 28 days. The concrete thickness shall be four (4) inches reinforced with no. 3 bars at 18-inch centers both ways. A minimum of 1-1/2 inches of sand must be placed under sidewalk. Subgrade (including sand) shall be mechanically compacted to 95% density.

(2008 Code, pt. III-B, sec. 2.13)

Sec. 9.03.054 Driveway dimensions

(a) Residential. Residential driveways to serve two-car garages shall be not less than sixteen (16) feet nor more than twenty-four (24) feet in width at the property line. The width of the driveway will be larger at the garage for a three-car (width to be twenty-eight (28) feet). Shared driveways and garages larger than three cars shall be a case-by-case basis. Residential driveways shall be separated from one another by a distance of at least ten (10) feet. The radii of all residential driveway returns shall be a minimum of five (5) feet and shall not extend past the adjoining property line. The driveway approaches devoted to one use shall not occupy more then sixty percent (60%) of the frontage abutting the roadway or alley.

(b) Multifamily and nonresidential. Driveways providing access to multifamily or nonresidential uses shall generally have widths between twenty-four (24) and forty-five (45) feet when measured at their narrowest point near, or at, the property line. The minimum radius for these uses shall be twenty (20) feet. Larger radii are encouraged. Limitations on permissible locations for these driveways are addressed in section 9.03.046 (Driveway locations). Driveway radii returns shall not extend across abutting property lines.

(2008 Code, pt. III-B, sec. 2.14)

Sec. 9.03.055 Traffic information and control devices

~~(a) The developer shall arrange for the installation of all pavement striping, regulatory, warning and guide signs, including posts, as shown on the approved plans. Street name signs shall be installed at each intersection. Examples of regulatory, warning, information and guide signs are as follows:~~

~~(1) Regulatory signs shall include, but are not limited to, STOP, 4-WAY, YIELD, KEEP RIGHT and speed limit signs.~~

~~(2) Warning signs shall include, but are not limited to, DEAD END, NO OUTLET, DIVIDED ROAD and PAVEMENT ENDS.~~

~~(3) Guide signals shall include, but are not limited to, street name signs, DETOUR, direction arrow and advance arrow.~~

~~(4) Traffic striping shall be provided by the developer as shown on the approved plans.~~

~~(b) The street signs shall be extruded and engineering grade. Sign posts shall be galvanized steel and set in concrete. The developer shall be responsible for the expenses incurred by the city for manufacture and installation of these signs.~~

~~(c) House street numbers shall be placed on the curbs for each lot and on the side of the house facing the street frontage.~~

~~(2008 Code, pt. III-B, sec. 2.15)~~

~~Sec. 9.03.056 Street lighting~~

~~All developments shall be provided with streetlights. In, general, lights should be located at street intersections and at intervals no greater than four hundred (400) feet apart. Streetlights should be the equivalent of 175-watt mercury vapor fixtures on minor residential streets. All collector and arterial, or commercial streets shall have sodium vapor fixtures with a minimum wattage of 250 or 400 watts as directed, in writing, by the city. In some instances, the city may require greater wattage. (2008 Code, pt. III-B, sec. 2.16)~~

~~Sec. 9.03.057 Barrier-free ramps~~

~~Barrier-free ramps shall be provided in all commercial areas and in residential areas which have sidewalks. Ramps shall be located to provide access in accordance with the standards set by the Americans with Disabilities Act (ADA) at all pedestrian sidewalks and meet all Texas Accessibility Standards (TAS). Lay down curbs and ramps shall be constructed at all street intersections and driveways whether or not sidewalks are being installed. Lay down curbs and ramps shall be constructed by the developer. The developer shall be responsible for paying for and arranging for all TAS design reviews and post-construction inspections. Results of TAS inspections shall be provided to the city. (2008 Code, pt. III-B, sec. 2.17)~~

~~Sec. 9.03.058 Off-street parking~~

~~All parking areas and spaces shall be designed and constructed in accordance with the following requirements:~~

~~(1) All parking areas and spaces shall be designed and constructed so as to have free ingress and egress at all times.~~

~~(2) No parking space or parking area shall be designed so as to require a vehicle to back into a public street or across a public sidewalk, except in the downtown overlay district, as defined by the city.~~

~~(3) Minimum dimensions for off-street parking.~~

~~(A) Ninety-degree parking (figure 2.4A). Each parking space shall not be less than nine (9) feet in width and eighteen (18) feet in length with two (2) feet of overhang between curb and sidewalk or property line (20-foot minimum). Dual head-in parking spaces should be a minimum of twenty (20) feet in length; aisle width shall not be less than twenty-four (24) feet.~~

~~(B) Sixty-degree angle parking (figures 2.5A and 2.5B). Each parking space shall be not less than nine (9) feet wide perpendicular to the parking angle nor less than twenty and one-tenth (20.1) feet in length when measured at right angles to the building or parking line. Maneuvering space shall be not less than fourteen and one-half (14-1/2) feet for one-way traffic or twenty-two (22) feet for two-way traffic perpendicular to the building or parking line.~~

