ORDINANCE NO. 2024-12

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF SAINT HEDWIG, TEXAS AUTHORIZING, ESTABLISHING AND APPROVING A PUBLIC WORKS DESIGN GUIDANCE MANUAL; AND AUTHORIZING THE CITY MANAGER OR HIS/HER DESIGNEE TO AMEND THE MANUAL; REPEALING ALL ORDINANCES TO THE EXTENT THEY ARE IN CONFLICT; PROVIDING FOR SEVERABLITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Saint Hedwig ("City") is a Texas General Law Municipality operating under the laws of the State of Texas; and

WHEREAS, the City is empowered by Chapter 212 of the Texas Local Government Code to establish subdivision regulations within the incorporated limits of the City and the technical specifications and processes necessary for orderly development within the municipality; and

WHEREAS, the City Council desires to establish a Public Works Design Guidance Manual containing specifications necessary to complete public works projects; and

WHEREAS, the City Council desires to authorize the City Manager to maintain and amend the Public Works Design Guidance Manual from time to time as needed; and

WHEREAS, the City Council held a public hearing pursuant to published notice and has considered the proposed Public Works Design Guidance Manual, comments, reports, and recommendations of staff, public testimony, and other relevant support materials; and

WHEREAS, the City Council desires that the City Manager makes the Public Works Design Guidance Manual available to the public upon request or by posting the manuals on the City's website; and

WHEREAS, the City Council finds that the establishment of a Public Works Design Guidance Manual will serve a public purpose by allowing for a more efficient government.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF SAINT HEDWIG, TEXAS:

SECTION 1. The recitals contained in the preamble hereof are hereby found to be true, and such recitals are hereby made a part of this Ordinance for all purposes and are adopted as a part of the judgment and findings of the Council.

SECTION 2. The Public Works Design Guidance Manual is hereby established as set forth in **Exhibit A** attached hereto.

SECTION 3. The City Manager or his/her designee is authorized to amend the Public Works Design Guidance Manual as needed.

SECTION 4. The Public Works Design Guidance Manual shall be made available to the public upon request or by posting to the City's website.

SECTION 5. If any provision of this Ordinance shall be held void or unconstitutional, it is hereby provided that all other parts of the same which are not held void or unconstitutional shall remain in full force and effect.

SECTION 6. This Ordinance shall be cumulative of all provisions of ordinances of the City except where the provisions of the Ordinance are in direct conflict with the provisions of such ordinances, in which event the conflicting provisions of such ordinances are hereby repealed.

SECTION 7. This Ordinance shall be construed and enforced in accordance with the laws of the State of Texas and the United States of America.

SECTION 8. That all rights and privileges of the City and individual landowners are expressly saved as to any and all pending permits issued under the provisions of any existing specifications or standards, or lack thereof, which have accrued at the time of the effective date of this Ordinance; and, as to such accrued rights, construction and inspections shall continue using the standards and specifications in effect or being followed at the time of permit issuance.

SECTION 9. It is officially found, determined, and declared that the meeting at which this Ordinance is adopted was open to the public in compliance with the advisory issued by the Office of the Governor and public notice of the time, place, and subject matter of the public business to be considered at such meeting, including this Ordinance, was given all as required by the Texas Government Code, Chapter 551, as amended.

SECTION 10. This Ordinance shall be in full force and effect after its final passage and approval by the City Council, as duly attested by the Mayor and City Secretary, and any publication required by law.

PASSED AND APPROVED this 3rd day of October, 2024.

CITY OF SAINT HEDWIG, TEXAS

By: _____
Dee Grimm, Mayor

ATTEST:

_____
Janice Staudt, City Secretary

Exhibit A PUBLIC WORKS DESIGN GUIDANCE MANUAL

Public Works Design Guidance Manual

City of Saint Hedwig, TX

Contents

Section 1- Purpose & Applicability

This *Public Works Design Guidance Manual* contains specifications necessary to complete public projects including but not limited to roadway design specifications, traffic impact requirements, utility easement specifications, and driveway requirements. This document contains various construction details, specifications, and requirements which are the minimum requirements for public facilities. The purpose of this manual is to establish standards for the design and construction of infrastructure and to protect and preserve the public welfare.

