

CITY OF JOHNSON CITY

ORDINANCE NO. _____

AN ORDINANCE AMENDING APPENDIX B: DESIGN STANDARDS AND SPECIFICATIONS MANUAL OF CHAPTER 10 SUBDIVISION REGULATION, ARTICLE 10.02 SUBDIVISION ORDINANCE OF THE CITY OF JOHNSON CITY CODE OF ORDINANCES; AND PROVIDING FOR AN EFFECTIVE DATE

RECITALS

WHEREAS, the City Council of the City of Johnson City ("City") on February 2, 2021 enacted the Design Standards and Specifications Manual ("Design Manual") of Chapter 10 Subdivision Regulation to provide for the orderly, safe, healthy, and uniform development of a subdivision within the City limits and its extraterritorial jurisdiction; and

WHEREAS, the City Council incorporated the Design Manual as Appendix B into revised Article 10.02 Subdivision Ordinance in Chapter 10 Subdivision Regulation revised and adopted on January 4, 2022; and

WHEREAS, the City Council desires to update and amend Section 3 Storm Drainage Facilities of the Design Manual for additional and secure compliance with national standards for stormwater detention and distribution; and

WHEREAS, pursuant to Texas Local Government Code Chapter 212, the City may adopt rules governing plats and the subdivision of land within its jurisdiction to promote the health, safety, standards, and general welfare of the City.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Johnson City:

ARTICLE I. FINDINGS OF FACT

The foregoing recitals are adopted as facts and are incorporated fully herein.

ARTICLE II. AMENDMENT, ADOPTION AND ENACTMENT

The City Council of the City of Johnson City hereby adopts and enacts the amendments to Section 3 Storm Drainage Facilities, and Section 4 Vegetation in *Appendix B. Design Standards and Specifications Manual* of Article 10.02 Subdivision Ordinance in Chapter 10 Subdivision Regulation, as depicted in "Attachment A" attached hereto and incorporated fully herein for all intents and purposes, with strikethroughs constituting deleted text and underlines as new text or format corrections, and to read as contained therein in the unmarked attachment.

ARTICLE III. REPEALER AND SEVERABILITY

REPEALER: All ordinances, or parts thereof, that are in conflict or inconsistent with any provision of this Ordinance are hereby repealed to the extent of such conflict, and the provisions of this Ordinance shall be and remain controlling as to the matters regulated, herein.

SEVERABILITY: Should any of the clauses, sentences, paragraphs, sections or parts of this Ordinance be deemed invalid, unconstitutional, or unenforceable by a court of law or administrative agency with jurisdiction over the matter, such action shall not be construed to affect any other valid portion of this Ordinance.

ARTICLE IV. EFFECTIVE DATE

This Ordinance shall be effective immediately upon passage and approval.

PASSED AND APPROVED this, the _____ day of _____, 2022,
by a majority vote of the City Council of Johnson City, Texas.

CITY OF JOHNSON CITY, TEXAS

Rhonda Stell, Mayor

Attest:

Whitney Walston
City Secretary

CITY OF JOHNSON CITY CODE OF ORDINANCES

CHAPTER 10. SUBDIVISION REGULATION

Appendix B. Design Standards and Specifications Manual

Revisions to

Section 3 Storm Drainage Facilities

Section 4 Vegetation

Section 3 STORM DRAINAGE FACILITIES

Introduction

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.

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.

Storm drainage released from the site will be discharged to a natural water course or storm sewer system of an adequate size to convey the 100-year storm runoff expected after development.

Detention ponds shall be designed for the 2-year and 100-year storm event.

3.1 Storm Drainage Design Criteria

- A. General: Design and analysis of all storm drainage facilities shall be in accordance with these guidelines and the City of Plano's current Storm Drainage Design Manual shall be used for storm drainage calculations. Where conflicts between these guidelines and the City of Plano's current Storm Drainage Design Manual exist, these guidelines shall govern. Where conflicts between the City of Johnson City's Code of Ordinances and the City of Plano's current Storm Drainage Design Manual exist, the City of Johnson City's Code of Ordinances shall govern. 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. Storm Pipe Material: RCP shall be used for all stormwater applications, no plastic pipe will be permitted in the fire lane.
- ~~D. 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.~~
- E-D. Floodplain: The 100-year existing conditions floodplain limits shall be determined for non-FEMA all water courses with a contributing drainage area of 100-acres or greater creeks or streams (flowing or not) within a subdivision in accordance with Section 3.3. In addition to defining the limits of the floodplain, the floodplain study must demonstrate the development will not be detrimental to any other property.
- F-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.