~~(C) Forty-five degree angle parking (figures 2.6A and 2.6B). Each parking space shall not be less than nine (9) feet wide perpendicular to the parking angle nor less than nineteen (19) feet in length when measured at right angles to the building or parking line. Maneuvering space shall be not less than twelve (12) feet for one-way traffic or twenty-one (21) feet for two-way traffic perpendicular to the building or parking line.~~

~~(D) Parallel parking. Each parking space shall not be less than nine (9) feet in width and twenty-two (22) feet in length. Maneuvering space will not be less than twenty (20) feet.~~

~~(E) Handicap space parking. Handicap parking spaces are required to meet ADA and TAS regulations.~~

~~(F) When off-street parking facilities are located adjacent to a public alley, the width of said alley may be utilized as a portion of the maneuvering space requirement, provided the alley is paved.~~

~~(G) When off-street parking facilities are provided in excess of minimum amounts herein specified, or when off-street parking facilities are provided, but not required by this article, said off-street parking facilities shall comply with the minimum requirements for parking and maneuvering space herein specified.~~

~~(4) Paving standards.~~

(A) Unless otherwise approved by the city council or as specified in these standards, all parking lots shall be paved with concrete or asphalt, and designed according to city standards and specifications. The parking lanes must be clearly marked by approved paint, buttons or other material. All driveway approaches shall be constructed of concrete in the same strength as the adjacent street and shall be curbed per city standards.

(B) The pavement within a designated loading area shall be designed and constructed to carry the additional loading of merchandise, goods, sanitation pickup, etc., in order to prevent any unnecessary failure in the pavement itself. The pavement design shall be included in the engineering construction plans and specifications and submitted to the city's engineer for review.

(C) Fire lane pavement shall be a minimum of six (6) inches with lime stabilized subgrade. Concrete strength shall be NCTCOG Item 303.3.4.2, class C (3,600 psi in 28 days). Asphalt fire lanes are not permissible, unless approved by the city.

(5) All entrances or exits in a parking lot shall be a minimum of thirty (30) feet from the beginning point of any corner radius.

(6) All entrances or exits in a parking lot shall be a minimum of twenty-four (24) feet and a maximum of forty-five (45) feet in width, unless one-way, in which case they shall both be a minimum of twelve (12) feet, or as approved by the city council.

(7) The driveway approach angle to any parking area shall be a maximum of sixteen (16) degrees; the departure angle a maximum often (10) degrees; the ramp angle a maximum of eleven (11) degrees; or otherwise shall be approved by the city's engineer.

(8) No parking areas or parking spaces shall be allowed to pave over or utilize public right-of-way, with the exception of approved entrances and exits, unless the city council approves a site plan provided by the developer.

(9) Any lighting used to illuminate any off-street parking area shall be so designed and constructed as to direct the light onto the property and away from any adjoining property or, street.

(10) All multifamily and commercial parking areas and parking spaces shall be designed and constructed to protect adjacent residences from the direct glare of headlights of vehicles using the parking area.

(11) All multifamily, retail, commercial and industrial parking lots shall be required to provide a fire lane with a minimum width of twenty-four (24) feet (requires minimum thirty (30) foot inside curve radius).

(12) No city street curb, alley or street pavement may be cut without a permit from the city.

FIGURE 2.4A

90° PARKING - DOUBLE ROW

~~FIGURE 2.5A~~

~~60° PARKING - DOUBLE ROW~~

~~FIGURE 2.5B~~

~~60° PARKING - SINGLE ROW~~

~~FIGURE 2.6A~~

~~45° PARKING - DOUBLE ROW~~

~~FIGURE 2.6B~~

~~45° PARKING - SINGLE ROW~~

~~(2008 Code, pt. III-B, sec. 2.18; Ordinance adopting 2019 Code)~~

~~Secs. 9.03.059–9.03.090 – Reserved~~

~~Division 3. Storm Drainage Facilities~~

~~Sec. 9.03.091 – Introduction~~

~~(a) – Drainage facilities shall be designed and constructed at such locations and of such size and dimensions to adequately serve the development and the contributing drainage area above the development, as well as the affected areas downstream. The developer shall provide all the necessary easements and rights-of-way required for drainage structures including storm drains and open channels, lined or unlined. Easement widths for storm drain pipelines shall not be less than fifteen (15) feet, and easement widths for open channels shall be at least fifteen (15) feet wider than the top width of the channel. In all cases, easements shall be of an adequate size to allow proper maintenance.~~

~~(b) – The design, size, type and location of all storm drainage facilities shall be subject to the review of the city's engineer and acceptance by the city. The requirements set forth herein are considered minimum requirements. The developer and the developer's engineer shall bear the total responsibility for the adequacy of design. The review by the city's engineer and/or acceptance of the facilities by the city in no way relieves the developer of this responsibility.~~

~~(c) – Storm drainage released from the site will be discharged to a natural watercourse or storm sewer system of an adequate size to convey the 100-year storm runoff expected after development.~~

~~(2008 Code, pt. III-B, sec. 3.1)~~

~~Sec. 9.03.092 – Storm drainage design criteria~~

~~(a) – Generally. The City of Plano's current Storm Drainage Design Manual shall be used for storm drainage calculations. Drainage area calculations, storm pipe calculations, and inlet capacity calculations are required with engineering plan submittals, at a minimum. Additional information may be required by the city.~~