Every subdivision or land development which requires installation of public infrastructure must submit construction plans consistent with these design standards and specifications to ensure compliance with all applicable requirements.

Section 2- Appeals

Any deviation from the standards in this manual must be approved by the City Manager or their designee who must ensure that any modification is not detrimental to the public welfare, is not varying requirements of any other City ordinance or regulation, and is based on an engineering study performed by a Professional Engineer, where required.

Section 3- Amendment

The Public Works Design Guidance Manual may be adopted and updated from time to time by ordinance approved by the City Council. In accordance with Texas Local Government Code Sections 212.002 & 212.0021, prior to adopting or amending the Public Works Design Guidance Manual a public hearing is required and notice of the public hearing shall be published in a newspaper of general circulation in the city.

Section 4- Construction Plans & Inspections

Sec. 4.1- Construction Plan Submittal Format

All construction plans for proposed public water, sanitary sewer, street, drainage, and traffic control devices shall be submitted in the designated format:

a. Cover Sheet – containing the project title, legal property description, City name, vicinity map, Public Works signature block, sheet index, and submitting client information. The project title and legal description shall also be placed vertically along the right border in small print. The submitting client information shall contain the owner, engineer, and surveyor's name, address, and telephone number.
b. Plat - copy of current plat bound with plans. The signed plat shall be bound with the as-built drawings.
c. Site Plan – showing the location and width of all existing and proposed street and driveway approaches and median openings, noting the back-of-curb radii, all building footprints, location of proposed water, sanitary sewer, and drainage systems, proposed landscaping and parking layout, existing and proposed easements, limits of 100-year floodplain, lot lines, sidewalks, and street lights.
d. Drainage Layout – containing a drainage area map and calculations with all existing contours, existing and proposed storm drains, and/or other drainage facilities. The drainage area map shall extend at least 200 feet beyond the limits of the drainage areas affecting the site in all directions. Plan and profile sheets shall be submitted for all storm drains, flumes, and channels. Stationing shall be generally left to right and with stationing beginning at the downstream end for all storm drains, flumes, and channels. Appropriate hydraulic grade line or water surface profile shall be plotted with all drainage design. Capacity, design discharge, velocity, velocity head shall be noted on each segment of drainage facility in the profile whenever one or more of these parameters change.
e. Utility Plan – showing the location and size of all existing and proposed water and sanitary sewer lines with adjacent existing or proposed top of curb grades. Provide the location of all existing and proposed fire hydrants adjacent to the site including the maximum coverage radius of each as outlined in later sections of this Manual. Plan and profile sheets shall be submitted for all sanitary sewer lines and for water lines 12 inches in diameter and larger. Stationing shall be generally left to right and with stationing beginning at the downstream end for all sanitary sewer lines.
f. Grading Plan – showing a topographical map of the subdivision which shows existing and proposed elevations and drainage patterns, and any watercourses. The plan must also include proposed flow arrows, cross sections, spot elevations, and finished floor

elevations for properties adjacent to the floodplain, drainage easements, or other locations as determined by the City Manager or their designee.

g. Erosion Control Plan – showing a layout of development, storm drain inlets, storm drain manholes, drainage channels, detention/retention facilities, 5-foot contours, construction entrance, and other required erosion control measures.
h. Subdivision Layout & Street Light Plan - showing a layout of the subdivision including all lots, lot numbers, sidewalks, curbs, curb ramps, curb inlets, storm drain manholes, water meters, fire hydrants, sanitary sewer manholes, clean-outs, and street lights. The plan shall not include pipes, trees, centerlines, baselines, contours, culverts, services, street markings or construction notes.
i. Detail Sheet – showing all details for improvements which are to become public.