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G.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. Include recessed curb inlets for all streets that are not residential streets.

H-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-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 City Council.

3.2 Hydrology

A Hydrograph Method (HEC-HMS)

The hydrograph method is required for all drainage areas in excess of 200-acres, floodplain studies, and final detention sizing.

1) Design Rainfall:

Depth-Duration-Frequency (DDF) data at each project location should be determined from NOAA's Precipitation Frequency Data Server (PFDS) which reflects the NOAA Atlas 14 data.

Data Description: Data type "Precipitation Depth" with "English" units and "Annual maximum" time series type should be selected at the top of the PFDS prior to selecting point location.

Point Location: Engineers will need to use judgement when selecting an appropriate point to establish depth values. Consideration should be taken when depth values vary across a watershed or project area. The location of the selected depth values and a brief explanation of the selected point should be included in the drainage report. If the majority of the contributing watershed is located within City limits or the City ETJ, the DDF values at the Johnson City (41-4605) station may be used.

2) Frequency Storm:

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The 24-hour frequency storm distribution should be used for all hydrograph method analyses in HEC-HMS. Meteorological model parameters should be set as follows:

Annual-Partial Conversion: None

Storm Duration: 1 Day

Intensity Duration: 5 Minutes

Intensity Position: 50 Percent

Area Reduction: None (if area exceeds 10 square miles use areal reduction)

- 3) Control Specifications: Selection of an appropriate time interval is critical to the accuracy and performance of the HEC-HMS model. An appropriate time interval is related to the time of concentration of the watershed as shown in.

$$\Delta t = \frac{1}{5} t_c \text{ OR } \Delta t = \frac{1}{6} t_c$$

Where: Δt = time interval
 t_c = time of concentration

3.3 Floodplain Delineation, Studies, and Easement Dedication Requirements

A separate and detailed floodplain study prepared by a licensed professional engineer for all water courses meeting the conditions a floodplain recognized by the City, shall be submitted to provide theoretical verification of the maximum floodwater elevations that may be expected so that the potential effect on subdivision lots may be evaluated.

A. Floodplain Studies:

- 1) Floodplain studies shall be prepared in accordance with the City of Plano Stormwater Design Manual and these guidelines. Where conflicts exist, these guidelines shall govern.
- 2) Hydrology for floodplain studies shall be developed using the United States Army Corps of Engineers (USACE) Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS).
- 3) Hydraulics for floodplain studies shall be developed using the USACE Hydrologic Engineering Center River Analysis System (HEC-RAS).
- 4) Floodplain studies should follow FEMA standards and, at a minimum, include the items in the Floodplain Study Checklist in Attachment XX.

B. Floodplains

- 1) Floodplains shall be delineated for each watercourse with a contributing drainage area of 100-acres or greater. For a watercourse with less than 100-acres of contributing area, a floodplain is not required to be delineated unless the area is already defined as floodplain by FEMA.
- 2) Floodplains shall be delineated assuming "existing" land use conditions in the contributing watershed.

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C. FEMA Floodplains

- 1) Special flood hazard areas (SFHZ) defined on the FEMA FIRM's depict floodplain boundaries at the time of study, based on "existing" development conditions within the watershed. Analysis for FEMA submittals will require "existing" land use conditions in the contributing watershed.
- 2) Where a subdivision or development proposes to modify the limits of the FEMA floodplain, the City will require the applicant submit CLOMR and LOMR applications to FEMA. As the local floodplain administrator, the City must review and acknowledge certain CLOMR and LOMR requests.
- 3) The applicant shall bear the cost of engineering services required to develop the application, respond to review comments, and obtain final approval of CLOMRs and LOMRs. The applicant shall bear the cost of any fees associated with review and disposition of LOMCs and CLOMCs that are established by FEMA.
- 4) Where a CLOMR is required, the applicant must provide evidence of CLOMR approval from FEMA prior to issuance of a City Floodplain permit.

D. Floodplain Easements

Floodplain easements shall be defined by the 100-year floodplain or the 100-year floodplain depicted on the FEMA Flood Insurance Rate Map (FIRM), whichever is greater.

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Section 4 VEGETATION

4.1 General

All seeding, sodding and fertilizer requirements are to be completed in accordance with the Capital Area Council of Governments (CAPACTCOG) Standards and Specifications and as modified by the City of Johnson City, herein

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.

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.