~~(b) – Storm pipe size. The minimum size storm sewer line shall be eighteen (18) inches.~~

~~(c) – 100-year flood zones. Where the Federal Emergency Administration (FEMA) has defined a flood hazard area with regard to a drainage course, the flood hazard zone and the floodplain and floodway, if available, shall be shown on the plat and drainage area map. Any development proposed within a floodplain shall complete a flood study to determine that the proposed development meets the city's current floodplain management ordinance and will not be detrimental to any other property.~~

~~(d) – Local 100-year flood zones. 100-year flood zones shall be determined for non-FEMA creeks or streams (flowing or not) within a subdivision.~~

~~(e) – Access. Storm drainage facilities shall include all elements of a drainage system consisting of streets, alleys, storm drains, channels, culverts, bridges, swales and any other facility through which or over which storm water flows, all of which the city must have a right in, either in the form of a dedicated right-of-way, floodway or drainage easements.~~

~~(f) – Storm drainage management plan. All new subdivisions shall provide as part of the subdivision review process a complete storm drainage management plan. This plan will include, but not be limited to, the following: a complete review of all on-site, upstream and downstream drainage within the impacted watershed; determine all on-site and downstream drainage facility improvements due to the increased runoff from the proposed development and future upstream and downstream developments; and shall contain calculations necessary to determine compliance with the standards of design herein. The plan shall be done, using current zoning conditions or land use prescribed by the city's land use plan (whichever creates the greatest storm water runoff), with maximum development considered throughout the watershed. The storm drainage plan shall show all necessary improvements with flow data provided at each point of interception of water. As part of the storm drainage plan, the developer shall show a lot grading plan to direct all water to proper intersection points avoiding cross flow of water from lot to lot. All upstream discharge shall be intercepted and carried through the proper intersection points avoiding cross flow of water from lot to lot. All upstream discharge shall be intercepted and carried through the proposed development in compliance with the standards of design herein. All discharge from the proposed development shall be designed in accordance with the standards of design herein with all necessary improvements being installed by the developer to protect downstream property from damage. The determination of necessary improvements to existing drainage facilities downstream of a proposed development shall be reviewed by the city's engineer for compliance and adequacy.~~

~~(g) – Storm water pollution prevention plan. The developer shall provide a storm water pollution prevention plan (SWPPP), in compliance with all TCEQ and NPDES regulations, for each project. A copy~~

~~of the SWPPP and Notice of Intent (NOI) shall be on file at the city prior to the issuance of a building permit.~~

~~(h) Exemptions. At the city's discretion, alternative storm sewer design criteria and calculations may be considered for special or unique development cases. The alternative design criteria to be considered by the city, on a case-by-case basis, and storm drainage design criteria shall be approved by the city council.~~

~~(2008 Code, pt. III-B, sec. 3.2)~~

~~Secs. 9.03.093–9.03.120 Reserved~~

~~Division 4. Vegetation~~

~~Sec. 9.03.121 General provisions~~

~~(a) All seeding, sodding and fertilizer requirements are to be completed in accordance with the North Central Texas Council of Governments (NCTCOG) standards and specifications and as modified by the city herein.~~

~~(b) Block sod may be utilized for erosion control. Block sod shall be growing grass sod of the type specified in the plans. Sod shall have a healthy and dense root system, be stored and maintained in a moist condition from the time of harvest until planted and be free from noxious weeds.~~

~~(c) Seed shall be from previous season's crop meeting the Texas Seed Law, including testing and labeling for pure live seed (PLS = Purity x Germination). Furnish seed of designated species, in labeled unopened bags or containers for inspection by the city's public works department. Seed shall be used within 12 months from the date of the season harvested. When Buffalo grass is utilized, use seed that is treated with potassium nitrate to overcome dormancy.~~

~~(2008 Code, pt. III-B, sec. 4.1)~~

~~Sec. 9.03.122 Coverage~~

~~The developer shall establish grass and maintain the sodded or seeded area, including watering, until a "stand of grass" is obtained. A "stand of grass" shall consist of 75% to 80% coverage and a minimum of one inch (1") in height. If a "stand of grass" has not been established within four weeks, re-sodding or re-seeding shall be required. Re-grading, re-sodding and re-seeding will be required in all washed areas and areas that do not grow. (2008 Code, pt. III-B, sec. 4.2)~~