Sec. 4.2- General Construction Plan Requirements

Three complete sets of construction plans, specifications and contract documents shall be filed with the City Manager or his/her representative upon filing of a final plat. These plans and specifications shall include but are not limited to street plans, drainage system plans, sanitary sewer system plans, water system plans and the overall utility layout. The street plans shall show roadway cross sections and longitudinal slope for drainage, a full description of the proposed pavement or other street improvements, and its grade and slope. The drainage, sanitary sewer, water and utility system plans shall show the dimensions and specifications of the improvements to be installed, including proposed position on the ground, specifications of materials and construction, profile maps showing both ground surface and flow line, and other pertinent information of similar nature. All construction plans shall meet the following requirements:

a. Plans are to be designed, signed, sealed, and dated by a Professional Civil Engineer registered in the State of Texas.
b. Horizontal scale shall be 1 inch equals 50 feet (1"=50') or larger, i.e. 1"= 40', vertical scale shall be 1 inch equals 5 feet (1" = 5') or larger.
c. Plan and profile sheets shall be at least 22 inches wide by 34 inches long.
d. Stationing shall be included on the plan view as well as the profile for all roads, water, sanitary sewer, storm drain and channel sheets. Elevations shall be calculated and provided in all profiles as indicated below.
    i. Straight grade - provide elevations at a maximum interval of 100 feet.
    ii. Vertical curve - provide elevations at the beginning and ending points and at a maximum interval of 25 feet in between.

e. The developer shall furnish all easements and right-of-way (ROW) necessary for construction of electrical, gas, cable TV, telephone service, and any other such public utility to the proposed subdivision.
f. Construction Plans will be reviewed by the City and signed after all comments have been resolved. Construction must start within one (1) year following the City signature. Plans for projects which have not started construction within this time period must be submitted to the City for a new review.

Sec. 4.3- Installation of Utilities Before Paving.

Unless the subdivider shall have received prior written permission to the contrary from the City Manager or his/her representative, all utilities must be installed prior to the paving of a street or alley or portion thereof.

Sec. 4.4- Inspection of Improvements.

The City Manager or his/her representative shall from time to time inspect the construction of all utility facilities and streets in the subdivision during the course of construction to that see they comply with the standards governing them. In this regard, free access to the subdivision shall be accorded the City Manager or his/her representative by the subdivider and the subdivider's agents and employees.

Sec. 4.5- Final Plans.

Upon the completion of construction of any utility or improvement, two sets of reproducible tracings of complete record drawings, dated, signed, and certified by the engineer in charge, shall be filed with the City, showing all features as actually installed, including materials, size, location, depth of elevation, numbers, end of lines, connections, wyes, valves, storm sewer drains, inlets, and any other pertinent items. The City shall not accept such utilities or improvements until the foregoing has been submitted to and approved by the City Manager or his/her representative.

Section 5 - Street Design & Traffic Impacts Standards

Sec. 5.1- Street Geometry Standards

A. General Requirements.

The design of all streets in a subdivision shall conform to the standards of street geometry in the following table.

Table B. Street Geometry Standards				
Street Classification	Pavement Crown or Cross Slope	Minimum Grade	Maximum Grade	Centerline Minimum Horizontal Curve Radius
Major Thoroughfare	4"	0.30%	6%	1200'
Primary Collector	6"	0.30%	6%	600'
Secondary Collector	6"	0.30%	8%	400'
Minor Street	5"	0.30%	10%	150'
Marginal Access	4"	0.30%	10%	100'
Residential Alley	0-7"	0.30%	10%	50'
Commercial Alley	0-7"	0.30%	10%	50'

B. Other Exceptions to Minimum Radius Requirement.

Exceptions to the minimum centerline horizontal radius requirement in this Section (other than those authorized by Table B above) may be granted by the City Manager or his/her representative.

C. Reverse Curves.

Reverse curves shall be separated by a minimum tangent of 100 feet.

D. Vertical Curvature.

A gradual transition from one roadway grade to another shall be accomplished by means of a vertical parallel curve connecting two intersecting tangents. The minimum length of vertical curve shall be computed from the following formula and table:

$$L = KA$$

Where L = the length of vertical curve in feet

K = a constant related to sight distance and geometry of a parabolic curve (see Table C)

A = the algebraic difference in grades in percent.