~~Sec. 9.03.123 Planting season for seeding~~

~~Planting season for seeding:~~

~~(1) February 1 through May 15 (permanent rural seed mix):~~

~~Green Spangletop - 0.3 lb. PLS/ac.~~

~~Bermuda Grass - 1.2 lb. PLS/ac.~~

~~Sideoats Grama (El Reno) - 2.7 lb. PLS/ac.~~

~~Little Bluestem (Native) - 2.0 lb. PLS/ac.~~

~~Buffalograss (Texoka) - 1.6 lb. PLS/ac.~~

~~Illinois Bundleflower - 1.0 lb. PLS/ac.~~

~~(2) February 1 through May 15 (permanent urban seed mix):~~

~~Green Spangletop - 0.3 lb. PLS/ac.~~

~~Bermuda Grass - 2.4 lb. PLS/ac.~~

~~Sideoats Grama (El Reno) - 3.6 lb. PLS/ac.~~

~~Buffalograss (Texoka) - 1.6 lb. PLS/ac.~~

~~(3) September 1 through November 30 (temporary cool season seeding):~~

~~Tall Fescue - 4.5 lb./ac.~~

~~Western Wheatgrass - 5.6 lb./ac.~~

~~Wheat - 34 lb./c.~~

~~(4) May 1 through August 31 (temporary warm season seeding):~~

~~Foxtail Millet - 34 lb./ac.~~

~~(5) A mix of seed shall be used in overlapping planting seasons.~~

~~(6) No seeding shall occur during the months of December and January.~~

~~(2008 Code, pt. III-B, sec. 4.3)~~

~~Secs. 9.03.124–9.03.150 Reserved~~

~~Division 5. Water System~~

~~Sec. 9.03.151 General provisions~~

~~(a) The design and construction of the water distribution system to serve the development shall be in accordance with good engineering principles, with these design standards and with the requirements of the Texas Commission on Environmental Quality (TCEQ). All off-site water mains shall be sized and located to conform to projected demands in accordance with the latest water master plan and the computer model with regard to the impact of each development on the existing and proposed water distribution system. No construction shall commence prior to the approval of the plans and specifications by the city.~~

~~(b) All facilities shall be of sufficient size to provide adequate capacity for ultimate development. The pipelines shall be sized to meet the maximum instant domestic requirements plus an appropriate allowance for fire protection water. The design criteria for water demand shall be submitted to the city with the plans and specifications. The city reserves the right to require larger pipelines than required for the proposed development in order to provide capacities for areas outside the development. The developer will be responsible to construct water lines adjacent to their property in accordance with the latest water master plan, across the frontage of the tract, or as required by the city. All facilities that are to be public shall be constructed with domestically manufactured materials.~~

~~(c) The minimum pipeline size to serve residential areas shall be eight (8) inches in diameter, and the minimum pipeline size serving commercial, business, industrial, etc. shall be eight (8) inches. In general, all lines shall be looped with no dead-ends. Dead-end lines will be considered on a case-by-case basis and shall be furnished with an approved flush valve arrangement. The developer shall provide facilities sufficient for fire flows in accordance with the minimum criteria of the state board of insurance or the fire code adopted by the city.~~

~~(d) Fire flows to be calculated with a minimum of thirty five pounds per square inch (35 psi) of residual pressure at the fire hydrant with a 35 psi residual in the water distribution system.~~

~~(2008 Code, pt. III-B, sec. 5.1)~~

~~Sec. 9.03.152 Connections to existing distribution system~~

~~(a) Preliminary discussions concerning take-off points in the distribution system should be conducted with the city public works department prior to finalizing the preliminary designs of the distribution system which will serve the development. Connections to the city's existing system will be allowed only at locations where the city has determined that sufficient quantity and pressures are available to meet the projected requirements of the development. In general, the connections to the existing distribution system shall be made in such a manner to keep "shut-downs" to a minimum. Preference will be given to a tapping sleeve and valve connections.~~

~~(b) In a proposed development where city water is not adjacent to the property but is accessible, the developer shall provide, at his expense, an off-site water main of sufficient size to serve his development or as shown on the city's water master plan, whichever is larger. The proposed development will normally require a loop into the existing water distribution system in order to provide adequate water pressure. The loop will be at the developer's expense.~~

~~(c) In general, the city will not approve a development which cannot be served by extensions to the city distribution system. Some areas in the city may be served by private water companies. In those cases, the developer shall contact and make proper arrangements with the private water company. The developer shall always be responsible to construct water facilities that meet city requirements and as shown on the city's water master plan. The city will observe the facilities during construction for compliance with these standards. This in no way relieves or reduces the obligations of the developer to comply fully with these requirements. Under certain circumstances, the city may consider approval of a private water system, which will supply an adequate quantity of potable water for all uses, including residential, commercial and firefighting requirements. Such systems must meet the approval of the city, the TCEQ, the state board of insurance, and all other appropriate regulatory agencies. In addition, an agreement between the city and the developer shall be executed whereby the city may acquire the system when it can be connected into the city's owned and operated distribution network. In all cases, the engineering drawings shall show the source of water for the development.~~

~~(2008 Code, pt. III-B, sec. 5.2)~~

~~Sec. 9.03.153 Location of facilities~~

~~(a) Pipelines. Water pipelines shall be located in the parkways between the back of the curb and the street right-of-way. The location shall be two feet (2') from the back of curb. Water lines installed adjacent to a development shall be installed the length of the frontage. A blue electronic marking system (EMS) locator pad will be located as shown in the standard drawings.~~

~~(b) Gate valves. Gate valves shall be located outside the paved streets and shall be two feet (2') from back of curb of the intersecting street. In general, gate valves shall be located at street intersections (except for fire hydrant leads). Maximum spacing of valves on water lines is 1,000'. All valve boxes shall be encased in a concrete pad that shall be twelve inches by twelve inches by six inches (12" x 12" x 6") and reinforced with no. 3 steel bars.~~

~~(c) Fire hydrants.~~

~~(1) In general, fire hydrants shall be located at each street intersection and at intervals on the interior of each block. All fire hydrants shall have isolation valves constructed as described above. No services lines or other connections will be allowed to the fire hydrant leads.~~

~~(A) Residential and duplex. Residential and duplex areas shall have a fire hydrant at each street intersection and at five hundred foot (500') intervals on the interior of each block. In no case shall there be more than four hundred feet (400') of hose lay from a fire hydrant and fire lane to any main building.~~

~~(B) Multifamily. Multifamily areas shall have a fire hydrant at each street intersection and at three hundred foot (300') intervals on the interior of each block and along fire lanes. In no case shall there be more than one hundred and fifty feet (150') of hose lay from a fire lane or two hundred and fifty feet (250') from a fire hydrant to any portion of a building.~~

~~(C) Commercial, retail and industrial. Commercial, retail and industrial areas shall have a fire hydrant at each street intersection and at a maximum of three hundred foot (300') intervals on the interior of each block and along fire lanes. In no case shall there be more than one hundred and fifty feet (150') from a fire hydrant and fire lane to any portion of a building in any development.~~

~~(2) All fire hydrants which are placed in off street rights-of-way shall have a paved concrete access road and proper pavement markings, which have been accepted by the fire marshal and city's engineer.~~

~~(3) All fire hydrants shall be marked in the center of the adjacent street with a Blue Stimsonite (or approved equal) Model 88-SSA fire hydrant marker.~~

~~(4) The spacing of fire hydrants shall be measured along the street frontage or fire lanes. The city fire marshal and city's engineer shall review all fire hydrant spacing. When a special condition exists due to land use, the fire marshal or city's engineer may require additional hydrants for fire protection.~~

~~(2008 Code, pt. III-B, sec. 5.3)~~

~~Sec. 9.03.154 Water service connections~~

~~(a) A water service pipeline shall be laid to each lot with fittings and a meter box in accordance with the Standard Details. All service pipelines, which supply water to each single-family lot, shall be constructed of SDR-9 (polytube) having a minimum size of three-fourths inch (3/4").~~

~~(b) All water services under pavement shall be encased in a minimum 2" diameter SDR 21 PVC encasement pipe or approved equivalent, with no couplings being installed under the roadway. The ends of the encasement pipe shall be sealed with silicone.~~

~~(c) All residential services shall be tapped to the PVC water main using double strap brass saddle. Tapping tees are required for all services larger than 4 inches.~~

~~(d) Meter box tops shall be set one-half inch to one and one-half inches (1/2" to 1-1/2") above the curb, and an angle meter stop shall be set six inches (6") below the meter box top. Meter boxes shall have a one-inch (1") wide slot from five inches (5") below the top of the box to the bottom of the box on the side facing the lot for service connection. All meter boxes shall be set at least two feet (2') behind the curb, with a "W" etched into the curb adjacent to the meter box.~~

~~(1) Installation of meter boxes. Installation of meter boxes with, with reader window within the lid, for single-family, multifamily, condominium, and townhouse developments may be installed only at approved locations. Each single-family and duplex residence shall have individual meters taps and boxes. Condominium, townhouse, or multifamily developments may use alternate installations, approved on a case-by-case basis.~~

~~(e) Service pipeline size for commercial and industrial developments shall be designed by the developer in accordance with the city's adopted Uniform Plumbing Code.~~

~~(2008 Code, pt. III-B, sec. 5.4)~~

~~Sec. 9.03.155 Materials and installation~~

~~(a) Pipe. Water pipelines shall be PVC pipe conforming to the Standard Specifications for Construction. In general, the water pipelines shall be AWWA Standard C-900 with cast-iron outside dimensions, and installed with a minimum of four feet (4') of cover from proposed final grade, unless otherwise approved by the city.~~

~~(b) All water mains under pavement shall be encased as follows:~~

~~(1) 8-inch through 10-inch - encase in SDR 35 PVC or approved equal.~~

~~(2) 12-inch and larger - encase in steel pipe, size and thickness (1/4" min.) to be approved by the city's engineer.~~

~~(c) All pipes not under pavement shall be installed in embedment material as shown on the Standard Details.~~

~~(d) All water pipe shall be installed with a "tracer tape" blue in color over the top of the pipe. The tape shall be Terra Tape "D" Detectable as supplied by Griffolyn Co., Inc. of Houston, Texas or approved equal. Locator marker pads shall be installed at 250 feet along water lines.~~

~~(e) Gate valves. All gate valves shall be conform to AWWA C-509 standards manufactured by Mueller, Clow, or an approved equal with resilient seat only and shall conform to and shall be installed according to the Design Standards and Specifications Manual.~~