Table C. Design Values for Constant "K," Vertical Curvature		
Street Classification	"K" Crest Curves	"K" Sag Curves
Major Thoroughfare	70	60
Primary Collector	70	60
Secondary Collector	55	55

E. Sight Distance Requirements.

The minimum sight distances in the following table shall be provided for safe stopping and intersection operations. Where streets are not level, or where other potentially hazardous conditions exist, these distances shall be increased as necessary in the judgment of the City Manager or his/her representative.

Table D. Minimum Sight Distances		
Street Classification	Minimum Intersection Sight Distance	Minimum Stopping Sight Distance
Major Thoroughfare	450 feet	300 feet
Primary Collector	400 feet	300 feet
Secondary Collector	300 feet	250 feet

F. Intersection Design.

All streets shall intersect at a 90-degree angle, or as close as possible to a 90-degree angle considering the topography of the site. Variations must be approved by the City Manager or his/her representative. Each new street intersecting with or extending to meet an existing street shall be tied to the existing street on centerline unless the new street ends at a "T" in mid-block.

Sec. 5.2- Minimum Pavement Design Standards

Except as provided in the following section, Alternative Pavement Design, the pavement of all streets and alleys shall meet the minimum specifications in the following table.

Table E. Minimum Pavement Design Standards			
Street Classification	Type D Asphalt Surface Course (lbs./sq. yard)	Flex Base 95 % Compacted Density (inches)	Subgrade % Compacted Density
Major Thoroughfare	220	12	90
Primary Collector	190	10	90
Secondary Collector	165	8	90
Minor Street	165	8	90
Marginal Access	165	8	90
Residential Alley	110	8	90
Commercial Alley	165	8	90

Sec. 5.3- Standards For Alternate Pavement Designs

The City Manager or his/her representative may approve alternative pavement designs provided such alternative is so designed, in the judgment of the City Manager or his/her representative, as to assure reasonable durability and economy of maintenance and provided the alternative is in accordance with the subdivision ordinace and Table B and the following provisions of this Section.

A. Soils Investigation.

The subdivider shall, at his/her own expense, cause to be made a soils investigation by a qualified and independent geotechnical engineer licensed to practice in the State of Texas. The field investigation shall include test borings within the rights-of-way of all proposed streets. The number and locations of such borings shall be subject to the approval of the City Manager or his/her representative. Atterberg limits and moisture contents shall be determined for all significant boring samples. The method used for these determinations shall be the same as that used by the Texas Department of Transportation using their latest Manual of Testing Procedures, 100-E Series test methods. The results of the soils investigation shall be presented to the subdivider and to the City Manager or his/her representative in written report form. Included as a part of the report shall be a graphical or tabular presentation of the boring data giving Atterberg limits and moisture contents, a soil description of the layers of different soils encountered in the profile of the hole, their limits in relation to a fixed surface datum, and such other information as needed to complete the soils investigation for pavement design purposes. Minimum depth of soil profile boring holes shall be 10 feet unless solid rock formations are encountered sooner.

B. Pavement Design Loads.

Pavement design shall be based on the Texas Department of Transportation tri-axial design standards in the following table.

Table F. Minimum Pavement Load Standards			
Street Classification	Total Equivalent 18kip Single Axle Load Application	Average Ten Heavy Wheel Loads Daily	Load Frequency Design Factor
Major Thoroughfare	500,000	10,500	1.05
Primary Collector	300,000	10,000	1
Secondary Collector	300,000	10,000	1
Minor Street	60,000	6,000	0.8
Marginal Access	60,000	6,000	0.8

A written report containing pavement design data and recommendations based on the soils investigation shall be prepared at the subdivider's expense by a qualified geotechnical engineer licensed to practice in the State of Texas, and shall be presented to the subdivider and to the City Manager or his/her representative. The report shall state the load criteria and the soil classifications used. When approved by the City Manager or his/her representative, the geotechnical engineer preparing the report may use the triaxial classification soils data given in Texas Department of Transportation report number 3-05-71-035, entitled "Tri-axial Classification of the Surface Soils of Texas, as Grouped by Soil Conservation Service Series."