~~(f) Fire hydrants.~~

~~(1) Fire hydrants shall be either Mueller, Clow, or an approved equal conforming to the requirements set forth in the Design Standards and Specifications Manual. All fire hydrants shall be installed with a six-inch (6") gate valve on the hydrant lead and located 3 feet off the back of curb. Fire hydrants shall be painted red. Fire hydrants, or an approved flush valve arrangement, shall be installed at the end of each dead-end line. Minimum main size for a fire hydrant for residential and nonresidential uses shall be eight inches (8").~~

~~(2) Fire hydrants shall be three-way breakaway type and conform to AWWA C-502 specifications.~~

~~(3) Fire hydrants shall be painted with two coats of TNEMEC Series 530 Omnithane paint or approved equal, and two coats of primer. Bonnet to flange and nozzle caps of fire hydrants shall painted with two coats of TNEMEC Safety Paint Series 2H "Hi-Build."~~

~~(g) Water service connections. Service pipelines shall be in accordance with the designs shown on the Standard Drawings. The materials shall be Mueller or approved equal and shall be installed in~~

accordance with the Standard Specifications for Construction. All connections shall be compression type or approved equal.

(h) Bends. Mega-lugs or approved equal shall be installed at horizontal change in directions 45° or greater and at all vertical change in directions that require a bend. The restraints shall be placed at the bend and at the next pipe joint in each direction from the bend.

(i) All irrigation meters shall have a testable double check backflow preventer.

(j) All iron fittings shall be covered and secured with plastic wrap prior to backfill being placed.

(2008 Code, pt. III-B, sec. 5.5; Ordinance adopting 2019 Code)

Secs. 9.03.156–9.03.180 Reserved

Division 6. Wastewater System

Sec. 9.03.181 General provisions

(a) The design and construction of the wastewater collection system to serve the development shall be in accordance with good engineering principles, these Design Standards and the requirements of the Texas Commission on Environmental Quality (TCEQ). No construction shall commence prior to the approval of the plans and specifications by the city. All sewer mains and lift stations shall be sized and located to conform to the projected flows in accordance with the latest wastewater master plan.

(b) All facilities shall be of sufficient size to provide adequate capacity for the ultimate development. The wastewater lines shall be sized to meet the peak-day dry weather flow plus an appropriate allowance for infiltration of storm water. The minimum wastewater pipeline size (other than service lines) for all developments shall be eight (8) inches in diameter. The design criteria and calculations shall be submitted to the city with the plans and specifications. The city reserves the right to require a pipeline of a larger size than that required by the development in order to provide capacities for areas outside of the development.

(c) All wastewater lines shall be installed at a depth sufficient to permit all water pipelines to be above the wastewater when the water pipeline has a minimum cover of four (4) feet. In such cases where water pipelines either cross or otherwise come within nine (9) feet of a wastewater pipeline, the wastewater pipe is required to be PVC pressure pipe with a minimum working pressure class of 150 psi.

(2008 Code, pt. III-B, sec. 6.1)

Sec. 9.03.182 Connections to existing wastewater collection system

(a) Preliminary discussion concerning entrance points in the collection system shall be conducted with the city public works department prior to finalizing the preliminary designs of the collection system. In a proposed development where city wastewater collection facilities are not adjacent to the property but are accessible, the developer shall provide, at his expense, a wastewater interceptor of sufficient size to serve his development and the contributing service area (using fully developed flows).

~~(b) In general, the city will not approve a development which cannot be served by extensions to the city's wastewater collection system. Lots with a minimum area of 1 acre may be considered, on a case-by-case basis, for a septic system, and will require city council approval. Lots with approved septic system shall be designed in the case that the city's wastewater collection system is extended to the lot, the septic system can be readily connected to the city's wastewater collection system.~~

~~(2008 Code, pt. III-B, sec. 6.2)~~

~~Sec. 9.03.183 Location of facilities~~

~~(a) Wastewater pipelines. Wastewater pipelines shall be located in the parkways between the back of the curb and the street right-of-way. The location shall be three feet (3') from the back of the curb. A green electronic marking system (EMS) locator pad is to be installed. No wastewater services can be connected to wastewater mains at depths greater than five feet (5'). Wastewater mains installed adjacent to a development shall be extended the length of the development frontage.~~

~~(b) Wastewater service pipelines.~~

~~(1) Wastewater service pipelines shall be laid to each lot. The service pipelines shall be PVC pipe having a minimum diameter of four (4) inches and shall extend to the property corner. Wastewater service pipelines shall be located at the center of each lot and as approved on the final construction plans by the city. In general, a service pipeline shall serve one lot. Special wastewater service sizing may be required. No sewer line shall be located nearer than five (5) feet from any tree or structure, nor any closer than ten (10) feet from any water service or main. Sewer services shall be encased under paved surfaces.~~

~~(2) All sewer services shall be connected to the main using a wye connection with a 45-degree bend to complete the connection. No tee connections will be allowed.~~

~~(3) The service shall be stubbed out a minimum of ten (10) feet from the back of curb and at a depth no greater than five (5) feet. The stub-out shall be capped with a proper fitting and shall have a double sweep cleanout installed within five (5) feet of the lot line and which extends to at least two (2) feet above the finished lot grade. The cleanout stack shall be set to grade during construction of the structure to be served and before a certificate of occupancy will be issued. After the street paving is complete, the letter "S" shall be cut into the concrete curb to locate the service.~~

~~(c) Manholes. In general, manholes shall be located at all intersections of wastewater pipelines, changes in grade, changes in alignment and at distances not to exceed five hundred (500) feet. For sewer line flowlines connecting eighteen (18) inches or greater above invert, an external drop manhole shall be constructed. Manholes shall be designed for loading conditions, and rims be flush with the surface, when placed under pavement. Manhole rims located in a landscaped area shall be six (6) inches above grade. Manholes located in floodplains, or areas with increased risk of flooding, shall have bolt-down lids. Manhole size shall be per table 6.1. Construct manholes at both ends of lines that are installed by other than open cut and at each end of aerial crossing lines. When manholes are installed adjacent or within a roadway, the letters "MH" shall be etched into the curb line.~~

~~TABLE 6.1. MINIMUM MANHOLE SIZES~~

~~(d) Cleanouts shall be installed at the ends of all lines that do not end with manholes. The maximum distance between a manhole and an upstream cleanout is three hundred (300) feet. Cleanouts located at the ends of lines located in residential developments will be considered on a case-by-case basis. Commercial and industrial developments require manholes at the ends of all lines.~~

~~(2008 Code, pt. III-B, sec. 6.3)~~

~~Sec. 9.03.184 Flows in wastewaters and their appurtenances~~

~~(a) Minimum grades. Wastewater lines should operate with velocities of flow sufficient to prevent excessive deposits of solid materials, otherwise objectionable clogging may result. The controlling velocity with regard to sediment deposition is near the bottom of the conduit and considerably less than the mean velocity flowing full of 2.5 feet per second (fps). Table 6.2 indicates the minimum grades for wastewater pipe with a Manning's "n" = 0.013 and flowing at 2.5 fps.~~

~~(b) Maximum velocities. The slope of a wastewater should also be such that excessive velocities will not damage the pipeline. The maximum desirable velocities of wastewaters shall be based upon the pipe manufacturer recommendations not to exceed 10 feet per second (fps).~~

~~TABLE 6.2. MINIMUM GRADES FOR WASTEWATER PIPELINES~~

~~(2008 Code, pt. III-B, sec. 6.4)~~

~~Sec. 9.03.185 Materials and installation~~

~~(a) Pipe.~~

~~(1) Pipe used for wastewater collection systems shall be PVC pipe conforming to the Design Standards and Specifications and the requirements of the Texas Commission on Environmental Quality (TCEQ). The wastewater pipeline shall conform to ASTM D3034 for sewer pipe and fittings from 4" to 15" in diameter and with ASTM F679, for sewer pipes and fittings greater than 15" in diameter, and shall have a minimum earth cover of three (3) feet. For depths of ten (10) feet or greater, the wastewater pipeline shall be a minimum pipe stiffness of 115 psi (SDR 26).~~

~~(2) All pipes shall be installed in embedment material as shown on the Standard Details. All pipelines shall be tested.~~

~~(b) Curved sewers. No vertical or horizontal curves will be allowed.~~

~~(c) Manholes.~~

(1) Manholes shall be of pre-cast concrete or cast in place and shall conform to the Standard Details.

(2) Manholes shall be corrosion protected, with the corrosion protection method approved by the city.

(2008 Code, pt. III-B, sec. 6.5)

Sec. 9.03.186 Testing

All wastewater lines shall be tested for infiltration in accordance with the procedures set forth in the NCTCOG Standard Specifications for Construction. A television survey shall be performed at the end of the construction period and will again be performed as part of the final testing in the tenth (10th) month of the maintenance period. The television survey shall include having water introduced into the wastewater line during the survey. Deficiencies noted shall be promptly corrected by the developer. All manholes will be hydrostatically or vacuum tested. The city's representative shall be present at all testing and copies of the testing reports shall be provided to the city upon completion. All expenses for this work shall be the developer's responsibility. (2008 Code, pt. III-B, sec. 6.6)

Sec. 9.03.187 Wastewater lift stations and force mains

All lift station design plans and specifications shall be submitted to the city public works department and TCEQ for review and approval prior to construction. Developments which increase the flow to existing lift stations will be subject to a pro-rata charge if sufficient capacity is available in the existing lift station or will be required to increase the capacity of the existing facility. Lift stations and force mains shall be designed and built for the upstream drainage area using a fully developed condition. This will include off-site areas if applicable. Developers are responsible for the construction of regional lift stations and force mains, as required by the wastewater master plan. (2008 Code, pt. III-B, sec. 6.7)

Secs. 9.03.188–9.03.220 Reserved

Division 7. Miscellaneous Requirements

Sec. 9.03.221 Grading

A sheep-foot roller shall be utilized for compaction of all fill material. (2008 Code, pt. III-B, sec. 7.1)

Sec. 9.03.222 Grading permit

A grading permit (exhibit 7.1 at the end of this section) shall be obtained prior to stockpiling or filling property within the city limits. Care shall be taken to avoid filling in drainage swales, creeks, wetlands, etc. Erosion protection shall be installed around stockpiled or stored material until grass is established. If