When using the tri-axial data, the report shall so state. The pavement design shall be subject to the approval of the City Manager or his/her representative and shall be shown on the street construction plans as approved. Where the plasticity index of the subgrade soil on which the street is to be built is in excess of 20, the pavement design shall include subgrade stabilization unless approved otherwise by the City Manager or his/her representative.

When subgrade soils are stabilized, the minimum depth of stabilization shall be six inches unless otherwise approved by the City Manager or his/her representative. In the stabilization of swelling clay soils, the stabilizer used shall be hydrated lime. The lime shall be applied to the subgrade soil in slurry form unless otherwise approved by the City Manager or his/her representative. Flexible base material and the stabilized layer, if used, shall extend at least 18 inches behind the back of the curb. Minimum thicknesses of hot-mix, hot-lay asphaltic concrete included in the pavement design shall be one and one-half inches for minor streets and marginal access streets, two inches for collector streets, and three- and one-half inches for major thoroughfares. Street and alley pavements in commercial and industrial areas shall utilize the design standards set forth herein for primary collector streets.

Sec. 5.4- Curbs

All streets shall have reinforced concrete curbs extending seven and one-half inches above the pavement surface. Minimum curb radii shall be as follows:

Table G. Minimum Curb Radius Requirements	
Street Intersections	25 feet
Non-residential Driveways	10 feet
Residential Driveways	5 feet

Compacted backfill shall be placed on all rights-of-way behind curbs to a minimum elevation equal to the top of the curb. Normal curb exposure shall be required where utility easements intersect streets.

Sec. 5.5- Sidewalks

A. General Requirements.

Sidewalks are not required and shall be optional. If a sidewalk is proposed it shall meet the minimum standards laid out in the City's subdivsion ordinance and in this section. Major thoroughfares and primary collector streets shall have minimum six-foot wide sidewalks, and each street other than a major thoroughfare or a primary collector shall have minimum four-foot-wide sidewalks. Ramps shall be required where all sidewalks meet curbs and must be compliant with Americans with Disabilities Act (ADA) standards and Texas Accessibility Standards (TAS).

B. Location of Sidewalks.

Sidewalks along major thoroughfares and collector streets shall be located in the street right-of-way, adjacent to and parallel to either the property line or the curb, as determined by the City Manager or his/her representative to be most advantageous in connecting to adjacent developments. Sidewalks along other streets may be located either in the street right-of-way or in a five-foot wide sidewalk easement. Along minor streets, sidewalks shall be adjacent to and abutting the property line, unless the City Manager or his/her representative approves an alternate location adjacent to the curb, in which case the minimum width shall be increased to five feet. Sidewalks shall extend along all street frontages including the side of corner lots and block ends. If physical circumstances prevent locating the sidewalks as provided by this Section, then the exact location shall be at the discretion of the City Manager or his/her representative.

C. Accessibility.

Sidewalks shall meet all applicable requirements of the Americans with Disabilities Act (ADA) and the Texas Accessibility Standards (TAS).

Sec. 5.6 - Traffic Control Signs and Street Signs

All traffic control signs shall be provided and installed by the subdivider and shall conform with the Texas Manual on Uniform Traffic Control Devices for Streets and Highways, Volumes 1 and 2. All street signs shall be provided and installed by the subdivider and shall conform with the Texas Manual on Uniform Traffic Control Devices for Streets and Highways, Volumes 1 and 2.

Sec. 5.7- Street Lighting

Street lighting shall be provided by the subdivider at all intersections and street alignment changes greater than 45 degrees. Street lighting shall conform with the standards and requirements established by City Public Service or the electrical provider for the City of St. Hedwig.

Section 6 - Drainage Standards

Reserved. See Subdivision Ordinance for Drainage Standards.