~~fill is placed for use other than stockpiling or storage, a grading plan shall be prepared by a professional engineer registered in the State of Texas and submitted with the grading permit. Densities shall be taken and proper compaction techniques used when placing the fill. In all cases a professional engineer registered in the State of Texas shall certify that the proposed fill location is not within a stream or creek (flowing or not) floodplain. If the city's engineer determines the fill is to be placed near a creek or stream or possible drainage way, the 100-year floodplain shall be staked by a registered surveyor. (2008 Code, pt. III-B, sec. 7.2)~~

~~Exhibit 7.1~~

~~City of Anna Fill Material Request Form~~

~~(2008 Code, pt. III-B, sec. 7.2)~~

~~Sec. 9.03.223 Private utility construction~~

~~(a) Trench backfill - City right-of-way.~~

~~(1) No concrete streets shall be open cut by utility companies without city approval, by permit. Utilities crossing concrete streets shall be tunneled or bored. Tunneling or boring methods shall be approved by the city prior to installation.~~

~~(2) Asphalt streets may be open cut, by permit. Backfill above utilities shall be concrete stabilized sand or cement. The asphalt pavement shall be repaired per city detail.~~

~~(3) All trench backfill is to be mechanically compacted to 95% Standard Proctor density within city rights-of-way. The compaction may be obtained by mechanical tamping, rolling, etc. No water jetting is allowed. In the parkway, the backfill material may be from the excavated trench, except no rocks larger than two inches (2") shall be used. Material from rock or shale excavation shall not be used. The contractor for the utility company or the utility company shall furnish density reports from a materials testing company verifying the densities. Densities shall be taken at each twelve-inch (12") lift at a maximum spacing of 150 feet.~~

~~(b) Parkway cleanup. The contractor for the utility company or utility company shall remove any rocks or excess trench material from the parkway and replace any disturbed areas with grass sod.~~

~~(2008 Code, pt. III-B, sec. 7.3)~~

~~Sec. 9.03.224 Additional permits or approvals~~

~~The developer or developer's representative is responsible for obtaining any other approvals or permits needed for their development, for example: TCEQ, FEMA, etc., prior to start of construction. Permitting from TxDOT must be through the city. The developer shall be responsible to prepare all necessary~~

~~studies and documents required to complete this process. Copies of the permits/approvals shall be furnished to the city. (2008 Code, pt. III-B, sec. 7.4)~~

~~Sec. 9.03.225 – Retaining walls~~

~~(a) Retaining walls or concrete slope protection shall be installed where lot slope is greater than 3:1.~~

~~(b) No railroad tie retaining walls shall be constructed.~~

~~(c) All retaining walls shall be stone, masonry or reinforced concrete.~~

~~(d) Retaining walls four feet (4') and higher shall be designed and inspected by a professional engineer registered in the State of Texas, and an engineering report furnished to the city.~~

~~(e) Gabion retaining walls may be used only with the city's engineer's approval for walls less than four feet (4') along drainage ways.~~

~~(2008 Code, pt. III-B, sec. 7.5)~~

~~Secs. 9.03.226–9.03.250 – Reserved~~

~~Division 8. Standard Specifications and Drawings~~

~~Sec. 9.03.251 – Standard specifications~~

~~Standard specifications, modifications to standard specifications, modifications to standard drawings and additional standard drawings, copies of which are on file in the office of the city secretary, are hereby adopted by reference, the same as though such specifications were copied at length herein. (Ordinance adopting 2019 Code)~~

~~Secs. 9.03.252–9.03.280 – Reserved~~

~~Division 9. General Construction Notes~~

~~Sec. 9.03.281 – General construction notes~~

~~General construction notes, a copy of which is on file in the office of the city secretary, is hereby adopted by reference and designated as the standard specifications of the city, the same as though such specifications were copied at length herein.~~

~~(Ordinance adopting 2019 Code)~~

Section 3. Penalty.

Any violation of any of the terms of this ordinance, whether denominated in this ordinance as unlawful or not, shall be deemed a misdemeanor. Any person convicted of any such violation shall be fined in an amount not to exceed $2,000 for each incidence of violation. Each violation is considered a separate offense and will be punished separately.

Section 4. Savings, Severability and Repealing Clauses.

All ordinances of the City in conflict with the provisions of this ordinance are repealed to the extent of that conflict. If any provision of this ordinance shall be held to be invalid or unconstitutional, the remainder of such ordinance shall continue in full force and effect the same as if such invalid or unconstitutional provision had never been a part thereof. The City declares that it would have passed this ordinance, and each section, subsection, clause, or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses, and phrases be declared unconstitutional or invalid.

Section 5. Publication of the Caption Hereof and Effective Date.

This ordinance shall be in full force and effective from and after its passage and upon the posting and/or publication, if required by law, of its caption and the City Secretary is hereby directed to implement such posting and/or publication.

Passed by the City Council of the City of Anna, Texas, this 28th day of April 2020.

APPROVED:

Mayor Nate Pike

CITY OF ANNA TEXAS

ATTEST:

City Secretary Carrie L. Land